

Archaeological Services  
Durham University

**A Romano-British villa and settlement at  
Ingleby Barwick, Stockton-on-Tees**

**archaeological excavation**

**Part A: summary and synthesis**

**Part B: the results of the excavation**

*on behalf of*

**English Heritage**



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## **Part A: summary and synthesis**

### **1. Quarry Farm**

#### **The project and the report**

- 1.1 This report presents the results of an archaeological excavation conducted in advance of a housing development on the site of Quarry Farm, Ingleby Barwick, Stockton-on-Tees (NGR NZ 437 150).
- 1.2 The site was identified through aerial photography in 1970, and a small-scale excavation was undertaken as a result (Heslop 1984). Further work was undertaken from the 1990s onwards, and took the form of fieldwalking, geophysical survey and trial trenching. This established the presence of a Roman villa, with a winged corridor main building, associated villa buildings, and an extensive associated settlement and enclosure system covering an area of about four hectares (Archaeological Services 2000a). The site is the most northerly known Roman villa surviving in the Empire.
- 1.3 Because of the significance of this discovery, it was decided that excavation of the site should be undertaken prior to development. Planning permission for the development of a housing estate had been granted prior to the instigation of PPG16, and therefore there was no archaeological condition on the development. However, Persimmon Homes and Tees Archaeology agreed a framework for archaeological investigation prior to the start of groundworks (Archaeological Services 2000b).
- 1.4 The winged corridor building itself, and part of the enclosure system to its west, was preserved in an area of open ground in the new development, whilst ancillary buildings and part of the enclosure system was excavated. The excavation and post-excavation assessment was funded by Persimmon Homes. Post-excavation analysis and the production of this report was funded by English Heritage.
- 1.5 This report contains an account of the open-area excavation of the buildings and associated enclosure system. Part A (this volume) provides a summary of the excavation results together with a synthetic discussion and conclusions. Part B (this volume) contains the detailed account of the findings of the excavations. Part C contains the appendices and Part D the plans and other illustrations.

#### **Project aim and objectives**

- 1.6 The project's aim was to preserve the site by record, through excavation in advance of its destruction.
- 1.7 The excavation targeted specific areas of the settlement complex to meet the following objectives:
  1. To provide a date for the establishment of the villa settlement.
  2. To define the chronological relationship between the villa settlement and any preceding or successor settlement on the site.



3. To identify the method of construction and function of the ‘ancillary’ buildings of the villa complex.
4. To define the character, function, internal organisation and phasing of the enclosures related to the villa settlement.
5. To clarify the relationship between groups of enclosures.
6. To define the relationship of the enclosures and associated trackways with any field systems.

### **The site**

- 1.8 The Quarry farm site lies on fairly level ground near the south bank of the Tees. The terrace on which the villa stood is some metres above the level of the river, with a lower-lying holme in a meander immediately north of the site. There is higher ground on the north bank of the river to the north and west. The soils around the site are developed on glacial clay, but large despoits of sand and gravel exists on the site itself. It was the presence of this gravelly subsoil that made the site visible as a cropmark, and it also makes the soil drier and more open than is the case elsewhere. It is likely that the benefits of better soil and drainage made this spot preferable for farming throughout the site’s history. A whinstone dyke runs across the area a little to the north of Quarry Farm. Nineteenth-century exploitation of this hard rock, which was used to make setts, gave the site its name.

### **Summary of results**

- 1.9 Phase 1 covers early prehistoric activity on the site. 230 unstratified and residual lithics were recovered during the excavation. These were largely undiagnostic, but indicate that the area was being exploited from the later Mesolithic period onwards. Late Neolithic and Bronze Age activity is demonstrated with the presence of a small number of pits and a single gully. These are located across the site, and no surviving focus for activity in this phase was identified. Significant finds include the sherds of seven vessels, a polished stone axe recovered from a later context and likely to be a curated item, and an unstratified copper punch or chisel. Carbonised residue from one of the vessels was radiocarbon dated to 2290-2020 cal BC (95% confidence). Cereal remains were recovered from a single pit and have been radiocarbon dated to 1420-1250 cal BC (95% confidence).
- 1.10 Phase 2 activity is pre-Flavian, but probably reflects late Iron Age activity. A roundhouse gully in the southwest corner of the site probably dates from the later prehistoric period. A small number of other features were identified scattered across the site, including two pits containing pottery exclusively of Iron Age tradition. Later prehistoric activity was also identified through previous archaeological work at Quarry Farm.
- 1.11 Phases 3-5 date from the Romano-British period, when a villa was established. This comprised a winged corridor house, with rectangular stone structures to the northeast and northwest, a detached *caldarium* (heated room) to the east, a stone circular building to the south, ancillary structures, and an associated enclosure system to the north and west. Artefactual evidence and radiocarbon dating indicates that the settlement is like to date from the later 2<sup>nd</sup> century through to the late 4<sup>th</sup> - early 5<sup>th</sup> century.

- 1.12 Phase 3 has been dated to the later 2<sup>nd</sup> and 3<sup>rd</sup> centuries. The winged corridor house was not excavated but is presumed to date to this period. The aisled building and *caldarium* were constructed to the east of this building. Evidence for a third very disturbed stone structure with internal paving was also excavated in this area. Remains of walls were located to the west of the aisled building, indicating that further structures had been present. The enclosure system comprised a series of ditched boundaries to the north and west of the winged corridor house. A north-south boundary ditch was established between these enclosures and the villa during this phase. Postholes to the northeast of the winged corridor building indicate that there were wooden structures and fencelines in these areas. Further gullies, pits and postholes were also found across the site, as well as two ovens.
- 1.13 Phase 4 begins in the 3<sup>rd</sup> century and runs until around AD 350. The *caldarium* was converted into a corn-dryer. A sunken paved surface was made in the southeast corner of the site; a millstone was incorporated into this surface. Further alterations were made to the enclosures, and pits and gullies were excavated northeast and northwest of the winged corridor house. Two ovens, one of which was associated with an inhumation, also belong to this phase.
- 1.14 Phase 5 runs from the later 4<sup>th</sup> to the early 5<sup>th</sup> century. A semi-circular timber structure was erected to the south of the winged corridor house. This was subsequently replaced with a circular stone building. The sunken paved surface was backfilled and covered by a metalled surface associated with an east-west wall. A villa enclosure ditch later cut through this, but does not appear to have been in use for long as a late corn corn-dryer was built over it. When this structure was abandoned a cist burial was inserted into it. Three other inhumations belong to this phase. Two of the burials were submitted for radiocarbon dating. One of the pair of burials was dated to cal AD 230-400 (95% confidence), and the cist burial was dated to cal AD 230-390 (95% confidence). The aisled building was modified, with a partition constructed at the western end of the building. Two ovens were located within this part of the building, and further ovens were spread across the site. The corn-dryer which had replaced the *caldarium* was backfilled with clay. A large paved surface was constructed to the northwest of the winged corridor house. Gullies, pits and postholes were also associated with this phase of activity.
- 1.15 Phase 6 relates to occupation dating to the Anglian period, and is reflected by the presence of 198 sherds of pottery (13% of the pottery assemblage). These were found in association with a number of features, including a series of intercutting pits to the north of the winged corridor house, two large rectangular hollows which may be *Grubenhäuser*, and several fire pits. Three of the fire pits were sampled for radiocarbon dating, and the combined results suggests a likely date range starting at cal AD 350-520 (68% probability) and ending in cal AD 550-690 (68% probability).
- 1.16 Phase 7 relates to medieval cultivation practices, post-medieval and modern activity.

- 1.17 Four or possibly five human burials were excavated, although all were poorly preserved and it was not possible to definitely sex any of the remains. Two of the burials were placed in association with one another, although one of these burials could not be positively identified as human. The others were spread across the site.
- 1.18 The remains of at least seven early prehistoric vessels were found, along with 2670 sherds of pottery dating from the late prehistoric to the Anglian period. The samian assemblage of 45 sherds is one of the largest from a rural site in northern Britain. There were three major periods of pottery deposition: in the Antonine period; from the later 3<sup>rd</sup> to early 4<sup>th</sup> century; and from the late 4<sup>th</sup> to early 5<sup>th</sup> century. The small finds assemblage is dominated by iron objects, with copper, lead, pewter, and silver forming the remaining metal-types. A metalwork hoard was discovered, comprising 53 artefacts relating to woodworking. Also of interest are a Bronze Age punch or chisel, a late Roman gilt bronze crossbow brooch, and the handle of a late Roman bronze vessel. Very few nails were recovered from the site compared with other Roman sites of all types, possibly indicating that different carpentry techniques were taking place, or that iron was being recycled. 19 coins were found through excavation and with the aid of metal-detectors. One of these dates to the early 2<sup>nd</sup> century, and a second to the early 3<sup>rd</sup> century, but the remainder are late 3<sup>rd</sup> or 4<sup>th</sup> century date. Nine of these date to the second half of the 4<sup>th</sup> century, and significantly three of these are very late 4<sup>th</sup> century in date, representing the latest import of coinage to Roman Britain. 38 sherds of glass were recovered indicating a variety of objects were present. The most significant vessel in the glass assemblage was a late Roman polychrome dish or bowl. Other artefacts included seven pieces of tableware, three drinking vessels, one jug or jar, and five containers. Two bangles and a bead were also found. The animal bone assemblage indicates that a variety of animals were present on the site. The majority of the assemblage derives from domestic farm animals, mostly cattle but also pig and sheep/goat. Horse and dog were also identified, but not evidence for the hunting of wild animals for food; the only red deer remains recovered were antler. Poultry was only present in Phase 6, but this probably reflects a lack of preservation. 13 querns fragments were recovered, including saddle, beehive and rotary querns and a large millstone, as well as one piece of basalt lava. A number of stone, ceramic and bone objects were also recovered, including whetstones and a Neolithic stone axe. The finds assemblage also includes building materials and industrial residues.
- 1.19 177 contexts were sampled for environmental analysis, of which 25 were submitted for full analysis. During the prehistoric phase emmer wheat and naked barley were cultivated in an environment of well-manured damp ground. Roman agriculture was dominated by spelt wheat and hulled barley. Some bread wheat, oats and rye were present, but not enough to indicate these were being cultivated. The crops appear to be more weed-free than elsewhere in north-east England, perhaps indicating the availability of labour for weeding. Pollen analysis of one of the Roman ditches indicates that the surrounding landscape comprised agricultural land, possibly pasture and

arable, with a large area of alder carr and some drier heath on higher ground. Oak and pine formed the regional woodland.

## **2. Discussion** *Dr Steven Willis*

### **Introduction: regional background and significance**

- 2.1 The works undertaken at Quarry Farm have resulted in the recovery of a large and varied corpus of information relating to a site manifest in stone buildings and other features that we can, using conventional criteria, characterise as a villa complex with ancillary elements (Percival 1976). The fact that what evidently appears to be the main domestic structure has been preserved without disturbance or direct archaeological investigation means that many questions around the identity and character of the site remain unanswerable. On the other hand the archaeological investigations at Quarry Farm have been unique within the region insofar as the work has enabled the concerted sampling of a villa environment and its associated features using state of the art techniques. A long sequence, and a qualitatively diverse range of features and deposits, have been examined through survey, excavation and sampling. Relatively good preservation of some categories of remains means that a range of data have been recovered and analysed. The value of this work needs to be seen in the light of the state of research on villas and rural environs in Roman Britain generally, and in terms of the specific regional picture of development through that era.
- 2.2 The project and its contribution to knowledge of the Roman era in the region and beyond can be viewed from a number of perspectives. On the one hand, as the volume makes clear, the evidence forthcoming from the excavation sheds light on the nature of culture and economy in the Tees Lowlands at a time when the region was part of the hinterland of the Roman imperial frontier. This information adds to the picture emerging from other fieldwork and survey conducted in the Tees Lowlands over the past 20 years (eg. Still *et al.* 1989; Annis 1996; Hingley 2004; Petts with Gerrard 2006; Taylor 2007). On the other hand the excavations have represented a rare opportunity to investigate and characterise a villa and its attributes in the context of northern Britain and the north-east of England, where such sites are not numerous and opportunities for fieldwork in recent years have been limited. The analysis of the site data contributes information on the economy of villa life, spatial organisation, functional zoning, etc., which enhances our knowledge of villas in Britain generally and ties in with research priorities identified in the national document for the Roman era (James and Millett 2001; Taylor 2001).
- 2.3 The Quarry Farm villa is now one of four such sites confirmed in the north-east of England. The present site shares a series of similarities with its regional neighbours, these sites being Old Durham (Richmond *et al.* 1944; Wright and Gillam 1951), Holme House, Piercebridge (Harding 1984) and Dalton-on-Tees, near Croft (Brown 1999). Whilst the Piercebridge villa may have earlier origins, all four villas are associated with the mid to late Roman period. Some parallels between these sites can be identified in general, yet they vary considerably in fundamental respects, for instance, in terms of

building morphology and layout, and indeed with regard to what we know of them.

- 2.4 It is important to note that for various reasons none of these three other sites is fully characterised via systematic excavation, post-excavation study and publication to established standards. As is well known, the apparent villa complex at Old Durham, the most northerly known villa of the Empire, was destroyed through piecemeal aggregate extraction in the mid 20<sup>th</sup> century, such that only reports upon salvaged details are available; additionally, evidence for its immediate environment was similarly removed. The Holme House site was extensively excavated between 1969-70 and despite the appearance of a lengthy summary report (Harding 1984) is only now being written about in a fuller manner. Here too the immediate environment has been lost through quarrying. The Dalton-on-Tees site has been subject to exploration via trenching to reveal details of its plan and preservation, with some selective excavation. Again details of this recent work have not been fully published yet. In this case the site survives.
- 2.5 It needs also to be recalled that in the adjacent region of Yorkshire more villas are known (albeit these are clustered in certain areas) but likewise for this area we are dependent upon older excavations and publications, with few sites well known via extensive investigation in recent decades that has been seen through to publication, Beadlam (Neal 1996), Dalton Parlours (Wrathmell and Nicholson 1990) and Rudston (Stead 1980) being exceptions. Hence the regional context is one of a marked paucity of reliable information recovered to modern standards upon villas and their milieux, functions and cultural manifestations. However, this is part of a wider trend in which, over past years, there has been a shift away from fieldwork at villas (cf. Darvill and Russell 2002). Hence, at regional and national levels an examination of the context of a villa as here is timely.

#### **The villa: site location and development**

- 2.6 The advantages of locating settlement and activities on the gravel and sand 'island' at this point in the Tees valley are noted in several of the specialist reports and in the general commentary. Some further aspects regarding location can be considered.
- 2.7 The site of the villa lies adjacent to a point of stone exposure by the Tees, in the form of a dolerite sill, being part of the Cleveland-Whinstone Dyke, and a blister of Triassic Sherwood Sandstone. The latter forms the main underlying solid geology of red and white sandstones in this area, which is mostly masked by drift deposits (Institute of Geological Sciences, Tyne-Tees Sheet 54°N-02°W, solid geology, 1981). The outcrop may have led to the deposition of the gravel island, on which the present site is located, in the periglacial/post-glacial era. This stone outcrop is unusual in the middle and lower Tees (cf. Heslop 1984, Fig.1) and it may be no coincidence that the occupation and villa developed at this point. Dolerite and other igneous rocks were widely employed as pottery temper in this region, and elsewhere, in later prehistory and it may be that their association with dramatic land forms (eg. The Lizard, The Malverns, the Charnwood Forest and the Clee Hills) and their robust and

often crystalline nature lead to such rocks being invested with a special significance (eg. Peacock 1967; 1968; Morris 1983; Willis 1999; 2000a; Harrad 2003). Was this a focus for activity and occupation because not only was there fresh water and comparatively well-drained land here, but for symbolic reasons too: the cultural significance of the dolerite exposure? Further, it is likely that local sandstone was used as a major rock source for the fabric of the villa which includes 'white' and red sandstone (cf. McLaren and Hunter above), potentially from this adjacent outcrop. The area of stone exposure was quarried in the 19<sup>th</sup> century; could this have removed evidence for Roman period exploitation? The area of the modern quarry has not been subject to archaeological investigation, and so this remains an open question. Stone quarrying and use in the region in the Roman context has been discussed by Buckland (1988).

- 2.8 There may well, therefore, have been phenomenological and practical factors behind site location. This is also so with regard to the riverside location of the villa. All four known villas in the north-east of England are located besides major east-flowing rivers, and in all cases on the right bank, on gravel and sand sub-soil pockets/islands. Practical advantages come from riverside location (transport, communication, water-supply), but this may also have been perceived as an attractive place to reside. The favouring of waterside locations is well documented for settlements in the Iron Age and Roman periods. This particular location has the added advantage of adjacent freshwater streams to the east and south, which drain into the Tees, which opposite the site is (today) tidal. In this case the villa complex is oriented to the east, the direction of the river flow.
- 2.9 The sandstone outcrop here may have been exploited as a source of building stone for other sites along the Tees. Conceivably stone may have been transported beyond the Tees to the Roman northern frontier zone, perhaps with shipment up to the Tyne. There is a possibility that the sandstone may have been conveyed to sites upstream, perhaps as far as Piercebridge. This Roman site shows major expansion from the mid 2<sup>nd</sup> century AD (Cool *et al.* forthcoming) with much of this development manifest in the use of building stone. The recent studies bringing Peter Scott's excavations at the site to publication have not been able to include a study of the stone as this did not form part of the extant archive (Cool *et al.* forthcoming). The publication of the Roman bridge (Fitzpatrick and Scott 1999) provides some broad-brush details as to the types of stone employed, though there is no specific section reporting the stone. Sandstone is mentioned as a component of the bridge but this is identified as "probably Carboniferous" (Fitzpatrick and Scott 1999, 119). The solid geology around Piercebridge is Carboniferous. By river Piercebridge lies 39 miles (c. 62km) upstream from Quarry Farm. This considerable distance along the shallow and meandering Tees might argue against the possibility of stone supply from Quarry Farm this far up the river. Petrological study and survey in the future could answer this question regarding stone extraction in the Roman era.
- 2.10 Extraction of the stone might explain the existence of the small isolated Roman *caldarium* structure, which is presumably a modest bath house, used as

such. The precise siting of the bath house/*caldarium* seems problematic with regard to the layout of the villa buildings, and the dating evidence associated with it does not provide a firm indication of its construction date. It is possible it precedes the other villa buildings (see below for discussion on alternative possibilities). Blanning's study of rural detached bath houses in Kent, including those which appear to be 'isolated' structures not associated with villas, as well as those associated with villas, has pointed up some marked trends relevant for consideration in this case (Blanning 2008). The majority "were associated with some form of industry or generation of wealth (though critically not necessarily through agriculture) and/or were on routes ideally suited to trade" with the majority located by rivers, creek heads or the sea (Blanning 2008, 10-11 and Table 3). She notes the traditional role for the bath houses will have been significant here: bathing in the Roman world was a social activity during which business could be transacted: "such bath houses might have provided focal points for meetings between traders and producers: venues where deals could be struck and where rest and recreation could be provided for long distance travelers" (2008, 11). The facility then might not be for 'dusty workers' but for business use where the transactors (*negotiatores* and proprietors) might not need or expect to be entertained elsewhere (in a villa or otherwise). Hence a possible scenario is that Roman period quarrying *predates* the establishment of a villa at Quarry Farm but is associated with an 'isolated' *caldarium* building, with the establishment of the villa then evolving out of such existing activities at the site. Quarrying may have been undertaken through, or at times during, the early, middle and late Roman periods.

- 2.11 Any nuanced consideration of site location must view the specific site in the context of the wider settlement system, economy and political dynamics of the time. In truth, while the last three decades have seen a considerable expansion of our knowledge of occupation in the Lower Tees valley in prehistoric and Roman times, through aerial reconnaissance and some excavation, the picture is very incomplete. There is as yet insufficient data to enable any strong statements to be made regarding the settlement system of the Lower Tees valley area in the Roman period, beyond the statement that it appears to have been populated reasonably intensively by farmsteads (Still *et al.* 1989; Haselgrove 1999; 2002). At present, viewed in its sub-regional context, the location of the villa seems somewhat anomalous, lying in a liminal position away from any known Roman road (the nearest, Cade's Road, crosses the Tees 6 miles (10km) to the west as the crow flies, or 13 miles (21 km) upstream when measured by the course of the river (Dobson 1970)) or comparable settlement. In terms of development on Roman lines the area may seem, by present convention, something of a 'backwater', so the development of a villa here is all the more intriguing.

### **Questions of chronology**

- 2.12 The nature of the recovered evidence circumscribes the potential for establishing any close chronology for the site and most of its elements. This is a consequence of the modest frequency of artefacts, including pottery, the absence of positive stratification (that is layers) enabling links between features in the site matrix, and the fact that the main villa building was not available for investigation. A later prehistoric (probably late Iron Age)

horizon of occupation is apparent. There are a small number of early Roman samian and coarse ware pottery sherds amongst the assemblage, but these are less numerous than at other Tees Valley sites and they do not clarify the nature of the site in the early Roman period (c. AD 50-150), pre- or post-conquest. The site pottery assemblage, however, changes from c. AD 150, with Roman pottery of the second half of the 2<sup>nd</sup> century being comparatively prominent; the few early Roman sherds present might even represent older items still in use after c. AD 150, and perhaps even arriving at the site after that date. So from this date the site is evidently changing its character: greater consumption of Roman pottery implies an expansion of activity at the site and a change of its function and identity. The deduction is accordingly made in this report that the villa dates from this time, although that is unproven. The *caldarium* and the aisled building are also phased in this report as being instituted at this time (Phase 3). Questions relating to the phasing of these site elements are considered here.

- 2.13 The date when what appears to be the main villa building itself was constructed is not known as the extant remains were not investigated by excavation, though they were located during the evaluation trenching in 2000 (Archaeological Services 2000a, Trench 5). Many villas in Britain have Iron Age antecedents and this is seen too in northern England, as, for instance, at Rudston (Stead 1980), Welton Wold (Mackey 1999) and Hayton (Millett and Halkon forthcoming) in East Yorkshire, Dalton Parlours (Wrathmell and Nicholson 1990) in West Yorkshire, and effectively Gargrave/Kirk Sink in North Yorkshire (Branigan 1980). The circular structure excavated in Area A, F165, can be interpreted as a building or roundhouse, with an entrance facing south-east (an orientation that it shares with the later stone circular structure (F237, of Phase 5b)) and measuring c. 5.8m in diameter. It may well have been a dwelling but is smaller than the examples from Melsonby (Fitts *et al.* 1999) and the main buildings at Thorpe Thewles, though it is comparable in size to some of the smaller circular structures at the latter site (Heslop 1987). Attributed to Phase 2, this structure lacks firm dating evidence and could date from any time within the first millennium BC to the 2<sup>nd</sup> century AD. Circular structures of this modest diameter, when associated with larger roundhouses, are often suggested to be ancillary buildings for specialist functions, such as productive activities like weaving and metalworking, places related to status passages and human reproduction, or having religious or ceremonial functions, as has been proposed in the cases of Thorpe Thewles and Pegswood Moor (Heslop 1987; Proctor in press); this may not always be so, and in some instances is speculative. At Pegswood Moor this possibility has been proposed during site Phase 3, where a circular structure (Structure 4) lies 40m away from the likely main domestic building/s forming part of an open settlement (Proctor in press). Since the example at Quarry Farm lies adjacent to an area not subject to close archaeological investigation it may be that other buildings of this later prehistoric phase (the main settlement focus?) lay unidentified nearby. Be this as it may, the Quarry Farm roundhouse seems not to be housed within an enclosure and so may have belonged to an open settlement of the type known in the later Iron Age in the region (Fitts *et al.* 1999, 46; Haselgrove 1999; 2002). It lies 90m southwest of the main Roman villa building.



- 2.14 Often Iron Age roundhouses are found to directly underlie the principal buildings of villa sites, as at Frocester, Gloucestershire (Price 2000), Whitton, Glamorgan (Jarrett and Wrathmell 1981), Piddington, Northamptonshire (Rollo 1994) and Rudston (Stead 1980). In some cases where villas have underlying Iron Age occupation this does not represent continuity of occupation, as there are cases where there appears to have been a gap in occupation for perhaps a generation or more. This may not be the case with the Iron Age to Roman era occupation at Quarry Farm. That there is a distinct pre-Roman Iron Age horizon is borne out by Evans' report on the pottery, and implied by the phase evidence for the flora and crops discussed by Huntley. It is well known that timber roundhouse construction and the local indigenous tradition of pottery making continue into the Roman era and so Iron Age tradition buildings and sherds can be contemporary with Roman pottery from sites in the region, or culturally Iron Age pottery may belong to a site of entirely Roman date. However, Evans notes a clear horizon of Iron Age tradition items from Phase 2 that he sees as pre-Flavian and probably late Iron Age. It is not clear whether there was Iron Age occupation below the villa at Old Durham but a recent evaluation of the pottery from the villa at Chapel House Farm, Dalton-on-Tees, by Ray McBride, suggests that this may have been so in this case, insofar as there is a range of firmly Iron Age tradition sherds from the site (unpublished data supplied by Graeme Stobbs). At Piercebridge, Iron Age domestic occupation preceding the villa is also reported (Harding 1984; Cool 2008).
- 2.15 As with many Roman period sites the clearest indication as to the chronology of site activity is the pottery. In his report, Evans identifies three chronological peaks to Roman pottery consumption / deposition: Antonine, mid 3<sup>rd</sup> century (followed by a plateau) and mid-late 4th century. Fourth century pottery is the most frequent material. (Interestingly, this patterning is consistent with the impressions arising from the 1979 work (cf. Heslop 1984, 34), underscoring the representativeness of the evidence from that intervention). The samian is strongly Antonine in date, though this category of pottery has a potentially long lifespan in use (Willis 2005), which may be the case here. The site samian catalogue includes a number of items that show wear and others that show adaptation, both likely indicators of vessel biography and longevity. Curation of vessels and a slow turnover of ceramics were probably a cultural habit in this region (cf. Willis 1999) and these practices need to be borne in mind when considering the site chronology, as they may add 'fuzziness' to dating.
- 2.16 It is notable that structural stones with likely wear were found in secondary contexts already within Phase 3. So there was already early / earlier building in stone by that time.
- 2.17 A striking characteristic of the site is its marked continuities. The spatial layout of the villa and its elements, including the trackway and enclosure complex to the west, and the overall plan and concept of the site, is adhered to through time. Even if the villa and the main aisled building were established a little later than the *caldarium* (cf. above) they seem to show at least two centuries of currency. There are spatial / functional continuities between

phases in the Roman period and subsequently. Even in the area to the northeast of the villa (Area D) where a stone building was demolished within the Roman period, a discrete activity focus is seen over time. The principles of the villa site, once instituted, endure as a determining idea, shaping settlement organisation and practice.

### **Buildings of the villa complex: their layout and use**

- 2.18 The villa complex at Quarry Farm presents a series of buildings and structures that are broadly consistent with those seen at other sites bracketed with this status in northern England. The *caldarium* apart, the layout and structures can be understood as forming a contemporary coherent whole (the *caldarium* arguably so), the individual constituents of which can, in turn, be interpreted as elements of a rural farming establishment of the mid-late Roman period.
- 2.19 The main villa building was not subject to excavation, being located within the preserved area. It was detected via geophysical survey and trial trenching in 2000, from which we know something of its precise location, plan, and condition (Archaeological Services 2000a). From the existing evidence, it is of winged type and oriented to the east, or at least was for part of its life, as it may have altered. It is a variation on a familiar basic form (cf. Smith, D.J. 1978) and comparatively small in size. There is no evidence that it possessed an enclosed courtyard to the front, nor that it was very elaborate. It was perhaps a two-storey structure, and, given the infrequency of tile fragments from the site, it almost certainly did not have a tiled roof, unless this was very carefully removed along with broken fragments. There is no evidence for mosaic or tessellated floors or tiled floors, while there is evidence of fine architectural stonework, plaster and cement (*opus signinum* was recovered from the *caldarium*). The *caldarium*, of which we know more via excavation and its comparatively good preservation, though modest in scale, was instituted with care; skilled craftsmanship and design are apparent in various elements (eg. the rippled flagstones). This may be a proxy for the quality of the architecture and realisation of the main villa building.
- 2.20 The eastward orientation of the main villa building is a trait (or rather choice) seen with other villas. Haselgrove's survey of villas in Picardy showed a preference for an easterly or south-easterly orientation which he attributed to cultural and ideological considerations (Haselgrove 1995). The preference is not so marked as it is with Iron Age roundhouses in Britain, which Oswald has shown to have a strong pattern of eastern or southern-eastern doorways, which he argued arose from cosmological beliefs (Oswald 1997). Burroughs undertook a survey of villa orientation for sites in northern England and found there to be an east-facing preference amongst the more northerly villas, although the sample size was inevitably small (Burroughs 2001).
- 2.21 The villa complex at Chapel House Farm, Dalton-on-Tees, has yielded pottery of similar nature to that at Quarry Farm suggesting, on present evidence, a similar chronology through the Roman period (Brown 1999). Building A at Chapel House Farm faces west and 'up river'; it is of winged corridor design, c. 30 x 17m, with a stone ground plan and a series of internal divisions (rooms), seemingly little altered. This building is hence a similar structure to

that of the apparent main villa building at Quarry Farm, though marginally larger. Building B at Chapel House Farm faces south, was of similar size to A, but was essentially an aisled building with less-marked internal divisions, which underwent adaptations and the insertion of apses on its northern side. Stone roof tiles were associated, as was painted plaster, two features not substantively apparent at Quarry Farm. Red Sandstone was in use at this site, as at Quarry Farm. Red Sandstone outcrops on the Tees bank a short distance upstream from Low Dinsdale, between Ingleby Barwick and Dalton-on-Tees, where it is also seen utilised in the construction of farm buildings of 18th- and 19th-century date.

- 2.22 The Quarry Farm phasing assumes that the aisled building and the *caldarium* are initiated at the time when the main villa building is instituted. In the case of the *caldarium* its position with regard to the other buildings warrants specific discussion (below). The aisled building F268 is located in alignment with the main villa building (in the preserved area), but set at 15m distance to the east from it, presumably so as to respect its integrity and status, and perhaps to allow passage between the two structures. Likewise the activity focus in Area D, on the northeast side of the main building, including structural remains and evidence of intense sustained use of this area in Phase 3 and beyond, is symmetrically placed. This focus, together with the main villa building and the aisled building form a U-shaped arrangement that is analogous to the placing of main villa buildings and their ancillary elements, as innumerable seen with villa complexes elsewhere in the northwest provinces. Hence the nature of the remains and their positioning indicate a coherent and symmetrical design in the laying-out of the villa buildings, of which status and functional zoning are components. The trackways, enclosures and compounds equally signal orderly land management to a design, which endures through time. The villa owner standing at their front door could see their wealth and presumably their potential for further profit laid out before them in their productive buildings which perhaps also housed their workers. Their status would also be apparent to anyone approaching their threshold as they moved past the ancillary buildings, expressive of wealth, social hierarchy and productive means, to the front door of the villa itself. This coherence and symbolic context strongly implies that these three elements are contemporary in design (though they may not be in terms of actual date). There is also continuity and longevity in this layout through sub-phases, with functional zoning evidently enduring through time. This is seen too with the *caldarium*, if this is contemporary.
- 2.23 The chronology of the *caldarium* structure has been considered above. Its location as an element of the villa complex does not seem harmonious with the symmetrical layout of the other buildings of the complex, if it is indeed contemporary. Aesthetic principles were important in Roman architecture and site layout, though in actuality these are often found to be compromised by the accommodation of existing structures, practicalities or religious / symbolic concerns. In the case in question here, the *caldarium*, if contemporary, seems in the wrong place: it does not appear to be a side of a courtyard; it is unusually close to the frontage of the villa building (when, seemingly, it need not be); it lies opposite a mid point on the long axis of the aisled building; it

interferes with the view from the villa; and perhaps more importantly inhibits the view of the villa facade on approach. If we consider its placement problematic several possibilities may be entertained. First that it is contemporary but its placement was not seen as problematic or unacceptable to the villa owner in terms of aesthetic ideology, or practice, or that the size of the ensuing courtyard was acceptable. Second, that the main villa building faced the other direction, that is to the west, during the currency of the *caldarium*; however, there is no evidence for this and there are several indicators that the orientation was to the east, something which also makes sense from the arrangement of the other site elements. Third, that it is earlier than the rest of complex, possibly associated with quarrying, and was either subsequently incorporated as an element of the villa complex or was demolished before the institution of the main villa building. The latter scenario is possible from the given dating evidence from the *caldarium*, though this may be a function more of the meagre assemblage of finds from the structure, and its stratigraphically isolated nature: layers associated with the structure were essentially construction and destruction deposits, rather than horizons likely to include use and rubbish detritus. The date and chronology of the *caldarium* therefore is perhaps best considered as ‘floating’. On the one hand the *caldarium* could be seen as contemporary with the aisled building in so far as neither building cuts any earlier deposits or features. Further, the alignment of the *caldarium* is a few degrees out from the cardinal alignment of the aisled building. Whilst it seems to mirror the alignment of the frontage of the main villa building the latter appears to have variation in the details of its alignment, which is, besides, not firmly established by archaeological exposure. A fourth possibility is that structures and deposits once associated with the *caldarium* which may have assisted our understanding have been lost; side-walling of the aisled building, for instance, had disappeared through taphonomy. The *caldarium* does not endure to the late Roman period. If it was no longer in existence in the 3<sup>rd</sup> century there is no difficulty, as it may thus not be contemporary with the main villa building.

- 2.24 Turning to the aisled building F268, this is a variant of a well-precedented building type of the mid to late Roman period in eastern England (Smith, J.T. 1963; Morris 1979; Millett 2006). The Quarry Farm building, though, is the most northerly example so far recorded. The date of its institution and initial use is not precisely known. It is ascribed to Phase 3a on the grounds that this phase sees the establishment of the villa. However, nothing as regards use of the building is attributed to it in terms of deposits / features in Phase 3. The first attributed record is in Phase 4. Hence this structure could perhaps post-date the *caldarium*. Aisled buildings of this type are large multiple purpose structures which typically see changing functions over time (Morris 1979, 55-65). Their utility in an agricultural context for storage of crops and equipment, cover for animals and as living and working quarters for estate workers is likely. In this case processing activities are attested.
- 2.25 The circular stone structure F237 of Phase 5b in Area C follows upon a sequence of earlier activities at this location, in particular a timber structure of Phase 5a. Outwardly similar structures of like scale are well known at other villa sites in northern and eastern England, as at Holme House, Piercebridge

(Harding 1984; Cool 2008), Old Durham (Richmond *et al.* 1944; Wright and Gillam 1951), and Winterton in North Lincolnshire (Stead 1976; Goodburn 1978). In each case the function of the structure must be evaluated on its own merits: they are likely to have evolved differently and to have had differing uses from site to site. They are often interpreted as mill houses or otherwise to do with grain processing. In this case the function of the building is enigmatic given its peculiar internal arrangements.

### **How may the site be understood?**

- 2.26 In considering the site and its evolution one has to return to some long-standing questions in Romano-British archaeology. Who, for instance, commissioned these stone buildings, employing, in this context, a culturally alien or at least novel medium (cf. Petts with Gerrard 2006, 149)? Branigan engaged such questions in his 1980 paper, a seminal piece that remains valuable three decades later (Branigan 1980). He suggested that villas in northern England were likely to have been initiated and owned by three groups. One was local indigenous “tribal aristocracy”, on the basis of apparent continuity of settlement through from Iron Age roundhouse to stone villa; less-elite locals may also have developed their homes into villas, later in time and away from centres of local government. Retired soldiers were also viewed by Branigan as likely developers and owners. Millett, however, emphasised that villas could be seen as an investment of wealth, *a decision to spend*, not necessarily a product of wealth arising from a local agricultural base (Millett 1990). In other words their institution may be seen as a cultural decision based on affiliation and background, aspirant affiliation, status and practicality. Such choices were not neutral decisions but had a political dimension. The manifestation of this villa complex was a dramatic landscape statement. Does it directly reflect “the impact of Roman hegemony on the province of Britannia” in a local milieu, raising questions over the implications for social relations and life circumstances (cf. Taylor 2001)? While these perspectives assist in developing a more nuanced approach to villa studies, it remains unclear who the owners of the Quarry Farm example may have been, though the synthetic discussion of the finds considers the evidence further.
- 2.27 Only in recent years has there been any trend to investigate the areas surrounding villa complexes, to establish something of the economy and organisation of such sites, where they may have been farms. This was a priority of this project. Winterton was one of the first excavations where this approach was taken forward (Goodburn 1978), though it remains to be published; there is a pressing need for data of this sort. The field, paddock, trackway and enclosure system around the Quarry Farm complex shed light on these aspects, in line with the design of the project, though unfortunately preservation and taphonomy leave some tantalising questions as to the agronomy of the site and its level of productivity. There are perhaps sufficient indicators to conclude that this was a successful agricultural enterprise, one that was able to maintain itself for decades, indeed centuries. A ready market existed for agricultural products in the form of the military garrison in the north, with the means of marketing produce via the Tees.

- 2.28 It is appropriate to recall that the discovery of the Quarry Farm villa complex was a surprise. The existence of the villa had not been evident from any aerial photos, nor did the cropmarks appear in a manner that might have lead to the existence of the villa complex being inferred. The villa building and its ancillary structures were not apparent from the initial trial excavations (Heslop 1984) nor the systematic surface collection across the field in which they lay (Archaeological Services 1997a; 2000a) when barely a sherd of Roman pottery was recovered, despite conditions and circumstances conducive to artefact recovery. That the archaeological signature of this major building and site complex was only determined via close interval geophysical survey is a salutary indicator to those working in the region. A fair deduction is that other stone-founded villa sites may exist in the region but lie undetected. Indeed, from the evidence of the Dalton-on-Tees villa complex and the Quarry Farm site, villa structures in the region may have been characterised by comparatively shallow wall foundations, and constructed without concreted or tile floors and roofed without the extensive employment of (distinctive) Roman ceramic tiles. With these characteristics they are likely to leave unprominent traces, with insubstantial building remains subject to erosion and removal, and be marked by an ephemeral building footprint. The comparative infrequency of items of material culture from the evaluation and excavation is emphatic and reliable even considering the fact that the villa building proper was not investigated. This ties in with regional patterning insofar as, invariably, rural sites in the north-east, of whatever type, yield only modest amounts of pottery and other material culture. This trend therefore seems to extend through the settlement hierarchy to include villas and the smaller centres such as the recently-discovered roadside settlement at Sedgefield (Carne 2007) and the settlement at Faverdale. The implication is that whilst not hitherto detected through survey (e.g. Inman 1988; Still *et al.* 1989) further villas in the Tees Lowlands seem likely to come to light in future work. It is not in the scope of this discussion to speculate on their actual frequency, although some predictive modelling could be undertaken within the scope of regional research agendas and strategies.
- 2.29 The limited extent of knowledge of the other villa sites in north-east England and northern Yorkshire means that the scope for regional comparisons is circumscribed. There are further aspects to such issues. The question, for instance, as to how ‘representative’ Quarry Farm may be of a Roman villa site in the region may seem ostensibly a valid one; yet in many respects recent villa studies have highlighted the heterogeneity of villas even in those landscapes where they are common and comparatively well-sampled.
- 2.30 A proper understanding of the site in its regional context will be forthcoming when more settlements and environments are explored. At present information is acknowledged as limited, especially with regard to Roman period rural settlement and the late-Roman to early medieval transition (cf. Petts with Gerrard 2006). More sites of the period are now being identified and explored and the publication of sites such as the present one will make a significant contribution to our understanding.

### **The nature of the Roman-period finds assemblage**

- 2.31 The aim of this part of the discussion is the construction of a rounded perspective on the nature, functions and identity of the site, and on how life may have been experienced there in the Roman era, as evidenced by the finds and associated data.
- 2.32 Material culture from several periods, notably the flints, Bronze Age pottery vessels, Roman artefacts and the early medieval pottery, point to the use of this location during particular eras, consistent with its environmental attractions. However, the majority of the finds from the site are of Roman date, and these provide an opportunity to examine the character of the site and the activities of its occupants through this period. The large majority of the finds were stratified or otherwise contexted, and this, together with the fact that many items can be ascribed to dates *within* the Roman period enables the phasing of the site and the establishment of its sequence of development, particularly through the 1<sup>st</sup> to 5<sup>th</sup> centuries. In addition the finds represent a vital resource for understanding the nature of the site, its functions and something of the cultural life and experience of its inhabitants (cf. Hunter 1998).
- 2.33 The evidence of the enclosures, circular wooden structure and later prehistoric pottery points clearly to pre-villa occupation, though the specific association of these elements and their actual chronology is not well defined. This picture has been consistent through the various investigations since 1979. The later prehistoric pottery is qualitatively similar to that seen at other regional sites occupied in the Iron Age and early Roman period. Some proportion of the sherds from Quarry Farm may date to the Roman period, as the indigenous regional tradition of manufacture endures in use and production into the Roman era. However, at Quarry Farm, stratification points to a horizon with purely Iron Age tradition pottery (Evans, below), indicating pre-Roman occupation at the site. Pre-Roman Iron Age occupation seems also testified by finds and stratification at the Dalton-on-Tees villa (Graeme Stobbs, pers. comm.). What is not clear in the case of Quarry Farm is what date this apparent Iron Age horizon belongs to, and whether there is unbroken development from later prehistoric settlement into the Roman era. Evans notes a prominence of granite temper in the 2003 material. Examination of both the 1979 material and the sherds from the evaluation in 2000 (identifications by S. Willis, March 1990; Willis 2000b) similarly showed igneous temper to have been popular. Indeed, dolerite tempering was more prominent amongst the 43 Iron Age tradition sherds from the 1979 works than, for instance, at the major late Iron Age centre further up the Tees at Stanwick, North Yorkshire (numbering 15 sherds, with 12 calcite tempered, 9 with quartz, 4 quartz and dolerite and 3, distinctively, virtually inclusion free (cf. Stanwick Fabric 106)). There is similarity between the Iron Age fabrics from the two sites, but no close correlation that could be used to argue for late Iron Age contemporaneity, though variation does not rule this possibility out. Amongst the 1979 material the only Roman pottery items that might be of 1<sup>st</sup> century AD date are the amphora sherds. This pottery apart, there is virtually no artefactual material from any of the interventions that can be ascribed a specifically later prehistoric date.

- 2.34 The Roman artefacts are diverse in origins, materials and likely functions. They broadly reflect the type categories that would be anticipated at a site of this general date and type.

**The low frequency of finds and the regional context**

- 2.35 A striking feature is the comparatively low overall quantity of finds, given the type of site and the scale of the archaeological works. Certainly the assemblage and its components are of regional importance, notwithstanding this aspect, but it does place restrictions on the characterisation of the site. Quantities of all finds classes are modest or low, given the volumes of soil excavated. For instance, only two items of worked bone occur, while the numbers of copper alloy items and querns are conspicuously circumscribed. The nature of the assemblage points to a low turnover of material culture. This pattern extends across the site, is broadly independent of context type, and endures through the stratification. It is likely that this pattern would be similarly encountered in the preserved area of the site, which includes the main villa building. In fact, this picture of low frequency of finds reflects a general pattern observed at rural and other sites without a military connection in the Roman era across the north-east of England (cf. Annis 1996; Willis 1999; Hingley 2004; Petts 2006). It is of particular interest for considerations of the region at this time that this pattern extends to the Quarry Farm site, as this is one of the few villas known in the region, and which has been in receipt of careful archaeological examination and reporting. A comparative infrequency of finds is suggested by the reports on the Old Durham villa (Richmond, Romans and Wright 1944; Wright and Gillam 1951) where opportunities for proper recording were limited and excavation was often of a salvage nature. A similar infrequency is apparent in the case of the villa site at Dalton-on-Tees (Brown 1999), and even, seemingly with the villa at Holme House, Piercebridge (Harding 1984). The extensive investigation at Quarry Farm verifies this pattern. It is worth noting too that this pattern is consistent with the evidence arising from the initial trial trenching at the site in 1979 (Heslop 1984, 29) and the fieldwalking and evaluation phases of the present project at this site (Archaeological Services 1997; 2000a).
- 2.36 Another notable aspect of the finds assemblage is a lack of groups of pottery of any size, or of stratified associations of finds types. This limits the scope of some levels of analysis, particularly integrated studies.
- 2.37 A low frequency of finds of all types, including pottery, is also apparent at sites through the Iron Age in the region, such as Stanwick and Thorpe Thewles. This phenomenon continues, markedly at rural farmstead enclosures, through the Roman period too (Fitts *et al.* 1999). This would seem to be a reflection of cultural choice and practice, as these sites are not aceramic and there is sufficient indication of trade in the form of querns and briquetage to show the existence of a sophisticated regional economy and connectivity (Willis 1999). Evidently, there is a strong continuity into the Roman era. The striking aspect of the Quarry Farm site, however, is the juxtaposition of a built environment strongly reflecting Roman styles with a low level of archaeologically-recoverable material culture, a pattern that seems firmly indigenous (cf. Hingley 2004). That there is a degree of cultural choice in



consumption being reflected here is further indicated by the potential access the site would have had to wider exchange systems, including those supplying the military, given its location by the Tees. These aspects warrant some further discussion here.

### **Taphonomy of the finds and site formation**

- 2.38 Though the majority of the Roman period items were recovered from stratified contexts, the familiar problem of residuality was especially marked, being readily indicated by the amount of Roman sherds in early medieval layers. This is in part a function of the longevity of the occupation and activity at the site, and of particular foci where there was ongoing ground disturbance in antiquity (or where earlier items ended up being finally deposited). Neither ditches nor pits yielded much in the way of material culture. This might reflect depositional regimes, periodic cleaning-out of ditches, and so forth, but is more likely simply to be a reflection of low overall levels of material culture at this site. Martin (2007) has shown that at other sites those features (especially ditches) that are comparatively free of material culture in their lower and middle fills often become receptacles of much more pottery in their top fills as sites pass out of use. Yet this was not the case here.
- 2.39 Organic materials have not survived (bar carbonised environmental elements) as is normal given the temperate climate. This is exacerbated here by soil conditions that have worked against the survival of bone and so the assemblage may have been denuded of some worked bone, antler and horn items.
- 2.40 The infrequency of finds at this site may be thought to relate to rubbish management regimes, wherein waste items and materials were removed from the principal locus of living and working. The collection of domestic and daily detritus and its removal to middens is possible. However, the extensive nature of these excavations has demonstrated that no significant amounts of material culture were being deposited on the periphery of the occupation area. No middens were identified either by the main domestic focus, or at a distance from it. Extensive fieldwalking in the vicinity of the site in 1997 (Archaeological Services 1997) showed that Roman pottery and other artefacts were absent from the adjacent landscape (presumably fields at the time of the villa). This is significant as it suggests that a medieval-style manuring scheme was not being practiced in the Roman era (Archaeological Services 2000a). A similar absence and conclusion was noted by Brown in reporting on the fieldwalking evidence from the area of the Dalton-on-Tees villa complex (Brown 1999). Roman material culture spread on agricultural land is, though, something seen elsewhere, as at Bossington in Hampshire (J G Evans 2005).
- 2.41 Notably, whilst recovered metal items were largely small fragments, the pottery is not especially broken up. Both the coarse pottery and samian show comparatively high to normal average sherd weights. Pottery fragmentation was not advanced and sherds generally entered deposits in which they were not, despite the residual dimension, overly disturbed; this waste was not lying around to be trampled or reworked.

- 2.42 Given a general pattern of a low frequency of finds, it is possible to consider further what it represents in the case of the Quarry Farm site. If one takes the incidence of finds at face value, it might be thought that life at the villa complex was characterised by a low level of material culture and low turnover in material items, perhaps reflecting some restricted access to consumables. On the other hand, it might be a function of other factors; the site is close to the military supply network and the Piercebridge fort, and its owners had wealth enough to invest in substantial buildings. In addition, some luxury and exotic goods are present in the assemblage.
- 2.43 The markedly low levels of metal finds, including iron nails and iron fragments, may be a function of an embedded practice of resource recycling that follows a regional tradition. The ratio of lead finds to items in other metals is relatively high, but even here the absolute quantity is meagre and most finds are scraps and droplets. Hunter notes the likelihood of systematic metal re-cycling; the recovered iron includes a high incidence of pieces that were broken, damaged or fragmentary, and beyond practicable re-use. Recycling of glass is probable too, via the transformation of scrap glass into beads and so forth, since there is probable glass-working slag and heated glass from the site (cf. Price 1984).
- 2.44 Hunter notes the paucity of nails as highly unusual. Systematic metal-detecting during the project means that this lack is not an artefact of the excavation process. The absence of nails from the assemblage might point to an extraordinary level of iron reclamation, or (more likely) a lack of employment of nails in building construction. Architecture was, to a considerable degree, manifest in stone, and carpentry does not necessitate the use of nails. Recycling may result from difficulties of access to resources and material goods, or it may be a cultural habit. Finally, both Willis and Evans note that there is no marked evidence for repair of pottery vessels, samian or otherwise, that might be expected if replacement was difficult. On the whole, a regime of low acquisition and turnover of artefacts, with selective recycling of materials, is apparent, and these seem to be the results of cultural choice and habit rather than necessity.

### **Villa economy**

- 2.45 As is now well appreciated, villas are a category of sites that show considerable variation in size, wealth and economy. Each must be understood in terms of its own record. That record, including evidence for economic activities and function, may be partial. The size of villa estates is almost invariably unknown, as is the case here, while the debate about whether villas evolve out of existing local wealth or from wealth generated from the land, on the one hand, or if, on the other, they are an investment of riches generated by other means in wider spheres, is ongoing (cf. Millett 1990). Such reflections raise the question of ownership of the villa (cf. Branigan 1980). In the case of Quarry Farm it is apparent that the site is located in an area of comparatively fertile land with a moderate climate, certainly within the context of north-east England. The core of the site is intentionally placed on a sand and gravel island in the boulder clay. The agricultural land classification dating from the period before 1974 puts this land in Grade 3, 'Good'. It is perhaps worth

noting that of the other known villa sites in the region, Piercebridge is surrounded by better-quality Grade 2 land, and there is Grade 2 land close to Old Durham and Dalton-on-Tees.

- 2.46 The finds assemblage and other data provide some pointers to the economy of the site. Agricultural functions of the villa are indicated by its associated enclosures and field system, by the agricultural tools found and, probably, by the querns, millstones, lead weights and two styli. Milling, weighing and record keeping were doubtless routine aspects of the working life of this site. A mixed agricultural economy is evident from the faunal and environmental evidence. Despite taphonomic factors affecting the bone assemblage, the recovered cattle bones indicate slaughter and consumption on site, with beef coming from animals that were into and beyond their third year, but not aged. Overall the faunal remains indicate a site capable of being largely self-sufficient in production and consumption of cattle, sheep and pig.
- 2.47 The trackways and enclosures to the north and west of the villa complex are evidently an important and enduring element of the character of the site and consideration of their likely functions is important in weighing the identity and economy of the site. Refashioned periodically these likely paddocks and small enclosures may have had various functions, including, most probably, sheep rearing; however, given the location of the site on land suitable for grazing with ample fresh water, the raising of horses is a possible explanation of the site's economy. The demand for horses by the Roman army nearby will have been considerable and the Tees Lowlands are one of the few areas in the region horse-rearing on a large scale might be possible. Gidney in her report on the extant faunal remains points to the possibility of horse meat consumption at the site, and this could indicate the deliberate slaughter of animals past useful work but still young enough to be used as a source of meat.
- 2.48 The nature of the carbonised grain assemblage does not enable Huntley to conclude whether the complex was a producer or consumer site, though grain was being dried and milled on site. The pre-villa phases 1 and 2 show emmer and naked barley present, but these drop out in the Roman phases; Huntley's report notes that in the Roman era there was probably local spelt growing. Unusually for the region, barley was uncommon, which perhaps indicates a choice in crop selection (if this was a producer site) related to marketing. There is no evidence that production for a military or other market was in existence, though this cannot be ruled out. The archaeologically-recovered grain was of good quality. The modest quern assemblage demonstrates processing on site. Qualitatively, the quern assemblage is not impressive. The presence of a millstone demonstrates a shift to faster mechanical processing (see no. 12 in Heslop's catalogue below), but evidence for the scale of processing is limited. The circular stone structure south of the main villa building has been described as a possible threshing building, perhaps with a mule- or donkey-powered mill; similar structures at other mid- to late-Roman period sites have been interpreted thus (Neal 1996). However, in this case the archaeology of the building is complicated and its role remains uncertain.

- 2.49 The small number of coins from the site is noteworthy. Villas and rural sites generally might not be expected to yield many Roman coins, as coins may not have been ‘used’ in any routine manner, such as in transactions, at such sites. This is a plausible suggestion but should not be assumed to be so, as villas and other rural sites may have acted as minor marketing foci, especially if towns were some distance away (or absent from the settlement system, as in this region). Such sites may also have been established locations for particular types of marketing and exchange, as for instance with types of agricultural produce and utilitarian pottery (which seems conspicuously absent from urban pottery shops where these are known (Jeremy Evans, pers. comm.)). Indeed, such a role may have existed at these locations prior to their development as villas. Some villas in the south of Britain have produced coin lists that suggest a ratio of two archaeologically-recovered coins per year of villa occupation, at minimum (cf. Lullingstone; Meates 1987). Moreover, there is recent evidence for small-scale markets at rural sites (Timby *et al.* 2007), and many Romano-British farmsteads in south and midland England yield as many or more Roman coins than the 18 from Quarry Farm (Willis forthcoming). Trading practices are not indicated at this site, and this seems to reflect the particularly marked rarity of Roman coins on rural sites in the region (cf. Willis 1999). This is a matter worthy of further investigation in studies of the economy of the region.
- 2.50 There are a few indications of small-scale processing and crafts. These would seem to be of a nature typical of a ‘workaday’ rural community. Hunter catalogues the evidence for smithing, likely to be associated with repairs, refashioning and blacksmithing; whetstones and grinder / rubber stones recovered relate to the creation and management of tool finishes and edges. The tool hoard ensemble likewise consists of a functional (though incomplete) group of items, as one would expect for carpentry tasks at a settlement and farming complex. Gidney notes the possibility of craft-working of red deer antler. Spindle whorls indicate textile production.

#### **Wealth, consumption and contacts**

- 2.51 Amongst the pottery finds there occurs a range of samian vessels, while the proportions of amphorae and fine ware are comparatively high. Together with the glass finds, these suggest that occupants of the site had both access to imported ‘luxury’ goods and an interest in such commodities. A certain qualification and calibration is required, though. It is likely that ratios of amphorae and samian against coarse pottery appear high not because of the wealth and status of the site but as a function of two other factors. Firstly, samian and amphorae were in the vanguard of imports to indigenous sites in eastern England and tend to be well represented in assemblages from such sites compared to coarse wares (Willis 1997); this reflects an interest in samian amongst local populations. Secondly, a traditional (Iron Age) low level of ceramic consumption in the region means that utilitarian vessels were simply not used with the frequency seen at sites to the south in England. Turnover and absolute numbers of coarse ware jars and bowls at sites in the region is thus likely to be lower than elsewhere. Not too much should be made of this, however; attention to the samian report shows that the material is not exceptional when compared with other villas and indeed more modest rural

sites. The inhabitants of the site had access to samian, could afford decorated bowls (at least occasionally) and had an interest in acquiring samian. This is simply typical of rural communities of the middle Roman era (cf. Willis below; 2005). It is significant that there is an absence of quality non-samian fine wares from distance, such as beakers from Cologne and the Rhineland, Central Gaul and Colchester (cf. Evans above). This may be an indicator of site wealth.

- 2.52 Amphorae have been shown to be an index of status and wealth when present amongst rural assemblages (Booth 1990). The quantity of sherds of amphorae from Quarry Farm is modest and mainly comprises of Dressel 20, the type used to convey olive oil from southern Spain, and the most frequently encountered type in Britain. A sherd is also present amongst the pottery recovered in 1979, though it was not recognised as such in the 1984 report (identification by S. Willis, March 1990). It may be that these are a direct indicator of olive oil consumption at the site, potentially for culinary purposes, lighting, fuel, etc. Dressel 20 vessels were a useful resource in themselves, given their capacity for storing and transporting goods, liquid or dry. They were frequently reused, so these vessels at Quarry Farm may have arrived with any manner of contents, not necessarily olive oil. The proximity of the Tees and the route to Piercebridge and the military zone means that it is not surprising to see Dressel 20 at this site, given the likely number arriving in the region. More exceptional is the Dressel 1 (or more likely 2-4), a probable wine amphora, represented by a shoulder sherd in 1979 (Heslop 1984, Fig. 7 Nos 6 & 6a; Williams 1984). Such types occur infrequently at non-military sites in northern England. Taken at face value the finds suggest that some of the site's occupants in the early Roman period enjoyed some far-travelled wine. Two other probable amphora sherds (precise types not identifiable) were also found amongst the 1979 assemblage in March 1990; these came from context 50, the main fill of Ditch A.
- 2.53 Evans concludes that, overall, the pottery assemblage indicates a site of basic rural status. Likewise, despite its low absolute quantity and north-eastern cultural patterning and practice, the composition of the samian assemblage reflects trends seen at other rural sites, both villas and non-villas, in the province. The presence of Roman glass vessels is an indicator of some disposable wealth, but, the polychrome bowl apart, this is not at all exceptional for a rural site. Yet there is a touch of wealth amongst the finds assemblage, in respect of a few items, such as the silver ring (with its gem), the amphorae and the glassware. Part of a padlock and two padlock keys recovered (sf.65, sf.113a, sf.128) imply routine security measures, though such finds are not exceptional on Roman period sites.
- 2.54 A ceramic type that is absent from the finds assemblage is transport briquetage. This is noteworthy, in a region where this material is now known to have been widespread in the late Iron Age and early Roman period (cf. Willis 1995; 1999), occurring for instance at Thorpe Thewles, Melsonby and Stanwick. This absence seems likely to be a function of chronology, as transport briquetage seems not to be associated with horizons after c. AD 120

in the region, whilst the main *floruit* of occupation at Quarry Farm post-dates c. AD 150.

- 2.55 As with the pottery assemblage, the corpus of querns and millstones indicates the use of comparatively local sources. Heslop notes the under-representation of German lava querns, given the date and scale of the site, while local stone employed for the rotary querns has poor lithology for this purpose. Despite this, such stones are found at other sites in the Lower Tees Valley (cf. Heslop 1996). Querns of better quality stone, such as millstone grit, were not present. Whether this is an index of a lack of wealth, or an expression of a tradition of local practicality, is a matter of speculation.

### **The villa, social identity, and expression**

- 2.56 There are no established indices for characterising a ‘villa identity’ from a site’s finds assemblage. Various finds help to characterise the site but there is a difficulty in the lack of regional comparisons. Sites such as the Greta Bridge *vicus*, Catcote, Sedgfield and Faverdale are non-military (albeit the first site relates to a fort) and have seen excavation, study and publication (cf. Casey 1998; Long 1988; Vynner and Daniels 1989), yet none is comparable to Quarry Farm. The villas at Old Durham and Dalton may be the most suitable for comparison, but these sites are not well understood. Jeremy Evans sees the composition of the pottery assemblage as reflecting a little of everything in circulation in the region, but not much of any of it.
- 2.57 Speculation on the nature of the villa’s owners is just that. While they and their household seem to have been modest consumers of material culture, there are some limited expressions of quality and luxury, the buildings aside: the rippled sandstone flags, the glass, perhaps the crossbow brooch, the samian and amphorae, and so forth. The miniature altar, more typically associated with military personnel and merchants in the northern frontier zone, implies observation of a classical rite which in turn points to a person or household exposed at some time to Roman forms of worship. Could this altar relate to an auxiliary soldier returning to his home community, a parallel maybe for the diploma from the Hoogeloon villa complex, Kempen, in the Netherlands (Roymans 1996)?
- 2.58 There is remarkably little amongst the finds in terms of ornaments and decoration, especially for a site of the Roman era. This is very much at variance with normal site patterns, where finds to do with personal care and presentation are often the most common small finds (Cooper 2007). Nor is there much that is indicative of recreation. Hunting on a small, occasional, scale was possibly undertaken. Brewing may have taken place at the site, with the corn-drying ovens having a possible role in this process. Overall, though, the remains from this site reveal little in terms of personal identity and expression, and of recreational activities, either individual or social. On the other hand, hobnails occur, and a group of fifteen nails from a shoe was recovered from ditch F25 in 1979 (Heslop 1984, 33). These represent Roman styles of footwear. There is little evidence that points to a military connection, especially when one considers that the well-worn Type 6 crossbow brooch (a form often associated with the Roman military) might have little or nothing to

do with the Roman *floruit* at the site. Indeed, the occurrence of this brooch serves to highlight the essential absence of military trappings at the site.

- 2.59 The nature of the finds assemblage shows that the regional pattern of sparse material culture seen at non-military sites extends to Quarry Farm, the occasional exotic or distinctly Roman item notwithstanding. This regional characteristic has its roots in later prehistory and is at variance with the picture seen at villa sites in southern and central England. This suggests that the occupants of the Quarry Farm site followed local cultural tradition and that they may well have had indigenous origins themselves.

### **Social practice**

- 2.60 The finds provide some testimony as to the activities of the site inhabitants, their habits, practices, choices and quality of life. However, for many likely areas of human expression, experience and practice there is little record amongst these finds. Little can be discerned in terms of gender; the assemblage is silent in terms of human age, health care and well-being. The bath / *caldarium* will have provided a recreational environment, associated with cleanliness and wellness, with, perhaps, some ritualised and religious dimensions of behaviour.
- 2.61 It is unclear as yet how representative Quarry Farm is of developed rural sites in the middle and lower Tees Valley. In several ways how people were living at the site reflects some established Roman norms, most dramatically in terms of architectural expression, but as Hunter points out, it is apparent that people at the site had distinct ways of living, as manifest in terms of the use of material culture. Modest consumption and turnover of material culture, concerted recycling, limited finds from excavated deposits, carpentry apparently with few nails, and so forth, are not phenomena usually seen at Roman-period sites, especially villas.
- 2.62 Religious practice and spiritual belief is little evidenced amongst the finds assemblage. There is an unfinished stone altar (sf.207), and some likely cases of ritual activity. The tool hoard and the crossbow brooch in the pit with the dog burial are prominent, albeit exceptional, candidates for evidence of structured actions, though one at least is post-Roman. Otherwise, cases of 'placed' or structured deposits or potential ritual depositions are few. There is a likely structured deposition behind some faunal remains in Phase 5. Hunter and McLaren raise the possibility that a Neolithic polished axe found in a Phase 3 (Roman) deposit could have been regarded then as a supernatural item.
- 2.63 Scrutiny of the finds distribution maps, which plot the incidence of various finds classes, shows no strong trends. Searches of the distribution of the finds that endeavour to locate functional zoning are complicated by various factors: the comparatively high level of residuality at this site, the modest size of the finds assemblage, and the broad lack of chronological refinement and linkages in the site context matrix. Moreover, contexts associated with specific areas tend to belong to one or just a few phases, rather than reflect the broad chronology of the site.

## **Part B: the results of the excavation**

### **3. Project background**

#### **Location (Figure 1)**

- 3.1 The Quarry Farm site is approximately 350m south of the River Tees, to the west and north of Ingleby Barwick. It is in the parish of Ingleby Barwick, in the borough of Stockton-on-Tees, at grid reference NZ 437 151. The area excavated covered approximately 3.1 hectares.

#### **Methods statement**

- 3.2 The works have been undertaken in accordance with a Project Design provided by Archaeological Services (PC03.51).

#### **Dates**

- 3.3 Fieldwork was undertaken between 18<sup>th</sup> August 2003 and 30<sup>th</sup> January 2004. Post-excavation works took place between 2004 and November 2008.

#### **Project personnel**

- 3.4 Project Manager: Peter Carne  
Project Supervisor: Daniel Still  
Assistant Supervisor: David Graham  
Academic Advisor: Dr Steven Willis (University of Kent)  
Scientific Advisor: Jacqui Huntley (English Heritage)  
Illustrations Manager: Linda Bosveld  
Artefacts Manager: Jennifer Jones  
Roman and Anglian pottery, metalwork, quern stones and small finds illustrations: Alan Braby  
Prehistoric pottery, millstone, samian & glass illustrations: Janine Wilson  
Site illustrations: David Graham, Edward Davies, Jamie Armstrong  
IT management: David Graham  
Macrofossils / charcoal id.: Dr Charlotte O'Brien  
Charred plant remains analysis: Jacqui Huntley  
Pollen analysis: Dr Helen Ranner  
Clay tobacco pipes: Daniel Still  
Conservation: Jennifer Jones  
Coins: Richard Brickstock  
Faunal analysis: Louisa Gidney  
Flints: Dr Rebecca Scott  
Geological identification: Ken Sedman (Middlesbrough Council)  
Glass: Prof. Jennifer Price  
Human bones: Dr Betina Jakob  
Early prehistoric pottery: Dr Robert Young  
Roman and Anglian pottery: Dr Jeremy Evans & Philip Mills, with Diane Briscoe & Alan Vince  
Samian ware: Dr Steven Willis (University of Kent)  
Querns/millstone: David Heslop (Yorkshire Quern Project)



All other finds:	Dr Fraser Hunter, Dawn McLaren (National Museum of Scotland), with Stuart Campbell, Trevor Cowie, Dr Andrea Hamilton, Jennifer Jones, Alan Saville & Lore Troalen
Radiocarbon dating	W Derek Hamilton, Peter Marshall, Jennifer Jones, Christopher Bronk Ramsey, Johannes van der Plicht
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**Archive/OASIS**

- 3.5 The site code is **QF03**, for **Quarry Farm 2003**. The archive will be transferred to Stockton Borough Council Museums Service on completion of the works. Archaeological Services is registered with the **Online Access to the Index of archaeological investigationS** project (OASIS). The OASIS ID number for this project is **archaeol3-6731**.

**Acknowledgements**

- 3.6 Archaeological Services is grateful for the assistance of personnel of Tees Archaeology and Scott Wilson, and members of Cleveland Discoverers, in facilitating the excavation and this report.

**4. Landuse, topography and geology**

**Landuse**

- 4.1 At the time of the excavation the development area comprised two fields of former arable land.

### **Topography**

- 4.2 The site is situated in an elevated position, on a gravel terrace directly to the south of the River Tees. The land slopes gently away to the south. The mean elevation of the site is approximately 20m AOD. A portion of land at the centre of the area was not excavated (the preserved area). This part of the site includes a winged corridor building and part of the associated enclosure system, identified from cropmarks and geophysical survey (Archaeological Services 2000a).

### **Geology**

- 4.3 The underlying solid geology of the site comprises horizontally-bedded Triassic sandstone of the Sherwood Sandstone Group. A vertical igneous intrusion known as the Cleveland Dyke also underlies the site (see paragraphs 8.232 – 8.236).
- 4.4 Glacial drift deposits of sands and gravels overly the majority of the site. Where the ground slopes away from the terrace, in the southern part of the site, this changes to boulder clay.
- 4.5 The geology and drift deposits are significant in relation to the presence of a settlement here. The sands and gravels, which underlie the majority of the site, are well-drained and ideal for occupation and agriculture. Quarrying has also taken part in the past to the immediate north of the site. However, the soil conditions were not conducive to the survival of organic remains, with the result that the human remains and the animal bones were poorly preserved.

## **5. Historical and archaeological background**

### **Mesolithic - Neolithic periods (c. 8000 – 2000 BC)**

- 5.1 A large assemblage of worked flints dating from this period has been recovered from both Quarry Farm and the vicinity of Ingleby Barwick during both fieldwalking and excavation works (Archaeological Services 1997a; Archaeological Services 2000a). No other evidence for occupation sites has been identified.

### **Bronze Age (c. 2000 BC – 750 BC)**

- 5.2 There is a growing body of evidence for settlement at Ingleby Barwick during the Bronze Age. This includes a settlement at Site P, Village 3 (Archaeological Services 1994a; 1994b), settlement and cremations at Little Maltby Farm (Archaeological Services 1997b), a cremation at Low Lane, Ingleby Barwick (Archaeological Services 2004) and inhumations adorned with rich grave goods at Windmill Fields, Ingleby Barwick (Annis in prep.). Prior to the excavations reported here, no finds of Bronze Age date were known from the Quarry Farm site.

### **Iron Age and Romano-British period (c. 750 BC to 5<sup>th</sup> century AD)**

- 5.3 Previous archaeological investigations on the site had indicated the possibility of an Iron Age settlement at Quarry Farm (Heslop 1984). Recent excavations at Low Lane, Ingleby Barwick identified an Iron Age roundhouse

(Archaeological Services 2004). The main occupation at Quarry Farm dates from the Romano-British period, when a villa and associated enclosure system was established. Three other villa sites are known from the region; two are further up-river, next to the Tees at Dalton-on-Tees (Brown 1999) and Piercebridge (Harding 1984). The third site lay next to the River Wear at Old Durham (Richmond, Romans and Wright 1944; Wright and Gillam 1951; 1953). More recently, civilian sites have been identified at Sedgefield, in Co. Durham (Carne and Mason 2006; Carne 2007), and at Faverdale and Rockcliffe Park Hall, both near Darlington (Glover *et al.* 2007; Jenkins, pers. comm.).

### **The medieval, post-medieval and modern periods (5<sup>th</sup> century to present)**

- 5.4 Evidence for Anglo-Saxon activity at Ingleby Barwick includes both cremation and inhumation burials uncovered at Low Lane (Archaeological Services 2004; Archaeological Services in prep.). Prior to the excavations reported here no Anglo-Saxon finds had been made at Quarry Farm.
- 5.5 The medieval landscape consisted of farming communities, founded in approximately the same locations as Quarry Farm and the neighbouring Barwick Farm. A series of earthworks and enclosures at Barwick Farm, relating to medieval settlement in the area, are scheduled (SAM 28569). At Quarry Farm, a scatter of medieval pottery, ridge and furrow earthworks (both extant and levelled), elements of a hollow way and field boundaries were recorded in advance of development (Archaeological Services 2000a).
- 5.6 Directly north of Quarry Farm, across the River Tees at Preston Farm, is the site of a deserted medieval village. Fieldwalking and a geophysical survey have been undertaken on the site (Biggins and Robinson 2000). The assemblage produced by the fieldwalking is dominated by medieval pottery sherds but also includes prehistoric flints and Roman pottery. The geophysical plot indicates ditched enclosures and possible structures. These are interpreted as medieval tofts and crofts with field boundaries. However, the enclosure system is very similar to that at Quarry Farm. These sites may have been connected by a ford or bridge over the river, although no evidence for this has been found. The site at Preston Farm was re-used in the medieval period.
- 5.7 Quarry Farm continued to be occupied throughout the post-medieval period. The original farmhouse was destroyed during World War II.

### **Previous archaeological works**

- 5.8 The site was initially recognised from aerial photographs in 1970 (Figure 2). This identified the enclosure system, but no buildings were visible. A Romano-British date was suggested for the site. Excavation of a 25m by 25m trench was undertaken by Cleveland County Archaeology Section between October and December 1979 (Heslop 1984). This was located across the two large north-south ditches, interpreted as part of a driveway, and also revealed a series of smaller ditches, as well as some pits and a paved surface (*ibid.*). A late Iron Age and Romano-British date was established for the site.

- 5.9 As part of a programme of archaeological works in the Ingleby Barwick area conducted on behalf of the potential developers at the time (Figures 3 and 4), fieldwalking took place over the site and its environs in 1997 (Archaeological Services 1997a). This was followed by a scheme of geophysical survey and evaluation trenching (Archaeological Services 2000a). These works were conducted in accordance with specifications produced by Tees Archaeology (1997, 1998a and 1998b). The fieldwalking recovered an assemblage of prehistoric flint, as well as two sherds of prehistoric pottery, three sherds of Roman pot (one of Crambeck ware) and some abraded medieval pot. There was a lack of 17<sup>th</sup> and 18<sup>th</sup> century pottery, suggesting that the area had been abandoned by this time.
- 5.10 The geophysical survey (Figures 3, 5) and evaluation established that the villa comprised at least three stone buildings and had an associated enclosure system of around four hectares. The evaluation works indicated substantial settlement evidence, and included different phases with a range of feature types. Stone and wooden structures, stone paving, linear cut features and pits were present. The evaluation also indicated that a range of find types was present, consistent with what might be expected from a rural settlement of this period in this region. A good state of preservation of finds, other than bone, was indicated.
- 5.11 The evaluation trenching indicated that many features are present within the enclosure and villa area that are not visible on the geophysical survey or as cropmarks.

#### **Existing archives**

- 5.12 The archives for the previous archaeological works are retained by Tees Archaeology. The published account of the excavation in the 1970s, and all the records for the subsequent schemes of works, have been consulted as part of this project.

## **6. The excavation**

### **Introduction**

- 6.1 Prior to the excavation a metal-detecting survey was undertaken by Cleveland Discoverers metal-detecting club across the whole site. All of the finds were modern in origin, and were discarded. Further surveys of the excavation area and spoil heaps were undertaken during the project, to maximum the retrieval of finds.

### **Methodology**

- 6.2 The excavations were structured to accommodate the requirements of the developer. The works progressed across the site in a phased programme, starting in the southwest part of the site and progressing east and then north. Archaeological work was completed in each area before moving onto the next part of the site, to enable construction work to follow on immediately.

- 6.3 Excavation of archaeological deposits was based on a 10% sample of linear features, increasing to 20% where finds or structural details were present, and a minimum of 20% of curvilinear or pit features. Surfaces were 100% excavated. This follows the standard Tees Archaeology specification for sites of this type within the former county of Cleveland. On occasions it was not possible to follow this strategy due to the presence of modern sheep burials, and it was also adapted in response to particular circumstances.
- 6.4 The excavation sampling strategy concentrated resources on defined parts of the site. This strategy was agreed during management meetings on site as the excavations progressed and was designed to address issues within the Research Design. The scheme included excavation of sections across the enclosure ditches in the southwest part of the site, the buildings within the villa complex, and the interior of several enclosures in the north of the site.
- 6.5 The topsoil was removed from the area of the excavation by mechanical excavator with a toothless ditching bucket. Below the topsoil, a subsoil overlying the natural was identified. Features were not identified cutting through this, and it was selectively removed by mechanical excavator to the natural sand and gravel. Features were then easily identified. Particular areas were targeted by the second machining, including sondages across ditches and enclosure interiors.

#### **Data structure**

- 6.6 The excavation data structure has been prepared to describe the site in terms of the phasing. The full data structure report is provided in Appendix 1; a summary report on the excavation results is presented below.

#### **Natural subsoil**

- 6.7 The undisturbed natural subsoil was composed of glacially-deposited sands and gravels. This was directly below the topsoil in the north part of the site, but as the land gently sloped away to the south, it was overlain by a mid brown sandy silt subsoil. In the south part of the site the underlying natural subsoil became dominated by sandy clay.

#### **Phase 1: Mesolithic to Bronze Age**

- 6.8 A large quantity of flints was recovered. These were all residual and mostly undiagnostic. The diagnostic pieces indicate activity on the site during the late Mesolithic and early Neolithic periods. A Neolithic polished stone axe was recovered from a later context, and was likely to have been a curated item. An unstratified bronze punch or chisel was also recovered. Two pits and a single gully contained Bronze Age pottery, and another pit contained cereal remains consistent with Bronze Age agricultural practices.
- 6.9 All of these features were located at disparate parts of the site, in the northeast, southwest and northwest, indicating a general spread of activity along the gravel terrace rather than a specific focus.

### **Phase 2: late Iron Age**

- 6.10 Several features pre-dated the Romano-British enclosures. A roundhouse was excavated in the southwestern corner of the site, cut by later gullies associated with the Romano-British enclosure system. Other features were also identified, including two pits containing exclusively Iron Age tradition pottery, a steep-sided ditch cut by the later north-south boundary ditches, and a small pit cut by the later *caldarium*.

### **Phase 3a: Hadrianic to Antonine**

- 6.11 The main phases of occupation of the site took place in the Romano-British period. A winged corridor house was established with several ancillary structures (Area C), including a large rectangular aisled building with internal postholes for roof supports, and a small hypocausted *caldarium* with an associated drainage gully. The original flooring of the *caldarium* was composed of sandstone blocks. Several features to the west of the aisled building (Area C), including a north-south wall, a short section of wall with culverts, an oven, a gully and a small rectangular feature are all assigned to the earliest phase of villa activity.
- 6.12 A number of features in the southeastern corner of the site (Area B) were also cut by later features, and have been assigned to the earlier Roman period. These include several pits, a short gully, and a north-south ditch which was cut by the later villa enclosure ditch.
- 6.13 Many of the features making up the enclosure system (Areas A, E, F, G and I) are likely to date to this period; a sample of these was excavated. A hollow was located in the northern part of Area A. A number of rectilinear enclosures to the west of the winged corridor house, both to the north and south of the preserved area, have been incorporated into this phase. An oven was identified in the north of the site (Area F), and several discrete pits and postholes were located within the enclosures. A large rectangular pit was also excavated in the northern part of the site (Area F).

### **Phase 3b: later Antonine**

- 6.14 The *caldarium* was remodelled, creating a new furnace which was almost completely truncated by later activity, and the floor was surfaced with compacted gravel topped with *opus signinum* (Area C). The butt-end of a north-south ditch in Area B is assigned to this phase. The main north-south boundary ditch was established (Area A, E and F): a second ditch was also identified close to this ditch and on the same alignment; this terminated before reaching the preserved area. No stratigraphic relationship was established between the two features. It is likely that the main north-south boundary ditch remained open throughout Phases 3 and 4. Ditches and gullies relating to the enclosure system in Areas A, E and G were also excavated at this time. A large irregular pit was identified in Area F. A series of postholes was identified in Area D. A group of these formed a north-south fence line using pairs of postholes. On the eastern side of this line a further group of postholes formed the southeastern corner of a structure, with an internal division. The remaining postholes in this area did not appear to form any structures. More

evidence of post-built structures was recorded in Area H. A semi-circular structure with a central post-setting that was re-established on several occasions was identified in the northwest corner of the area. A second group of postholes in the southern part of the site may also have formed a small sub-square structure. A number of other postholes were also present in this area. A rectangular pit was also present.

**Phase 3c: later 1<sup>st</sup> or 2<sup>nd</sup> century**

- 6.15 The furnace for the *caldarium* was remodelled again, creating a more crudely-built stone structure with an entrance to the north. A number of pits were excavated in Area D, but their function was not discernable. An elongated pit was present in Area F. Activity in Area H was reflected by the excavation of a series of gullies forming sub-enclosures. Other pits were also excavated in this area.

**Phase 3d: later 2<sup>nd</sup> or 3<sup>rd</sup> century**

- 6.16 A large square or rectangular stone structure was constructed in Area D. The remains of two heavily robbed-out foundation trenches set perpendicular to one another and forming southern and western walls were excavated, and the remains of a third northern wall were also recorded. Patches of stone paving suggested that the building was paved internally and on its north side. The south foundation trench had a butt-end to the east, implying a southern entrance to the structure. Further pitting was present in Area H, while new gullies were excavated in Areas A, E and F.

**Phase 4: 3<sup>rd</sup> century to c. AD 350**

- 6.17 An east-west ditch was recorded in Area A, subdividing the existing enclosure system. A sunken paved surface was identified in a large rectangular pit (Area B); part of the make-up of the paved surface included a large millstone. This pit was later deliberately backfilled. A curvilinear gully was dug to the west of the aisled building; this was cut by the later half-circular timber structure (Area C). An oven was constructed to the east of this gully, and a grave was placed just beyond the north end of the oven. Two pits were also present in the area. A substantial paved area was located on the north side of the aisled building, possibly functioning as a threshing floor. The *caldarium* had become disused by this time, and was reused as a corn-dryer. Much of the western side of the building was truncated and replaced with a T-shaped stone flue. Fragments of the original sandstone flooring were thrown into the hypocaust. Stone rubble west of the aisled building in Area C is presumed to relate to the stone structures identified in this area in Phase 3. Pits, gullies and an oven were excavated in Areas D-H.

**Phase 5a: later 4<sup>th</sup> century**

- 6.18 An east-west stone wall was constructed in Area B, with a metalled surface on its south side overlying the final backfill deposit of the sunken paved surface. No further structural remains relating to this wall were identified. The main north-south boundary ditch was re-established (Area A, E and F): two phases of ditch belong to Phase 5, but it was not possible to establish a stratigraphic relationship between the two. A semicircular timber structure was constructed

to the west of the aisled building (Area C). One of the postholes for this feature cut an earlier gully. The corn-dryer which had replaced the *caldarium* in Area C was abandoned; the T-shaped flue was backfilled with clay and rubble, suggesting the possibility that the building underwent a subsequent phase of activity of which no trace now survives. Several pits were excavated within the aisled building, and one of these contained late pottery. The interior of the building was then covered by a spread of material. A large enclosure was established within Area E. Two graves were cut to the east of Area H; they were within a rectangular enclosure which appears in Phase 3b. Two curvilinear gullies were present in the southern part of the area forming a circular structure, 4m in diameter. A large pit was located in the middle of this structure, and the eastern terminals of the gullies were packed with stone.

**Phase 5b: late 4<sup>th</sup> to early 5<sup>th</sup> century**

- 6.19 The villa enclosure ditch was established at this time (Areas B, C and E), delineating the area of the villa structures from the enclosures. Two ditches in Area C were contemporary with the enclosure ditch. The ditch cut through the uppermost fill of the sunken paved surface feature in Area B; this contained late 4<sup>th</sup> century pottery. It also truncated the southern side of the metallated surface in Area B. The enclosure ditch was not in use for long, as later Phase 5 activity took place on its uppermost fill. The half-circular timber structure in Area C was replaced with a large circular stone building. This had an entrance on the eastern side, as well as an internal sunken wall. A number of post-pits for the preceding timber structure were cut by the foundation trench of this wall. An oven was established within the aisled building, towards its northwestern corner (Area C). The remains of a hearth were deposited over the western end of the former corn-dryer in Area C. The building within Area D was demolished. A large stone was deposited in a pit to the south of the corn-dryer in Area E. The enclosure ditch in Area E was overlain by gullies and pits. A large paved surface was established in Area H.

**Phase 5c: late 4<sup>th</sup> to early 5<sup>th</sup> century**

- 6.20 The wall in Area B was demolished, and rubble spread across the silted-up enclosure ditch. A stone corn-dryer was constructed in the northeast corner of Area E, perhaps to replace the structure in Area C. This was established directly above the former villa enclosure ditch, cutting a gully that also overlay the top fill of the enclosure ditch. A number of pits were dug in the stone circular structure (Area C). Alterations were made to the aisled building, with the construction of an internal division wall. A pit was later excavated over this wall, presumably to rob the stonework. A small number of other pits were created within the structure. Further gullies and pits were excavated within Area E, and a four-sided sub-enclosure was also identified.

**Phase 5d: late 4<sup>th</sup> to early 5<sup>th</sup> century**

- 6.21 The circular stone building was also abandoned. The internal area was covered by demolition rubble, and this deposit also contained coins dating to AD353-8 and AD388-402. An oven was constructed in the centre of Area C, and two pits were dug immediately to the east. A cist burial was inserted into



the west end of the corn-dryer in Area E. An elongated pit and two postholes were also excavated to the south of this burial.

#### **Phase 6: 5<sup>th</sup> to 7<sup>th</sup> century**

- 6.22 As with the Bronze Age and late Iron Age/early Romano-British occupation, firm evidence of activity in the sub-Roman and Anglian periods is spread over a wide area. The number of features that have positively been identified as belonging to this period is small, despite the presence of a substantial amount of Anglian pottery. Several sub-oval ‘fire-pits’ were identified associated with working surfaces. These were filled with large amounts of charcoal and fire-cracked cobbles and were probably used for cooking. Radiocarbon results indicate that these are Anglian in date, with a likely date range starting in cal AD 350-520 (68% probability) and ending in cal AD 550-690 (68% probability). Two possible *Grubenhäuser* were identified in Areas A and G. Several intercutting pits were excavated in Area H, including a large deep feature. Evidence of occupation of the paved surfaces in Areas C and H was also found.

#### **Phase 7: Medieval to modern**

- 6.23 Plough furrows reflecting later medieval and post-medieval farming practices were present across the site. This is confirmed in the results of the geophysical survey, which indicates that the furrows were placed along a broadly northwest-southeast orientation. None of the furrows was excavated during the archaeological investigations.
- 6.24 A number of modern sheep burials were identified in the north and northeast parts of the site; these had truncated earlier features. Areas where sheep burials were identified were demarcated and unexcavated.

### **7. The human remains by Dr Betina Jakob**

#### **Introduction**

- 7.1 Potentially the osteological study of human skeletal remains can provide a vast amount of valuable information such as demographic profiles, including age and sex, metric and non-metric data, as well as pathological lesions which help us to understand past populations and their interaction with the environment. However, the ability to make inferences about past people’s lives greatly depends on the state of preservation of the remains. Regrettably, the Quarry Farm human remains were very poorly preserved, making it impossible to perform most standard osteological analyses outlined by the English Heritage Centre for Archaeology Guidelines (2004).

#### **Methodology**

- 7.2 The human skeletal remains consist of five discrete inhumation burials (Burials 1-5), none of them representing a complete skeleton. Due to the poor state of preservation, no attempt was made to provide a visual recording form of the bones present, as many skeletal elements were too fragmentary to be identified and/or sided. The following report concentrates on listing the bones and teeth preserved. Additionally, it was attempted to tentatively assign a sex

to two of the skeletal remains, using the guidelines compiled by Buikstra and Ubelaker (1994). The report below contains a descriptive summary of the bones present for each of the five burials.

### **Preservation**

- 7.3 All bones were extremely fragmentary with large areas of cortical and trabecular bone missing, equalling bone weathering stage 5, the worst on a five-point scale (Buikstra and Ubelaker 1994: Table 5). The majority of bone fragments were only several millimetres long, although one bone, a proximal femur from Burial 4, could be partially reconstructed and measured approximately 200mm in length.

### **The results**

- 7.4 **Burial 1** *Context F541, Phase 4.*  
Skull: Several skull fragments, mostly too small to be identified. All bones belong to the cranium, including the petrous part of the right temporal bone. Four larger fragments are from the parietal bones showing parts of the sagittal suture; one is from the occipital bone with a short segment of lambdoid suture.  
Long bones: One humerus head, too fragmentary to be sided, and two fragments of humerus diaphysis.  
A few long bone fragments, too fragmentary to be identified.  
Skeletal completeness: <5%  
Remains of an adult individual of undetermined sex.  
A sample from this inhumation, which was placed in a north-south aligned grave, with the head to the south, was submitted for radiocarbon dating. The burial was dated to cal AD 230-400 (95% confidence).
- 7.5 **Burial 2** *Context F587, Phase 5a.*  
This burial consists of around ten very small bone fragments, presumably human, and four tooth crowns from deciduous teeth, plus several tooth fragments, none of which are human.  
Skeletal completeness: <5%  
Potentially the remains of a sub-adult individual buried with animal remains.
- 7.6 **Burial 3** *Context F589, Phase 5a.*  
Skull: One tooth fragment (crown only) of an unsided third (?) maxillary molar with some attrition. One mandibular fragment (unsided) with two alveolar sockets for single-rooted teeth.  
Long bones: Two fragments of femoral diaphysis.  
Skeletal completeness: <5%  
Remains of an adult individual of undetermined sex
- 7.7 **Burial 4** *Context F1436, Phase 5d.*  
Skull: Fragment of left temporal bone consisting of squama and petrous part, fragment of right temporal bone and parietal, occipital fragment with part of lambdoid suture.  
Long bones: Proximal third of right femur with missing lesser trochanter, left humerus head fragment and proximal third of left humerus diaphysis.  
Skeletal completeness: 20-30%

Adult individual, probably female (based on small size of mastoid process and absence of suprameatal crest).

A sample from this inhumation, which was in a north-south aligned grave cutting a Roman corn-dryer (F814), was submitted for radiocarbon dating. The burial was dated to cal AD 230-390 (95% confidence), and provides a *terminus ante quem* for the use of the corn-dryer.

7.8 **Burial 5** *F1455, Phase 3b.*

Skull: Unidentified small skull fragments, crown of maxillary right canine showing some attrition.

Long bones: Unsided fragments of femur diaphysis, proximal third of right femur diaphysis with pronounced *linea aspera*.

Skeletal completeness: 10-20%

Adult individual, probably male (based on robust femur).

**Discussion**

- 7.9 The skeletal human remains from Quarry Farm consist of the poorly preserved remains of four adult individuals, of which two are of undetermined sex (Burials 1 and 3). One individual may have been female (Burial 4), but since this was based on only two morphological features of the skull, this conclusion has to be treated with caution. Burial 5 might have been that of a male individual, but this is only based on the robustness of one skeletal element and therefore might not reflect the true sex of the individual. Burial 2 was difficult to assess. Although originally thought to contain deciduous human teeth, further examination found that all the dental remains are non-human. The bone fragments from Burial 2 are too small to be identified as human or non-human on a macroscopic basis, and the presumption that they are human rests on the location of their discovery.

**8. The finds**

**Overview**

- 8.1 The small finds assemblage is dominated by iron objects, with lead, pewter, copper and silver forming the remaining metal-types. A number of stone, ceramic and bone objects were also recovered. A metalwork hoard was discovered, a collection of craft tools which is treated separately to ensure that the items are discussed in their context. The sherds of a polychrome Roman glass bowl are also significant. Also of interest are a Neolithic stone axe, a Bronze Age punch or chisel, a late Roman gilt bronze crossbow brooch and a late Roman bronze vessel handle. Very few nails were recovered from the site, suggesting different carpentry techniques were taking place on the site.

**Early prehistoric pottery** *by Dr Robert Young*

**Summary**

- 8.2 The fragments of at least seven vessels were submitted for analysis. Table 4.1 shows the contextual information for each vessel.
- 8.3 Vessels 1-6 all come from the fills of isolated pits on the site and have no other stratigraphic associations. Vessel 7 however, which came from a gully, was

found in association with seven flint flakes and a small round flint scraper. These were either considered undiagnostic or were dated to Mesolithic or early Neolithic periods. None were seen by the writer, but from the available information we must assume that the pits and the gully are the vestigial remains of earlier settlement and depositional activity on the site.

### ***Catalogue***

- 8.4 See Appendix 3.1 - 60

### ***Discussion***

- 8.5 The seven vessels discussed would seem to range in broad date from the Later Neolithic to Early Bronze Age periods. Vessels 1 and 3 are rare occurrences of Late Neolithic, Northern Peterborough type pottery, possibly of Rudston Ware sub type, but the available radiocarbon date of 2290-2020 cal BC obtained from residues on Vessel 1 would seem to place its use right at the end of the Late Neolithic, in the period of the Neolithic-Bronze Age Transition.
- 8.6 By the same token, Vessels 4 and 6 are very rare examples of AOC type Beaker in this region, and Vessel 5, with its All-Over Comb Decoration, is even rarer in the north-east.
- 8.7 The occurrence of grog pellets in the fabric of Vessels 4 and 6 is worthy of further comment. In her discussion of the two fragmentary pottery vessels arranged around the gold hoard from the Lockington (Leicestershire) barrow, Woodward has speculated about the motivation that lay behind the placing of two incomplete vessels, both of which may have been old at the time of their deposition, around the Lockington Hoard (Woodward 2000, 58). She suggests that the pots may have been viewed as valuable, possibly with family heirloom status. She argues that if this was the case, the vessels may have been divided and shared among different segments of a family or lineage, and that they may have been ground up for use as grog in newly-manufactured vessels. *‘Thus elements of the personal pots which possessed ancestral pedigrees might imbue identity and power to vessels made for use in a new generation’* (Woodward 2000, 58).
- 8.8 Indeed, recent research has highlighted the fact that in the Late Neolithic and Early Bronze Age periods, ceramic containers were *‘concerned more with personal identity than with community activities at the household, settlement or regional level’* (Woodward 1995; 2000, 58). Cleal has shown that it is in these very periods that the use of grog as an opening agent occurred most commonly (Cleal 1995, Fig. 16.2). The process of breaking fragments from ancestral pots for future use in grog preparation is well attested ethnographically (Sterner 1989).
- 8.9 It is interesting that the use of grog inclusions has only been observed in Vessels 4 and 6, both of which are rare AOC Beakers. It may well be that we have some slight evidence here to give more weight to Woodward’s conclusions about the grog tempered Lockington beakers: *‘Detailed study of the Lockington sherds has led to proposals that, in prehistory, the selection of temper in pottery was not determined solely on functional grounds.’*

*Alternatively, the temper played a strong cultural and symbolic role whereby fragments from existing artefacts with known histories and biographies were deliberately incorporated into new vessels. Thus the essence of important pots belonging to significant individuals or families could be preserved and passed down through the generations in a finite and often visible form. The fabric of a pot may have indeed assumed a far greater social and symbolic importance than either its form or its decoration' (Woodward 2000, 60). Woodward has gone on to develop this thesis in a 2002 paper entitled 'Inclusions, Impressions and Interpretation' (Woodward 2002, 100-118).*

### **Roman pottery by Dr Jerry Evans and Philip Mills**

#### **Summary**

- 8.10 Some 2670 sherds of pottery were submitted for analysis. Around 2153 sherds of pottery were recovered from stratified Roman and Anglian contexts (46.941Kg), including 31 sherds of samian. Some 41 sherds of samian were recovered in the total collection. Table 4.2 shows a breakdown of the major fabric classes from the stratified assemblage.
- 8.11 This assemblage is the only stratified assemblage excavated from Quarry Farm. There is currently very little knowledge about pottery from rural sites in the Tees Valley apart from around the Tees estuary and this assemblage will provide a very useful insight into this.
- 8.12 It also has an interesting tradition of handmade granitically tempered ware. This does not appear to run through the later 4<sup>th</sup> century, but, given the inclusions in much of the Anglian material a similar source would seem to have been exploited in that period. This is subject to petrological investigation, as it has the potential to be a source for much northern Anglian pottery once assigned to Charnwood in Leicestershire (cf. Scorton; Evans forthcoming a).

#### **Results**

##### *Chronology*

- 8.13 The site chronology can be examined in two ways, both as a total assemblage and as a series of phase groups.
- 8.14 In terms of the overall assemblage the most accurately dated material is the samian ware. Willis (below) notes, "*The time-span of the collection is c. AD 120-260. Two items that would normally be dated to before c. AD 150 occur, but these vessels apart, the material is firmly Antonine to mid 3<sup>rd</sup> century in conventional terms*".
- 8.15 The absence of earlier samian ware is interesting. It could suggest an absence of occupation earlier than the Antonine period, but samian ware is not at all common on basic level rural sites and there is not a great deal of earlier Roman pottery from the site.
- 8.16 In the Vale of York there is no South Gaulish samian amongst the five sherds from Mourie Farm, Low Worsall (Evans forthcoming c). Similarly there is none in the two sherds from West Moor farm Crathorne (Evans forthcoming

- d). However there is one in the six sherds from Newton Bewley (Evans forthcoming e) near the mouth of the Tees and similarly there are two amongst the 14 from Sike Spa, Crayke (Evans forthcoming b)
- 8.17 Thus if Quarry Farm received a constant samian supply in an assemblage of 40 sherds some South Gaulish material should be expected. If, however, most of the samian is associated with the construction of the winged corridor house and earlier activity is at a low level, the observed pattern might be explained.
- 8.18 Material that specifically dates to the Flavian-Trajanic period is very limited. There is a single Noyon mortarium (fabric M05; No 55) and a bead-rimmed flagon in O12 (F1.1 No 61) may also be of this date. The Phase 3a villa structure seems likely to date to the Antonine period, so given that Phase 2 is probably pre-Flavian, any activity in the Flavian-Hadrianic periods must be in the earliest part of this phase.
- 8.19 Table 4.3 offers an overall date distribution plot of dateable rimsherds from the site. It picks up from the Flavian period and suggests some activity from then on, but peaking in the Antonine period. However, with so little closely dateable material, pieces with very broad ranges are likely to mask trends, and the reliability of the method is a little questionable in the circumstances.
- 8.20 Activity appears to diminish in the early 3<sup>rd</sup> century, but this is as likely a problem with the method or the dating rather than a real trend, whilst it certainly builds up in the later 3<sup>rd</sup> and early 4<sup>th</sup> centuries, followed by a massive peak in the later 4<sup>th</sup> century.
- 8.21 The Anglian material, always much less common than the Roman, is then spread across a three-century date range, giving probably an even weaker impression of this activity than it ought.
- 8.22 Table 4.4 shows a date distribution plot confined to the material that is more closely dateable. This shows little activity prior to the Antonine period, when there is a marked peak, followed by a trough in the early 3<sup>rd</sup> century, a rise from the mid 3<sup>rd</sup> century until the beginning of the 4<sup>th</sup> followed by a plateau until the mid 4<sup>th</sup> century, when there is the strongest peak which continues until the end of the century. This is probably a better reflection of the date distribution of pottery deposition on the site than Table 4.3. It would tend to suggest three major periods of pottery deposition; in the Antonine period, in the later 3<sup>rd</sup> to mid 4<sup>th</sup> century and in the later 4<sup>th</sup>-5<sup>th</sup> centuries.

#### *Phase 1*

- 8.23 Discussed above (see paragraphs 8.2 to 8.9)

#### *Phase 2*

- 8.24 Some 24 sherds come from features of this phase; twenty-three of them are in P01, a handmade granitically tempered fabric which is perhaps pre-Roman, and one in fabric G01, East Yorkshire calcite gritted ware. This group would seem consistent with a pre-Flavian, but probably late Iron Age date.

*Phase 3a*

- 8.25 There are 72 sherds from this phase, but few are closely datable and some are intrusive. The small amount of closely datable contemporary material consists of three Nene Valley bodysherds (F01) from context 247, dated AD 160+, a groove rimmed chamfered greyware dish from context 337 (R11 D1.2; No 76) probably of Hadrianic-Antonine date and a Central Gaulish samian ware bodysherd (S22) of Hadrianic-Antonine date from Context 221.
- 8.26 The material itself would cover a Hadrianic-Antonine date range. The general lack of pre-Antonine samian ware would suggest the villa construction in this phase was likely to be Antonine rather than earlier, as would the general history of villa construction.
- 8.27 Intrusive 4<sup>th</sup> century material comes from wall (F241). Since this wall was not excavated it would seem probable that these sherds were from the deposit overlying it. Intrusive medieval sherds come from context 410.

*Phase 3b*

- 8.28 This contained 91 sherds. Again there is little that is closely dateable, and nothing that runs later than material from Phase 3a. There is a BB2 bowl (B10 B2.1; No 9) from context 1472, dated AD 150-200, and Central Gaulish samian Dr 31s from contexts 419 and 977 dated AD 150-200.
- 8.29 If Phase 3b is sequential to Phase 3a then it, perhaps, belongs in the later Antonine period.

*Phase 3c*

- 8.30 This phase contained 147 sherds, including BB1 for the first time, BB2 having been present in Phase 3b. The remaining material is mostly later 1<sup>st</sup> or 2<sup>nd</sup> century and the four samian ware sherds are all Central Gaulish. Thus nothing can be said about the date of this phase other than that it succeeds Phase 3b.

*Phase 3d*

- 8.31 This contains 85 sherds. Almost all were probably residual and of 1<sup>st</sup> to 2<sup>nd</sup> century date. No samian ware was present. The only later pieces were a greyware jar rim (R13 J1.1; No 84) that might date to the later 2<sup>nd</sup>-early 3<sup>rd</sup> century and a later 2<sup>nd</sup> century BB2 bowl (B10 B1.1, No 8). Thus a later 2<sup>nd</sup> or 3<sup>rd</sup> century date might be possible for this phase.

*Phase 4*

- 8.32 This contained 80 sherds. These, however, included much more contemporary dating evidence. The BB1 included two jar rims (B01 J1.2, J1.3; Nos 2, 3) of 3<sup>rd</sup> century date. Calcite gritted ware sherds included a Knapton type jar rim (G01 J4.1; No 20) of 3<sup>rd</sup> century date and a proto-Huntcliff type jar rim (JG01 J1.1; No 22) of mid 4<sup>th</sup> century date. There is also a Crambeck whiteware mortarium of Corder (1936) type 6 (M02 M1.1; No 50) of late 3<sup>rd</sup> to mid 4<sup>th</sup> century date along with a Piercebridge/Catterick Cantley tradition mortarium (M12 M2.1; No 57) dated c. AD 250-350. There is also a Crambeck greyware type 1 developed beaded and flanged bowl (R09 B1.1; No 65) of late 3<sup>rd</sup> or 4<sup>th</sup> century date.

- 8.33 There is also an Oxfordshire colour-coated ware (F21) bodysherd from context 894. This can date technically to anytime after c. AD240, however, most examples of this fabric from the north-east date to the last quarter of the 4<sup>th</sup> century, so this may be contemporary or intrusive. The sandy calcite gritted ware G02 of mid-late 4<sup>th</sup> century date (Evans 1985 fabric 007/168) also appears for the first time. Again this could be intrusive but might be contemporary with the end of the phase.
- 8.34 The phase would appear to start sometime in the 3<sup>rd</sup> century and runs to around c. AD 350.

*Phase 5a*

- 8.35 This contained a much larger assemblage of 449 sherds. It encompassed a good group of late 4<sup>th</sup> century material. This included two Southern Shell-Tempered ware bowls, probably from Harrold, Beds., (C13 B1.1; No 15) from contexts 271 and 1046, proto-Huntcliff type calcite gritted ware jars of mid 4<sup>th</sup> century date (G01 J1.1; No 22) from contexts 459 and 1424, Huntcliff type calcite gritted ware jars (G01 J3.1; No 21) of late 4<sup>th</sup> century date from contexts 264, 271, 459, 967, and 1278, and Huntcliff type storage jars and wide-mouthed jars (G01 SJ1.1; No 25 and G01 WMJ1.1; No 26) from contexts 264, 271, 272, 369, 691, and 1030.
- 8.36 The sandy calcite gritted ware G02 of mid-late 4<sup>th</sup> century date (Evans 1985 fabric 007/168) some also appears in Phase 4, with proto-Huntcliff type, Huntcliff type and barrel jars all represented (G02; J1.1, No 29, J2.1, No 30, J3.1, No 31).
- 8.37 Crambeck parchment ware mortaria of Corder's later 4<sup>th</sup> century type 7 also now appear (M01 M1.1; No 49) in contexts 927, 1007, and 1242. Amongst the Crambeck greyware a later 4<sup>th</sup> century Corder type 1b (R09 B1.3; No 63) appears for the first time in context 889.
- 8.38 The Phase 5a pottery would appear to span the later 4<sup>th</sup> (to early 5<sup>th</sup>) century. The coin list also confirms this, the excavators noting, "*The internal area [of the abandoned circular stone building] was covered by demolition rubble, and this deposit also contained coins dating to AD353-8 and AD388-402.*"
- 8.39 It is of note that this is the first phase in which East Gaulish samian ware occurs, there being a Dr 31, dated c. AD 160-230, from context 927. Intrusive material in the form of medieval sherds comes from contexts 264 and 1317, as a result of plough furrows.

*Phase 5b*

- 8.40 This contained 115 sherds. These included a late 4<sup>th</sup> century Dalesware type jar (C12 J1.1; No 12) from context 333, an Oxfordshire colour-coated ware Dr 38 copy bowl (F21 B1.1; No 19) Young (1977) type C51, AD 240-400+ from context 695, Huntcliff type jars etc and the first example of a sherd of Crambeck painted parchment ware (W03).



- 8.41 The material from this phase is consistent with a late 4<sup>th</sup> (to early 5<sup>th</sup>) century date and is not obviously later than that from Phase 5a.

*Phase 5c*

- 8.42 This contained 79 sherds. It was another late 4<sup>th</sup> century assemblage including another Oxfordshire colour-coated ware Dr 38 copy bowl (Young 1977 type C51, AD 240-400+) from context 287, Crambeck greyware, and Crambeck parchment ware mortaria, fabric G02 etc. Intrusive medieval sherds come from F566 and context 287, the result of later ploughing.

*Phase 5d*

- 8.43 This contained 143 sherds. Again the collection would appear of late 4<sup>th</sup> (to 5<sup>th</sup>) century date and includes sherds of Oxfordshire colour-coated ware (F21) from context 235, Huntcliff type jars (G01 J3.1; No 21) from contexts 235 and 660 and fabric G02 from context 236. There is, however, quite a quantity of earlier, residual gritted wares and greywares.

- 8.44 Intrusive material consists of sherds of medieval material from contexts 233 and 235.

*Phase 6*

- 8.45 This held the largest collection of pottery with 868 sherds. Much of it comprised another reasonable late 4<sup>th</sup> century group, with some, but not large quantities of, residual material. However there are also some 188 Anglian sherds. These cannot be closely dated and a 5<sup>th</sup>-7<sup>th</sup> century range is all that can be said with confidence. However, at this location it seems relatively unlikely that they date before the later 5<sup>th</sup> or 6<sup>th</sup> century.

- 8.46 Intrusive material consists of medieval sherds from contexts 2, 3, 84, 114, 145, 668, and 720, contexts affected by later ploughing.

*The date distribution of pottery within phases*

- 8.47 Tables 4.5, 4.6 and 4.7 show the date distribution of pottery within Phase 3, 4 and 5. Table 4.5 indicates that Phase 3a contains a group with a wide 1<sup>st</sup>-early 3<sup>rd</sup> century spread, whilst Phase 3b has a group with a much tighter Antonine peak, but with more residual material. Material from Phase 3c would seem to be largely residual with a Trajanic - mid Antonine peak, whilst that from Phase 3d again has a large Antonine component but does extend a little into the 3<sup>rd</sup> century.

- 8.48 Table 4.6 shows Phase 4 peaking in the mid-late 3<sup>rd</sup> century, although continuing into the mid 4<sup>th</sup>. Phase 5a has a reasonable early-mid 4<sup>th</sup> century peak, but a strong later 4<sup>th</sup> century one; Phase 5b only peaks in the later 4<sup>th</sup> century; Phase 5c has too few data; and Phase 5d has Antonine, early 4<sup>th</sup> and later 4<sup>th</sup> century material in similar quantities. It seems likely that all the pottery from Phase 5d is residual.

*Supply*

- 8.49 It is clear from Table 4.2 the level of amphora supply is relatively high for a basic level rural site, although low in absolute terms.

- 8.50 Unusually, shell-tempered ware is present in some quantity. Given that the most probable source for this is Harrold, Northants, its presence would seem very surprising were it not for the fact that it has been found on military sites on rivers in the region, such as Piercebridge and Binchester. A similar explanation probably accounts for the Oxfordshire ware.
- 8.51 The commonest fineware fabric is Crambeck whiteware and parchment ware, but most of these are mortaria. The commonest colour-coated wares are the Nene Valley fabrics, as might be expected given the late Roman emphasis to the site.
- 8.52 Gritted wares are by far the largest single fabric class from the site, amounting to some 57% of the entire assemblage. The largest group amongst these is handmade granitically tempered vessels at 26.6%. These would seem to be of very local origin. The associated material would suggest they occur on the site from the 2<sup>nd</sup> century onwards, although their poor representation in some of the later 4<sup>th</sup> century groups may suggest they had gone out of use in the later 4<sup>th</sup> century. Calcite gritted wares are the second largest group of gritted wares from the site. They seem to run through the site's history but the forms suggest they mainly date to the later 3<sup>rd</sup> century, as an occasional jar of Knapton type appears, and particularly the 4<sup>th</sup> century. Their frequency demonstrates the strong representation of 4<sup>th</sup> century material on the site. The third-largest group of gritted wares is a wheelmade fabric, G41, also seen at Piercebridge, generally appearing in the form of lid-seated jars. These are of later 3<sup>rd</sup>-mid 4<sup>th</sup> century date, and are reasonably represented, given that this period comprises a relatively large proportion of the assemblage.
- 8.53 Mortaria are quite well represented on the site; there are a few white, buff and oxidised 2<sup>nd</sup> century beaded and flanged mortaria, more Mancetter vessels, mainly 3<sup>rd</sup> century reeded hammerheads, and the commonest mortaria are 4<sup>th</sup> century Crambeck pieces.
- 8.54 Reduced wares amount to only 18% of the assemblage, a relatively low proportion compared with many northern assemblages. The largest single fabric group is Crambeck greywares, R09, at 5.3% of the assemblage. This is much less than the 23% of calcite gritted wares. Generally, Crambeck greywares, particularly on rural sites, are vastly outnumbered by calcite gritted wares in the later 4<sup>th</sup> century, and a similar ratio of about 5:1 occurs at Newton Bewley (Evans forthcoming e).
- 8.55 Some 12.7% of other greywares occur in the assemblage, and a large part of these are of 2<sup>nd</sup>-earlier 4<sup>th</sup> century date.
- 8.56 Around 13% of the pottery is possibly Anglian. All of this is granitically tempered with gold mica inclusions. Until recently this would tend to be suggested to be of Charnwood origin, but evidence from Scorton now suggests otherwise (Evans forthcoming a), and the assemblage here is of interest as it may suggest a source for this fabric in the north-east somewhere in the Quarry Farm / Piercebridge area. This has been studied further by petrological and chemical analysis (see Vince, below, 8.116 – 8.118).

- 8.57 Table 4.9 shows the likely origins of fabrics reaching the site. The data are dominated by the later 4<sup>th</sup> century material, which is by far the most frequent here. Such pottery is predominantly from regional suppliers, namely Crambeck and the Vale of Pickering, and this is reflected in the high levels of regionally sourced fabrics here. Imports are few, with relatively few amphora sherds and samian ware, even if both are quite well represented compared with the most basic level rural sites. More distant regional sources are also poorly represented.

### *Catalogue*

- 8.58 See Appendix 3.61 - 104

### *Discussion*

#### *Functional analysis*

- 8.59 Tables 4.18-4.20 show a functional analysis of the major stratified groups and the assemblage as a whole. To commence with the overall assemblage, it is quite strongly jar-dominated, with jars at 59% by MV. This level falls well within the regional range for basic level rural sites (Evans 1993). Similarly dish and bowl levels (12% and 16% respectively) are low. Mortaria at 7% are strongly represented. This is at first appearance unusual, although there are a number of rural sites where very high mortaria levels occur.
- 8.60 Tables 4.19 and 4.20 show the functional analysis of vessels by phase for those phases which have groups large enough to be possibly meaningful.
- 8.61 The figures for phases 3a-d are interesting. Here jar levels are quite low and tablewares high at 46% by minimum numbers of rims. These levels fall well within the range seen on urban sites and would not be expected on a basic level rural site; however, the RE figures suggest jars were still dominant in this phase. From Phase 4 onwards jar levels are consistently high and tablewares scarce, although they are rather commoner in Phase 5b. Mortaria levels are also consistently high. The data from Phase 4 are too few to be reliable. These later Roman figures place the site firmly within the usual range for basic level rural sites.
- 8.62 Thus there might be a change in the way pottery was used on the site at the end of Phase 3, with pottery that phase being used in a more high-status manner than in subsequent phases, but this is not clear since the trend is not replicated in the RE figures.
- 8.63 Throughout the sequence mortaria seem to have been used more frequently than might be expected. The evidence of burning and sooting also suggests that these mortaria were not being used in the manner often assumed, and that many seem to have been heated in use. This is a phenomenon observed elsewhere (see 8.83, below).

#### *Finewares*

- 8.64 Finewares levels on the site are fairly low at 3.9%, although still just above the 3% which tends to be the usual maximum for basic level rural sites. Table 4.22 shows that phases with the highest fineware levels were 3a at 6.9% by

count and 12.9% by weight, and Phase 5b with 9.6%% by count and 4.3% by weight. Levels tend to remain around 4%, rather higher than would be expected on most basic level rural sites, and, perhaps, reflecting the site's later history as a villa.

#### *Taphonomy*

- 8.65 Table 4.23 shows the quantities of pottery coming from each phase of the site. Most phases yield small quantities of pottery, on average around 5%, with the largest quantity from Roman phases being 18.2% from Phase 5a. Nearly half of all the pottery comes from the Anglian Phase 6, much of this being late 4<sup>th</sup> century material. It is doubtful that this was curated material. Rather this material might be interpreted as the similar large quantities of late Roman pottery and animal bone from Lincoln (Darling 1977), Binchester (Evans and Rátkai forthcoming), Segontium (Evans 1996b, Fig. 48), Alcester (Evans 1996b, Fig. 47) etc, as evidence of a change or breakdown in late Roman refuse disposal mechanisms. This author has flippantly suggested this as the 'dirty Christian' horizon.
- 8.66 Overall the quantity of pottery from the site is not large, and for an extensively excavated site it is small. There is little doubt that a site of comparable size in East Yorkshire would have produced much more pottery, as would one anywhere in the 'Lowland zone'. The site, whilst clearly not aceramic, has produced an assemblage which is much more like those from sites in West Yorkshire or the northern Vale of York in terms of quantity of pottery, than similar sites in, for example, East Yorkshire. Unlike pottery assemblages from Roman period sites in Wales and the north-west (Evans forthcoming j) the Quarry Farm collection is not heavily macerated and of very small average sherd size, nor is it dominated by vessels in one particular fabric and function, as assemblages from those regions often are. A similar assemblage might well be that from Parlington Hollins (Evans 2001) in West Yorkshire. Assemblages from these areas show some use of Roman ceramics, and a fairly wholesale use of them rather than for just a limited functional range, but a low level of usage compared with apparently comparable 'Lowland Zone' sites. It is of note that a feature these areas have in common is a low level of ceramic usage in the preceding Iron Age.
- 8.67 It may also be of significance that iron nails are also remarkably scarce from the site, some 78 being listed in the Assessment Report, along with only 7.4kg of ceramic building material. Quernstones are, however, fairly common.
- 8.68 Table 4.24 shows the quantities of pottery from different feature types from Quarry Farm and Table 4.25 shows the same data as percentages of those quantities.
- 8.69 The features with the highest proportion of the pottery are layers at 29.5%, general features at 22.5%, and pits at 21.6%, with ditches and gullies being the fourth most important class at 18.4%. The remainder of feature types are of minor significance. The term 'general features' has been used here for the working hollows / scoops from this site.

- 8.70 Table 4.24 shows average sherd weight and average percentage of rim for assemblages from each of the feature types. This indicates that pottery from the pits is generally of larger than average sherd size, pottery from the layers is around average, and pottery from most other feature types is of below average size. The site average sherd weight at 21.8g is quite high, and falls within the 10-30g range of the mainly military and urban sites examined in this author's regional study (Evans 1985). This site certainly does not fall into the pattern found on some 'Highland Zone' rural sites that have average sherd weights below 10g (Evans 1998).
- 8.71 Martin (forthcoming a and b), and Evans (forthcoming f, g, h & i) have developed some comparative data. Most of this is for basic level rural sites.
- 8.72 All of these have high levels of pottery from ditches and gullies, usually over 65%, with levels from Bottisham, Cambs of 75.6% and Haddon, Cambs of 79.1%. Martin (forthcoming a-b) has produced similar data from three Essex sites, Ship Lane, Aveley, Great Holts Farm, Boreham and Bulls Lodge Dairy, Boreham, with pot proportions from ditches etc of 65%, 68% and 68% respectively, and 10%, 3% and 22% from pits. Similar levels generally come from the Transco Pipeline sites in Warwickshire, with ditches and gullies at 96.3% in Area A, 98.0% in Area B1, 36.1% in Area B2, and 84.3% in Area H. Interestingly Area B2 had a number of indications suggesting a nearby villa.
- 8.73 In contrast Table 4.26 shows the taphonomic distribution of pottery from the urban site at Worcester Magistrates Courts. There the dominant contexts for deposition are layers, which contain 71.6% of the pottery
- 8.74 It would seem that a distinct pattern of pottery deposition on different site types is emerging from these data with villa sites falling somewhere between basic level rural sites and urban ones. The Quarry Farm data fall into this pattern, with only 18% of pottery from ditches and gullies and 29.5% from layers, giving more of an affinity with urban sites than with basic level rural ones.
- 8.75 Other aspects of the data, however, are a little unusual - the 22.5% of pottery from general features, which are all shallow hollows, and the 21.6% from pits. The quantity of pottery from pits varies in the comparative data available, but the Quarry Farm site is certainly at the top of the range. Both of these features probably relate to some extent to the Anglian occupation on the site. Much of the Anglian pottery comes from the working hollows and some comes from the pits, suggesting the former are probably of Anglian date, and so are at least some of the latter.

#### *Repairs*

- 8.76 There is 0.14% of the total stratified sherd count (Table 4.27) that has evidence of repairs, in the form of rivet holes. These are listed in Table 4.28. This level is fairly low, 0.1% being about typical (Mills forthcoming a). It is of note that none of the riveted sherds is samian, which tends, usually, to be the main fabric repaired. All three repaired vessels are probably of later Roman date.

- 8.77 The fairly typical incidence of repairs suggests the site did not have difficulty obtaining ceramics and, as usual, there is no evidence of any peak of repairs at the end of the Roman period.

*Cross-joins*

- 8.78 Table 4.29 tabulates all observed cross-joins in the assemblage. These were not searched for in detail and relatively few were observed. The pattern, such as it is, suggests a level of disturbance of Phase 5a deposits in subsequent phases.

*Complete vessels and profiles*

- 8.79 There is only one complete or largely complete vessel from the site. This is a complete jar in fabric G11 from context 882, a pit of Phase 3c. Since complete vessels do not usually occur except in burial or ritual contexts this must be regarded as likely to be a ritual deposit.
- 8.80 The dog burial from context F777 would be regarded as another were it Romano-British, as there is a very strong association of articulated dog skeletons and ritual deposits in the Romano-British period. However, this is of Anglian date, when its significance may be rather less.

*Burnt sherds*

- 8.81 Around 23% of the sherds from the site show some evidence of burning. This is a relatively high proportion. Table 4.31 shows the proportion of burnt sherds within each major fabric class.
- 8.82 As might be expected (cf. Evans 1993) the ‘cooking pot’ fabrics are generally those with the highest levels of burning.
- 8.83 This accounts for the Black Burnished wares, the shell-tempered wares, and the gritted wares. Amongst the other fabrics, there are high figures only amongst those groups which are too small to be reliable, except for the mortaria. The mortaria do show, at 21%, much more burning than might be expected. This is a phenomenon observed elsewhere (Cool 2004a; Evans and Mills forthcoming a; Mills forthcoming), which seems to relate to mortaria often being heated in their use. The preparation of some form of porridge-type cereal-based dish seems a possibility.
- 8.84 Table 4.32 shows the proportions of vessels in different functional types which are sooted. As might be expected jars are one of the most commonly sooted classes, ‘cooking pots’ being the most commonly sooted within these. Bowls and dishes are less frequently sooted, as might be expected. However, the most commonly sooted vessel class turns out to be mortaria, at 35%, once more, like the burning figures by fabric, emphasising the very frequent heating of this class of vessel.

*The end of Roman pottery usage at Quarry Farm*

- 8.85 Tables 4.33-4.35 examine the average sherd size of the major late Roman fabrics from Phase 5 and Phase 6 deposits. Phase 6 clearly dates to the Anglian period, whenever exactly that commences on this site, whilst, as

discussed above, the end of the Roman period would seem to be reached in Phase 5a.

- 8.86 It is interesting, therefore, to see if the Roman pottery in phases subsequent to 5a appears to be residual, or contemporary. Table 4.33 shows that for fabrics G01 and G11 average sherd size does indeed decline after Phase 5a, although the data for Crambeck greyware behave erratically. It is also quite clear that the contemporary Anglian pottery from Phase 6 is much more macerated than the Roman pottery which appears in that phase.
- 8.87 Table 4.34 shows all the sub-phases of Phase 5 amalgamated in comparison with Phase 6. Again for fabrics G01 and G11 there is a clear decline in average sherd size from Phase 5 to Phase 6, and again the results for Crambeck greyware are erratic.
- 8.88 Lastly, Table 4.35 shows the same comparisons of all the sub-phases of Phase 5 with Phase 6, but divided out by context type for the three fabrics. This indicates that the decline in average sherd size for G01 and G11 holds good within each of the commoner feature types, and thus that the figures are not a product of the changing taphonomic composition of the assemblages from the two phases.
- 8.89 Thus it would seem reasonably clear that by Phase 6 at the latest the Roman pottery from the site is archaeologically residual. There is another important reason for taking this to be the case. It has already been shown that the contemporary Anglian pottery has a much smaller average sherd size, yet its thickness and nature is very similar to those of vessels in G01 and G11. The reason for this would appear to be the different approach taken to disposing of broken pottery in this period. It is very difficult to see why Roman pottery, were it also being used contemporaneously with the Anglian material, should not also be subject to similar disposal patterns. Thus there is no evidence for the continued use of Roman pottery on the site long into the post-Roman period, and there is evidence to the contrary.

#### ***Discussion of the site in its regional context***

- 8.90 It is interesting to see an assemblage from a rural site in the mid Tees Valley. As discussed above and below, rural sites to the north of this in County Durham are virtually aceramic in the Iron Age, Roman and Anglian periods. In the Tees Valley there is a tradition of using ceramics, as exemplified at Thorpe Thewles (Heslop 1987), although ceramic use appears less strong here, and in the northern Vale of York to the south, than in East Yorkshire. The area to the west in the Pennines and the north-west is also near to aceramic with very low quantities of pottery from Roman period sites, generally amounting to fewer than 300 sherds, and often under 100.
- 8.91 This regional background of pottery use is reflected here in the assemblage size, which is small for the area excavated, and also, perhaps, in the considerable use of locally produced gritted wares. Sumpter (1990, 144) has pointed to the tradition of using different locally produced gritted wares along the Pennine skirt of the Vale of York, and the G11 and G41 groups could be

seen as northerly exemplars of these. Equally, sites in the northern Vale of York have traditions of producing Iron Age style gritted wares, sometimes in granitic fabrics, in the Roman period. Many or all of these fabrics seem to have been produced close to the sites using them, and may not have been distributed through the monetary economy.

- 8.92 The tradition of pottery use here seems similar to that in West Yorkshire, in that it draws on the full range of types and fabrics available in the local urban and military market, but that use is very sparse. This is in contrast to pottery use in, for example, North Wales, where pottery use is largely confined to display finewares and BB1 jars, dishes and bowls. Mortaria use here is quite high at 6.8%, although nowhere near as high as on Cumbrian rural sites (Evans forthcoming j). These mortaria were clearly in demand for some activity which could not be related to Roman cuisine. It could be that that use was also pursued to some extent at Quarry Farm.
- 8.93 The Quarry Farm assemblage in the earlier Roman period would seem to have consisted principally of gritted wares and greywares, with the former mainly being of local origin, but with an element of East Yorkshire calcite gritted wares suggesting some connection with that region which other rural sites in the Vale of York do not display (provided that this material is not intrusive). Such fabrics are absent from Mourie Farm (Evans forthcoming c) and West Moor Farm, Crathorne (Evans forthcoming d), and Bayram Hill (Evans unpublished) in the northern Vale of York.
- 8.94 The later Roman assemblage was again dominated by gritted wares, but the local component amongst these declined, to be replaced by East Yorkshire calcite gritted ware vessels whilst Crambeck provided the greywares and mortaria, supplemented by a few products from Catterick and Piercebridge. In the late Roman period the pottery supply to the site falls into a pattern typical of the region as a whole, and the emphasis on site supply moves from predominantly local to predominantly regional suppliers.
- 8.95 The late Roman pottery assemblage has some unusual aspects. Generally it would not be out of place on a basic level rural site in terms of its functional composition, although its fineware levels may be a little high for this. However, to have both Oxfordshire ware and Southern-Shell tempered ware on a rural site in the region is most unusual; indeed, it is probably unique. These features remind us of the presence of a crossbow brooch here (paragraph 8.149) and perhaps hint at connexions with Piercebridge or another military site.
- 8.96 Interestingly, the site's taphonomy is one of the features which distinguish it most strongly from the usual run of basic level rural sites. These indicators, which are relatively novel and still being developed, show the site as much more akin to urban sites than to basic level rural ones.
- 8.97 This author has no evidence with which to date the full extent of the span of Phase 5. Phase 5a would seem to run to the end of the Roman period. Phases 5b-5d then follow this; the pottery from them is no later than that from Phase



5a. This author can see no evidence for Roman pottery production in the region of any scale post c. AD 420, i.e. after the end of the use of low-value Roman coinage. Similarly there are no means of dating the Anglian pottery from Phase 6 beyond its 5<sup>th</sup>-7<sup>th</sup> century general range. The Phase 5c cist burial belongs to a tradition which has been argued to be of post-Roman date (Faull 1977). It does seem, therefore, that the archaeologically residual pottery in these phases may accompany activity of early post-Roman date.

### **Anglian pottery** by Philip Mills

#### **Introduction**

- 8.98 Some 198 sherds of Anglian pottery were recovered from the excavations, including 29 rimsherds and 11 sherds with stamped decoration. The latter are subject to a separate report (paragraphs 8.110 – 8.115) from Diane Briscoe.
- 8.99 Macroscopically all appeared to be in a single fabric, Z11, a handmade reduced fabric with common-abundant angular quartz inclusions, c. 0.2-1mm, and some gold mica up to 0.2mm. However, four sherds sent for thin sectioning (paragraphs 8.110- 8.115) revealed that one of the Z11 samples had a quite different fabric from the remaining three and this was also distinguished chemically from the remaining Ingleby Barwick samples.
- 8.100 Vince notes below that “*The combined petrological and chemical evidence... points to a local source for G11, G41 and Z11 subfabric 2. It is likely that Z11 subfabric 1 was also made locally.*”
- 8.101 Fabrics with gold mica inclusions are common in the Anglian period in many parts of England; they are, however, very rare in the Romano-British period.
- 8.102 Williams and Vince (1997) confirm that pottery of similar appearance to the Charnwood material (ie pottery with large gold mica inclusions) was used in the Baltic and Scandinavia in the 5<sup>th</sup>-10<sup>th</sup> centuries, and that analytically the composition of the clay of these vessels can be distinguished from Charnwood type vessels from Catholme. In doing so, they also draw attention to a likely source of the tempering tradition. Communities can be intensely conservative about pottery tempering traditions.
- 8.103 Calcite was used extensively as a temper in East Yorkshire for over 1,200 years (but notably ceased to be a significant tempering material in the Anglian period). Dolerite inclusions in the Tees Valley are used throughout the later Iron Age and Roman periods, and temper traditions in the Loire area seem to remain constant throughout the Merovingian and Carolingian periods (Scull and Evans in prep.). It might seem rather likely, therefore, that a group used to a micaceous granitic temper in its homelands would preferentially seek out such in newly settled territories.
- 8.104 Table 4.36 shows fabric proportions by major temper type from a series of northern English sites, including Quarry Farm. The fabrics with gold mica, the CHARN group, have a distinctive northern distribution, being most frequent at Quarry Farm, Piercebridge and Catterick. The distribution falls off as one travels south into West Yorkshire and east into East Yorkshire.

- 8.105 This distributional evidence is consistent with Vince's (paragraph 8.118) petrological and geochemical evidence of an origin in the Tees Valley or the northern Vale of York.
- 8.106 Quarry Farm is on the northern limit of Anglo-Saxon pottery use. In contrast to Yorkshire, north of the Tees there does appear to be a sort of continuity of pottery use from the Roman to the Anglian periods. Here, rural sites were generally near to aceramic in the Roman period, as was also the case north of the frontier in Northumberland. This seems to have continued into the Anglian period. There is but a single Anglian vessel from the Norton-on-Tees cemetery, and one from Binchester, and none from the Northumbrian cemetery at Millfield (Scull and Harding 1990), and there is virtually no stamp-decorated pottery from Durham and Northumberland (Briscoe, pers. comm.). Whilst this could be coincidental, Anglian settlement elsewhere in England remains ceramic-using, and the paucity of ceramics does look like the continuation of a pre-existing phenomenon.
- 8.107 Briscoe's examination of the stamp evidence (below) suggests the stamps do not closely relate to those from other nearby sites.
- 8.108 The proportion of sherds with sooting or internal carbonised deposits in this assemblage is low, at 10.6%. This is much lower than at Scorton and Catterick (Evans forthcoming a) and Parlington Hollins (Evans 2001). It is not accounted for by the average sherd size, as that at Parlington Hollins at 9.3g was actually lower than the 12.1g of Anglian sherds here. However, the generally heavily-worn state of the sherds here, which accompanies their small size, may well be a factor; unfortunately that is not an aspect of this, or other, assemblages that this author has quantified.
- 8.109 As usual the vast majority of the forms are jars, with only a single bowl/dish and two vessels which might be jars or bowls.

#### **Anglian pottery stamps** by *Diane Briscoe*

##### **Introduction**

- 8.110 The search for parallels to Quarry Farm was concentrated on the seven sites that lie within an approximately 20-mile radius of the site. These provided a total of twenty stamps for comparison, and are listed in Table 4.37. Neither Darlington nor Piercebridge provided any comparable stamps.

##### **Catalogue**

- 8.111 See Appendix 3.105 - 111

##### **Discussion**

- 8.112 This is an interesting site because it lies on the northern edge of where stamped pottery occurs during the Early Medieval Period. As ever, the site is also tantalising because the stamps do not appear to tie up with other known local sites, and only a couple are sufficiently distinctive to provide possible connections to other sites.

- 8.113 The most promising is the D 1bi stamp which shows definite connections to the Lincolnshire / Trent Valley area, although the spread of the other examples makes me wonder if Ingleby Barwick may not represent a semi-permanent northern outpost for a group of traders based somewhere in the Trent Valley.
- 8.114 The H 1biii stamp has produced less information than was originally hoped for. The H motif (S & Z shapes and Figure-of-Eights) shows a definite Anglian bias with the vast majority coming from north of a line running east-west through central Suffolk. However, the fact that a similar version of the motif has been found in two examples at Spong Hill, plus another dissimilar example, coupled with four examples of the D 1bi stamp, would seem to indicate a connection to the most important centre of Norfolk. Both stamps are rare in the area with one example each of H 1biii coming from Field Dalling and Mannington and an H 1biv (its mirror image) coming from Caistor-by-Norwich. There are no other examples of D 1bi from Norfolk.
- 8.115 It is almost always difficult to draw any useful conclusions from so small a sample, and this is the case for this site as well.

**Characterisation studies of some Romano-British and Anglo-Saxon pottery** by Alan Vince

*Introduction*

- 8.116 Samples of two Romano-British coarseware fabrics and one Anglo-Saxon fabric were submitted for thin section and chemical analysis (Table 4.39).

*Results*

- 8.117 See Appendix 3.112 - 134

*Conclusions*

- 8.118 Thin section analysis confirms that G11 and G41 are separate fabric groups, although chemical analysis indicates that both have similar compositions. Thin sectioning also reveals that one of the Z11 samples has a quite different fabric from the remaining three and is also distinguished chemically from the remaining Ingleby Barwick samples. The range of inclusion types in G11 and Z11 subfabric 2 includes moderate detrital basic igneous rock, which outcrops as dykes extensively north of the Tees and is common in fluvio-glacial sands and later sands along the east coast. It also occurs in boulder clays in the Vale of York and further south, but is not commonly found in pottery that might have a local origin in those areas and so points to a local origin without proving one. The combined petrological and chemical evidence therefore points to a local source for G11, G41 and Z11 subfabric 2. It is likely that Z11 subfabric 1 was also made locally, although both petrological and chemical evidence points to parallels with vessels from sites in the Vale of York and a more southerly origin is also possible.

**Ceramic artefacts** by Dr Steve Willis (*samian*), Dr Fraser Hunter & Dawn McLaren

- 8.119 Two ceramic spindle whorls were recovered, as well as a reused sherd of samian that was refashioned as a spindle whorl.

### **Catalogue**

8.120 See Appendix 3.135 - 136

### **Discussion**

8.121 The samian item constitutes an unstratified sherd of samian ware that has been refashioned into a small roundel with a central perforation. The item is broken with only approximately half of the roundel now represented. The extant disc weighs 3g and is 30mm in diameter and about 5mm thick at greatest. The drilled hole through the centre has smooth sides and is 5.5mm in diameter. The piece has been appropriately fashioned from the domed floor of a samian ware dish, most probably of form Drag. 31. The circumference of the item is smooth. The samian fabric is East Gaulish Rheinzabern ware and an example of this samian type recovered as a pottery sherd would normally be ascribed a date range of about AD 160-230, though here the secondary life of the item may mean it was in use till a later time. Part of an unidentifiable stamp is represented reading ‘· SI[’ or perhaps more likely ‘]IS ·’ though it is possible that the stamp continued. The break is unworn. This item fits the established criteria for the classification of spindle whorls (Crummy 1983, 67, 94): the perforation should be a minimum of 5mm and centrally placed; the diameter of the roundel should be even, with smooth sides; the whorl diameter should be 50mm or less. Samian was frequently employed in the improvised manufacture of spindle whorls.

**Samian** by *Dr Steve Willis*

### **Introduction**

8.122 A total of 45 sherds of samian fine tableware (*terra sigillata*) was recovered during the excavations. Amongst these sherds was a pierced item refashioned as a spindlewhorl, which is reported separately above. The weight of these sherds, excluding the spindlewhorl, is 542 grams and the rim equivalence (EVE) aggregate is just 0.71. Of this total 37 sherds (371g) were stratified. Some 26 contexts yielded samian. Scrutiny of the assemblage and cross-comparison between examples of the same type reveals that approximately 41 vessels are represented (34 stratified, 7 unstratified). One legible stamp occurs, together with parts of other stamps. Much of the stratified samian is likely to be residual. Whilst this is a moderately-sized group the material provides useful chronological information, and also sheds light on social and economic dimensions of the site and its inhabitants. Moreover the modest size of the samian assemblage needs to be viewed alongside both the small overall size of the recovered pottery sample given the scale of the excavations, and the general record of low numbers of ceramic finds from rural sites in the region during later prehistory and the Roman era. At present there is little in the way of comparable samian assemblages from rural sites in north-east England; nonetheless broad trends at rural sites within the Roman province provide a framework for comparison.

8.123 The majority of the sherds are of 2<sup>nd</sup> century AD date and from Lezoux, though the emphasis is strongly towards the later 2<sup>nd</sup> century. A few East Gaulish pieces, all from Rheinzabern, are present. Of the stratified sherds, the majority were found as solitary sherds of samian within discrete contexts.

Generally the samian sherds are at an advanced stage of fragmentation, though they are otherwise in a reasonable state of preservation; they do not, for instance, show signs of adverse weathering or malign soil conditions. Despite the condition of the material few sherds could not be attributed to specific or generic form type and all could be identified to production source. Aspects touched upon here are considered below in the Discussion, as is the chronology of the assemblage and what its composition may suggest with regard to cultural aspects of the site and its consumers.

### ***Catalogue***

8.124 See Appendix 3.137 - 165

### ***Discussion***

#### *Chronology and sources*

- 8.125 The time-span of the collection is about AD 120-260, which covers the middle and later era of samian importation into Britain (cf. Table 4.50). No South Gaulish ware or items from Les Martres-de-Veyre occur, so there is an absence of the samian that was circulating to other sites in the north-east of England in the period about AD 60-120, from these sources (cf. Willis 1993; 1997). Les Martres samian, dating in Britain, principally to the period about AD 100-130, is not a particularly common ware and its absence, given the size of the sample, is not especially surprising. More significant is the absence of any South Gaulish ware as this was widespread in the Flavian to Flavian/Trajanic period in Britain, occurring at all types of site. This would seem to indicate that either there was little by way of occupation at the site in the 1<sup>st</sup> century AD, or that, in contrast to neighbouring sites through the Tees Valley, there was 1<sup>st</sup> century settlement but that there was no arrival / consumption of samian (an improbable scenario).
- 8.126 The great majority of items (83%) are from the Central Gaulish production site of Lezoux. This centre was the main source of samian supplied to Britain in the period about AD 120-200 and it occurs at virtually every site occupied during that period. Of the Lezoux items from Quarry Farm there are only two that would normally be dated to before about AD 150. They might indicate Hadrianic/early Antonine activity, though they could have been in circulation around the mid 2<sup>nd</sup> century and arrived at the Quarry Farm site a little after about AD 150. Table 4.50 shows a strong emphasis in the date of the samian during the second half of the 2<sup>nd</sup> century. This was a time of massive importation of samian to Britain and so this reflects in part a wider picture of availability (cf. Willis 2005); nonetheless, the comparatively high amount must be an index of site date. Half the 41 vessels certainly date to after about AD 150.
- 8.127 The East Gaulish items present extend the date range into the 3<sup>rd</sup> century, and potentially these vessels, either individually or together, may have arrived at the site in the 3<sup>rd</sup> century. They are all from Rheinzabern, which was the origin of the majority of East Gaulish samian ware found in Britain. The spindlewhorl is also of Rheinzabern fabric and the dish form from which it derives would date to the period about AD 160-230. Whether this artefact arrived at the site as a dish or spindlewhorl is an open question. East Gaulish

samian is widespread in Britain but typically forms only small proportions of the samian recovered from sites, so its low level of representation amongst the present sample is not to be considered unusual.

- 8.128 Tables 4.51 and 4.52 record the incidence of the sherds by their archaeological date and their site phase. Table 4.51 shows these data for site phases before 5a; any samian items occurring in contexts of Phase 5a, which is late 4<sup>th</sup> century (that is, Late Roman), or later, can be considered residual. Table 4.52 documents the incidence for Phase 5a and later phases.
- 8.129 Considering Table 4.51, Site Phase 3 is early Romano-British. The earliest stratified sherd is a Hadrianic-Antonine item from Phase 3A (context 221), though this is a tiny fragment and so some caution is necessary when evaluating its status as dating evidence. Two sherds were forthcoming, from separate contexts, of Phase 3B. Both were from the Drag. 31 type dish, one of the most common forms of the Antonine period. Four items came from Phase 3C, including the earliest samian item, from a dish dating to the Hadrianic period, while two of the vessels dated to after about AD 150, again being Drag. 31 dishes. In sum there are only nine items that were stratified in contexts chronologically at all near to their likely period of use. Three-quarters of the samian was recovered either unstratified or from deposits which were laid down much later than the probable currency of the samian, even considering its propensity for a long life-span (cf. Willis 2005; Wallace 2006). It is clear from other sites that a proportion of samian vessels generally had particularly long lives in use, with their currency extending into or through the 3<sup>rd</sup> century at least; this may be so at this site. Table 4.52 demonstrates a 'tail' of deposition of presumably residual pieces through the Late Roman sequence and beyond. As Jeremy Evans' report on the other Roman pottery types shows, this is in fact a phenomenon common to the Roman period pottery assemblage in general. Whilst the samian may not be especially helpful in dating contexts in this particular case, nonetheless the sample provides a record of supply / acquisition over a defined period that is of value given the nature of the site.
- 8.130 The samian arising from the 1979 excavations at the site was examined by the present author in early 1990, together with the rest of the pottery. Both this material and the samian from the evaluation trenches of 2000 provide a consistent picture. Only three sherds of samian were present amongst the 1979 assemblage. These comprised the weathered body sherd from a Central Gaulish Drag. 37, published as Fig. 7 No. 14 in the 1984 report, which was retrieved from ploughsoil; a sherd from a Central Gaulish Drag. 33 cup from context 6, a filling of Ditch A; and a further body sherd from a Central Gaulish Drag. 37, from context 29, also from Ditch A (Heslop 1984, 31-3, and records by the present author). All three sherds are attributable to the 2<sup>nd</sup> century. The samian from the evaluation work of 2000 amounted to sherds from four vessels, amongst an assemblage of about 18 typologically Roman vessels represented by 36 sherds (Willis 2000b). These items were, not surprisingly, qualitatively similar to the present items. Three trenches yielded sherds (1, 4 and 15). Two of the items were from Lezoux and dated to the period about AD 120-200, one coming from a bowl or dish. The other two vessels were

both from East Gaul, one perhaps from a Drag. 38 bowl and datable to the period about AD 150-260, the other being a Drag. 31R bowl probably from Argonne or Chémery-Faulquemont and of similar date. Hence there is an overall coherence to the samian samples from the site in terms of their date and sources, as well as in the character of the recovered items.

*The composition of the assemblage by form*

- 8.131 Table 4.53 summarises the composition of the sample by source, generic type and form class. Some 37 vessels can be classified. The range of types is not wide (a minimum of nine). This restricted range is in line with the nature of the site as a rural complex, while its likely liminal geographic position may be another factor. Of the 37 vessels 7 (about 19%) are decorated which largely conforms with the general pattern for rural sites of some status (Willis 2005), though this is a notably lower frequency than is observed with samples from forts, vici and towns (cf. Willis 2005). Amongst the plain forms cups, bowls and especially dishes are to the fore, with the Drag. 31 the most frequent form. This pattern is consistent with the evidence of samian assemblages of similar date from other rural sites in Britain (Willis 2005). The relatively strong showing by forms Drag. 31, 31R, 33 and 37 is in accord with the demonstrable prominence of these forms in the period about AD 150-200, while there also occur a number of forms characteristic of the period: Drag. 38, Curle 23 and the Ludowici Ti' dish. It is telling that the East Gaulish items are, in terms of forms, a consistent subset of the general picture. The forms present in this ware are those that are most frequent amongst the sample generally. The forms present amongst the samian from the 1979 and 2000 evaluations are also in accord with the general pattern (see above).
- 8.132 Given the date range of the samian from the site and the popularity of mortaria on rural sites in northern Britain the absence of any examples of samian mortaria is noteworthy, though such items will have been comparatively costly.

*Taphonomy and other aspects of the samian assemblage*

- 8.133 The small size of the samian assemblage, relative to the amount of archaeological deposits investigated fits with the picture of the coarse wares from the site and reflects a clear pattern seen at other rural/indigenous sites in the north-east of England. This suggests either a low level of ceramic consumption and turnover, or rigorous removal of broken or otherwise artefactual material from the settlement area. The former seems more likely, but whatever the reason, low quantities of archaeological finds is something that continues through from the Iron Age. There is the tendency for samian sherds to occur as 'singletons' in contexts with a high degree of residuality, but in these respects the samian simply conforms to the nature of the ceramic finds from this site in general, indicating much about attitudes to material culture and the processes of site formation.
- 8.134 The assemblage comprises of fairly fragmented sherds, with an average sherd weight for the stratified finds of 10.1g. This figure is probably at the lower end of the normal range for average weight of samian sherds from an excavation. Some sites yield more fragmented assemblages with lower overall

averages of, for instance, 5g. Excavations at the villa complex at Hayton, East Yorkshire, between 1995-2001 produced 222 sherds of samian from about 182 vessels, and the average sherd weight in this case was 10.4g (Willis forthcoming). Some 60 samian sherds from the rural complex at Haddon Lodge, Cambridgeshire, excavated in 1999, have an average weight of 7.9g (Willis 2003). The samian at Quarry Farm has been subject to attritional processes following breakage, but no more so than one typically sees at other sites. The two largest sherds in the collection (being from bases weighing 81g and 71g) were unstratified pieces.

- 8.135 Several vessels show use wear. The rim of the Drag. 31 from context 419 and the rim from the Drag. 31R from 668 are worn, as are the footrings from the Drag. 37 from 703, the Drag. 31 from context 129 (see below) and the unstratified Drag. 30 and Drag. 31 from Lezoux. The Curle 23 from context 63 shows both interior wear and wear to the footring. Some evidence of wear is not surprising; more remarkable are several cases where vessels have been adapted to new uses.
- 8.136 Four vessels have evidently been altered to form different types of vessels. In all cases this has involved the trimming off of the body of the vessel at the junction of the vessel floor and the footring, with apparent subsequent use of the resulting item inverted, to form a small dish (the sides of which are the wall of the original footring upside down). This is a practice seen elsewhere and may have been undertaken following damage to or breakage of the original vessel, although an imperative to produce an ash-tray type dish may have resulted in non-damaged vessels being altered. Three of the altered items were dishes and the other a plain bowl; indeed dishes seem the most common type to which this change is applied in Britain. The base from the Drag. 31 from context 129 has been trimmed round and carefully finished at the junction of the vessel floor and the footring, while the Drag. 18/31 from context 763 has been trimmed and smoothed at the junction of the vessel floor and the wall. The base of the 31R from context 492 has likewise been clipped round at this point. The Rheinzabern Drag. 31 from context 2 is worn within the area of the footring indicating the vessel had been inverted and re-used. The resultant converted vessels could have been used for any number of purposes, but some instances elsewhere seem to relate to re-use as lamps (Willis 2005, 8.5.2). At the Fairy Knowe broch, central Scotland, three samian platters and one coarse ware flagon had been trimmed round and smoothed in the same way as at Quarry Farm; the altered bases were evidently inverted, as at Quarry Farm, for use as shallow dishes (Willis 1998, 321-5). At least one of the altered samian vessels shows signs of burning within the footring and the possibility that these vessels were adapted for use as open lamps seems possible. Similar trimmed samian bases occur at the rural site of Tort Hill East, Cambridgeshire (Mills 1998, 68-9), which showed blackening, potentially from a wick. A further example comes from Stockton West Moor, also a rural site, in the hinterland of York. In this case the adapted vessel is a Drag. 31R and at three points the footring wall, which is almost entirely represented, shows signs of burning; this seems to indicate that this item was used as an open lamp (cf. Willis 2005). Purpose-made ceramic lamps of the Roman era do not always display burning around the positions of their wicks



or elsewhere (cf. Vernou-Magister 1991), though this detail may be under-reported. Samian may have been preferentially chosen for making into lamps for several reasons. In particular, the highly-fired dense matrix and gloss slip are likely to have made samian much less porous to oils than was the case with other ceramic types. A range of samian forms possess footrings which could effectively become vessel walls when the vessel is inverted; relatively few other pottery types of this era had footrings. None of these adapted samian items from Quarry Farm, nor indeed any of the samian, shows signs of burning. It is conceivable then that the re-working of these vessels from the Quarry Farm site was for use as lamps, and it is of interest that these other instances are associated with rural sites. Other possibilities cannot be ruled out with the items reported here. It needs to be borne in mind too that these items represent just fragments of original bases, so evidence is thereby circumscribed. Given that such converted items had a second life, there is a further element of longevity to be factored into the currency of samian at this site. The sherd refashioned as a spindlewhorl may also be considered in this way.

8.137 There are no cases of repair apparent amongst the collection.

### ***Conclusions***

8.138 Although modest in size, the assemblage of samian vessels recovered from the excavations in fact comprises one of the largest samples from a rural site in northern Britain. This samian assemblage is dominated by 2<sup>nd</sup> century material from Lezoux. There are no examples of the otherwise widespread La Graufesenque fabric (about AD 40-110). The absence of Les Martres samian and the slight showing by items likely to pre-date about AD 150 imply that occupation at the site did not start till the mid 2<sup>nd</sup> century. On the other hand the strong showing of Antonine samian provides firm indication of occupation from the mid 2<sup>nd</sup> century. Taken on its own this pottery type suggests the site was established from about AD 140/160. If there had been occupation at the site earlier than this date, that is during the preceding hundred years, it would have been highly likely to be marked by the occurrence of samian dating to the period about AD 40-140, as items of this date are known at a range of other rural / indigenous sites in the Tees Lowlands. Acquisition of samian was greatest during the Antonine period, perhaps an index not simply of site occupation but of the peak in supply to the province at this time. Samian may well have continued to arrive at the site at a low level into the 3<sup>rd</sup> century.

8.139 Samian forms one of the more prominent artefacts recovered from the excavations. There was clearly a receptivity to samian at the site, if not a strong indication of heavy consumption. The assemblage forms the best group of samian from a villa type site in the region recovered to date. It is remarkable, given the nature of the material, and how its occurrence in site deposits conforms with the regional pattern of low quantities, that its composition is closely consistent with province-wide patterns for rural sites in terms of presence of types and the proportion of decorated ware present. Systematic study at a provincial level has shown that there is no particular difference between the proportions of decorated ware at villa type sites and non-villa sites in the countryside; Quarry Farm is in line with this

configuration (cf. Willis 2005). The overall picture it provides of supply and consumption make this material one of the key artefact types recovered by the works.

**Clay tobacco pipes** by *Daniel Still*

- 8.140 A small quantity of clay pipe fragments was recovered either from the topsoil [01; 492], modern features [145; 530] or unstratified. The clay pipe assemblage is detailed in Table 4.54

**Coins** by *Richard Brickstock*

**Summary**

- 8.141 A total of nineteen coins were recovered during the course of the investigation of the site, seven through excavation and the remaining twelve (as well as a further two non-numismatic items) through the controlled use of metal-detectors. Eighteen of these are Roman imperial issues; the remaining coin (19) is a medieval long cross penny produced during the reign of Henry III (AD 1216-73). A full catalogue is appended, ordered according to date of issue and following conventions laid down by English Heritage (Brickstock 2004).

**Catalogue**

- 8.142 See Appendix 3.166 – 186

**Discussion**

- 8.143 The main interest in the numismatic assemblage lies in the temporal spread. The only early Roman coin recovered (a worn issue of Trajan, cat. no. 1, struck AD 114-17) should be regarded as residual, since such issues could remain in circulation for many decades before their eventual deposition. The *denarius* of Septimius Severus (cat. no. 2, issued AD 196/7), however, is rather less worn, suggesting deposition relatively early in the 3<sup>rd</sup> century and thus indicating activity in the area at that time.
- 8.144 The remainder of the Roman assemblage is made up of later-3<sup>rd</sup> and 4<sup>th</sup> century issues: three coins of the period of the Gallic Empire (coins 3-5); four Constantinian coins (coins 6-9) including a reduced *foliis* of AD 312-13; and the remaining nine (coins 10-18) of the second half of the 4<sup>th</sup> century. All are relatively common issues, requiring no individual comment. The presence of three Theodosian issues (coins 16-18), however, is clearly of significance, for they indicate that this site was in occupation right up to the end of the Roman period and (given the level of circulation wear exhibited by the coins) quite possibly for some time beyond that in the early 5<sup>th</sup> century AD.
- 8.145 It should be noted that this coin assemblage demonstrates the value of the controlled use of metal-detectors in support of more formal excavation techniques, as well as the importance of the subsequent cleaning and conservation of finds: coin 17, recovered through excavation, was provisionally identified only as 4<sup>th</sup> century Roman, perhaps of the AD 350s, but careful cleaning revealed it to be of the period AD 388-402 and thus of considerable archaeological significance. The remaining two Theodosian

coins (coins 16 and 18) were metal-detector finds and both were provisionally identified as very late Roman, probably of the period AD 388-402. Cleaning allowed the confirmation and fuller identification of both, one (coin 18) proving to be an issue bearing the reverse SALVS REIPUBLICAE. The majority of coins of this type were issued in the period AD 395-402 and as such represent the very latest small change to reach Britain during the period of Roman occupation.

8.146 Generally speaking, the coins tie in well with the pottery and the remainder of the artefactual assemblage: the finds are consistent with a site developing in the late 2<sup>nd</sup> century or later, and they demonstrate a peak of activity in the 4<sup>th</sup> century, and in particular in the later 4<sup>th</sup> century. Individual stratified finds pose only minor problems:

- Coin 8, a worn coin minted in AD 330-331 appears too late for the context from which it was recovered (context 562; Phase 3c). The context, however, is less than secure and this coin should therefore be discounted as dating evidence for Phase 3c.
- Three (coins 1, 12 and 14) were recovered from contexts assigned to Phase 5a. The Trajanic issue (coin no.1) has already been dismissed as residual (though it is hard to see why it should appear in a context later than the third quarter of the 3<sup>rd</sup> century); and coin no. 14, a little-worn coin of Valentinian (AD 364-75) provides a numismatic *terminus post quem* for the phase.
- Coin 11, a *fel temp reparatio* copy of the AD 350s, was recovered from context 238, a wall foundation cut placed within Phase 5b. Coins such as this routinely appear in hoards compiled as late as AD 400, so its presence in Phase 5b is of little consequence.
- Coin 17, one of the Theodosian coins already remarked upon, provides confirmation of the late 4<sup>th</sup> century (or even early 5<sup>th</sup> century) date of Phase 5d.

### **Non-ferrous metalwork** by Dr Fraser Hunter

#### **Summary**

8.147 The assemblage of non-ferrous metals is relatively small, with 24 copper alloy items, two silver, and 40 lead items. The copper alloys are dominated by fittings (mostly undiagnostic), and are notably sparse on brooches (Table 4.58). They include a number of significant finds, notably two unusual late Roman objects: the high-status gilt bronze crossbow brooch SF 91 and the vessel handle SF 94. Both indicate an importance to the site in the late Roman period which is not evident in the small finds before.

#### **Catalogue**

8.148 See Appendix 3.187 - 251

#### **Discussion**

8.149 The crossbow brooch is of particular interest. It is a very fine and technically complex gilt specimen, and dates around or beyond the conventional end of the Roman period. The type has strong official, often military associations, a theme strengthened slightly by a possible scabbard fitting fragment (SF 51)

from the late Roman phase. However, the story is complicated, as the brooch clearly lived a long life prior to deposition in rather unusual circumstances – in a pit with Anglian pottery, associated with a dog burial. The presence of threads through the hinge hints that the brooch was stitched to a covering blanket or shroud, suggesting it could have been buried with a valued animal.

- 8.150 Ornaments are otherwise few: a single headstud brooch (SF 1), two late Roman bangles (SF 45, 93), and two intaglio rings, one in silver (SF 166, 172). Two of the unstratified finds pose tantalising questions. A hint of later prehistoric activity is provided by the mid-late Bronze Age chisel or punch, SF 144. The other is the cast funnel SF 114. Its function is not certain, but one interpretation is as a component of a small wind-blown musical instrument. This is supported not only by the form, but by the care taken in repairing the inside, perhaps to ensure a smooth surface for the passage of the air to improve sound quality. The identification must remain speculative, but is an intriguing one.
- 8.151 The copper alloys provide hints of recycling, notably in the fragments of cauldron (SF 72). Only the seam is represented, suggesting this heavily-worked portion was cut out and discarded when the rest of the cauldron was cut up for reuse. This is supported by the presence of a package of folded sheet, prepared for reuse. Casting activity is little in evidence, but there is a single piece of casting waste (SF 95) from Phase 5b, a further uncontexted one, and an intriguing piece of alloyed silver casting waste, again uncontexted, which hints at the reworking of (or conflagration involving) gilt silver. However, it seems any casting was a limited activity, as the debris is sparse and there are no crucibles or moulds.
- 8.152 The lead assemblage is an interesting one. It includes a series of biconical weights with suspension loops, often opposed (implying they could be used in combination). None has any inscription to identify their intended weight; they can be correlated with known Roman weights, although this is far from exact. Collingwood & Wright (1991, 1-5) have discussed the question of Roman weight standards, but even inscribed examples are often some distance under their supposed weight, a feature which is only partly explicable by corrosion. Table 4.59 provides possible intended values for the Quarry Farm weights. The final weight, SF 159, is kite-shaped, and may have been intended as a plumb bob or similar, rather than for metrology; it need not be Roman. The bar ingot SF 181 does not correlate with an integer ounce value, and was presumably simply a convenient quantity of pewter.
- 8.153 There are none of the large-scale lead items often found on Roman sites, such as pipes, linings or vessels. However there is extensive evidence of another of lead's main uses: as a handy medium for repairing and fastening things. Lead could be cast around clamps to hold them, or used itself for rivets and patches. The range from the site (not all stratified, but all plausibly Roman) shows a variety of expedient repairs; these would mostly be melted on the spot and cast into the necessary hole. Melted lead fragments (albeit all from metal-detecting) and offcuts support this picture of expedient lead use, while the

presence of a bar ingot of pewter indicates the working of this metal as well; although unstratified, pewter is well-known in late Roman contexts.

- 8.154 Table 4.58 shows the distribution of material by phase, but the assemblage is really too small to be confident that differences are significant. As an example, metal-working evidence appears only in Phase 5, but the presence of the cauldron fragments in Phase 6 probably relates to reuse of the sheet metal, whilst a stone ingot mould (paragraph 8.257) comes from Phase 3. There are also problems of residuality and disturbance in assessing phases; for instance, the headstud brooch SF 1 was deposited long after its normal currency, while a late Roman bangle SF 45 was found in an early context.
- 8.155 The vast majority of material is fragmentary, and was presumably either lost in use due to breakage or discarded. Notable exceptions are the brooches, with crossbow SF 91 accompanying a dog burial, as already noted, and headstud SF 1 being deposited (as an heirloom?) in a Phase 5 ditch. The intact finger ring SF 166 was found with a furniture finial SF 167 stuck in its hoop; could these represent material gathered for recycling? Recycling is also the likely explanation of the cauldron fragments, as noted, with the seams discarded when the rest of the vessel was reused. Other finds appear intact, but were presumably discarded as parts of broken composite objects; the stud SF 47 and the various lead patches and repairs. Matters are less clear with the lead weights; the iron suspension loops are broken now, but this could be due to corrosion.
- 8.156 Apart from the Romano-British and Anglian material, metal detecting threw up a small quantity of medieval finds (a strap end, buckle and decorated lead spindle whorl), confirming there was little significant later activity. However these finds, and others, emphasise the value of routine metal detecting: this produced both rings, the headstud brooch, the Bronze Age punch and most of the lead, including several weights. Without this, the story of the site would have been much poorer.

**Copper alloy technology** by *Dr Andrea Hamilton, Dr Fraser Hunter and Lore Troalen*

- 8.157 The qualitative analysis of the copper alloys allows some conclusions to be drawn and suggestions made about the availability and use of different alloys on the site. Analyses were carried out on corroded surfaces, which places limits on levels of interpretation, but broad patterns are readily discerned. Most striking is the overall picture of alloy use, with a marked dominance of bronze and leaded bronze (Table 4.60), though with only rare exceptions all included other alloying elements in small amounts. When considered in terms of technology, sheet and wire tend to have lower lead levels and castings higher levels, as would be expected for ease of working. The assemblage is too small for reliable chronological patterns, but it is noticeable that the one unusual alloy, a leaded brass, is used for the crossbow brooch; Bayley and Butcher (2004, 185) note this as a typical late Roman alloy.
- 8.158 The alloy labels define broad types, but almost without exception the alloys all contain some tin, lead and zinc, and small quantities of silver and antimony.

Nickel and arsenic are found at low levels in five or six objects, but there is no obvious pattern to this. There are some exceptions to this general alloy trend: the likely Bronze Age punch has no detectable zinc, and the same is true of SF 45, 96 and 168, while others have notably low zinc levels (SF 3, 47, 50, 51, 72, 95, 97, 139). Overall, the low zinc levels are noteworthy; Dungworth (1997, 907) has noted a similar picture in late Roman assemblages in a general discussion of northern British evidence.

**Ferrous metalwork (excluding the hoard)** by *Dr Fraser Hunter with comments by Jennifer Jones*

**Summary**

- 8.159 The iron assemblage (excluding the hoard, discussed below) comprises 129 items: 43 tools and fittings, 13 offcuts and waste from blacksmithing, 50 nails, 11 hobnails and 12 other or unidentified items. Table 4.61 summarises the assemblage by type and phase.
- 8.160 Observations made during conservation by Jennifer Jones are incorporated in the descriptions; they are marked by her initials (JAJ). All dimensions are in millimetres. With finds not from a good context, only those identifiable on typological grounds as likely to be Roman are included.

**Catalogue**

- 8.161 See Appendix 3.252 - 295

**Discussion**

- 8.162 The tools are dominated by a range of knives, but also point to more specialist craft activities. One chisel (SF 148) indicates wood-working, an activity confirmed spectacularly by the hoard (see paragraphs 8.179-8.192); the larger chisel SF 124 is probably for stoneworking. Working of leather is suggested by the awls (SF 110, 145) and the knife with curved blade (SF 146), a feature often associated with leather-working (e.g. Manning 1985a, 39). Punch SF 141 was probably used for cold working of non-ferrous metal. Two finds, the ox goad SF 99 and sickle fragment SF 106, highlight agricultural activities. The simple stylus SF 105 points to literacy on the site; it is a Romano-British type but comes from a Phase 6 context, suggesting it is residual or reused rather than indicating a continuing literary life in the Anglo-Saxon period. The only weapon is arrowhead SF 18, best seen as for hunting rather than warfare. Identifiable domestic material is sparse, comprising only three fragments of locks or keys. However, many of the wide range of fixtures and fittings will stem from domestic architecture and furnishings.
- 8.163 One of the most interesting aspects of the assemblage is the amount of evidence for blacksmithing, in particular for recycling and repair rather than primary production. There is a considerable quantity of offcuts, some comprising strips or bars prepared for reuse, but many representing the least easily-recycled elements (those with curved or other awkward shapes) which were apparently discarded rather than putting the effort into reshaping them.

- 8.164 Another striking feature is the relative absence of certain types, and in particular the low proportion of nails and hobnails. This is discussed in more detail by McLaren (below), but is atypical of Romano-British sites, which are normally overwhelmed with both. It suggests rather different ways of living at Quarry Farm, with a lack of nailed shoes and perhaps different forms of carpentry.
- 8.165 Both phases 5 and 6 show a broad range of material, but it may be queried whether the phasing reflects the period of use rather than the ultimate deposition of the material. Thus, the three large iron fittings SF 155-7 come from an Anglian context but are unlikely to reflect Anglian metalwork, instead being from the demolition of Roman-period buildings. The vast bulk of the material was fragmentary or damaged when deposited, and probably represents rubbish deposition or accidental loss; in the case of some of the tools which appear intact, it is possible that their shaft or handle had broken, as perhaps with the ox goad. However, other items were apparently deposited in full working order; knives 104 and 109, the former still in its sheath, and most of the other tools. In some cases their small size would make accidental loss easy (as with punch 141), and of course others may have outlived their usefulness, but given Hingley's (2006, 215-6) observations on significant deposits of single items and small groups, it is tempting to wonder whether knife 104, or the small associated group of finds SF 109-111 from a pit, reflect deliberate structured deposits.

#### **Nails, tacks and hobnails** by Dawn McLaren

##### **Summary**

- 8.166 Although often overlooked in reports, the humble nail and hobnail have stories to tell. At Quarry Farm, it is their relative scarcity which is the main theme of this contribution. A small number of nails (50) was recovered from 30 stratified contexts (excluding nails from the hoard, which are discussed separately below); they come overwhelmingly from Romano-British contexts. They have been categorised by head morphology and dimensions; all have square-sectioned tapering shanks and square or sub-square heads, except for three variants discussed further below. Square-sectioned tapered bar fragments with no other features have been interpreted as nails. Phase 7 and unstratified material from metal detecting has been excluded, as these could easily be much later.
- 8.167 The majority of nails are fragmentary, with only 16 intact examples. Intact lengths range from 40-78.5mm (average 56.5mm), heads measure from 6-27mm in width (average 14.5) and 2-4mm in thickness, while shank widths range from 3-8.5mm (average 5.5mm).

##### **Catalogue**

- 8.168 See Appendix 3.296 - 305

##### **Discussion**

- 8.169 The small quantity of nails recovered during excavation is unexpected. As Table 4.62 indicates, iron assemblages from Roman sites of all types, be they

rural settlements, villas or military sites, are habitually dominated by nails, both in absolute terms and as a proportion of the total assemblage. In many cases nails and hobnails are considered such a common find that they are not recorded or catalogued, with some reports commenting on only a sample of nails due to the substantial quantity recovered (e.g. Gadebridge Park villa; Manning 1974, 173, 175, Fig. 47).

- 8.170 This surprising lack of nails could be explained by several reasons. Perhaps timber saw only limited use as a structural component within the villa complex, or it was fixed using wooden pegs rather than iron nails. The quantity, range and variety of architectural and building stones from the site indicates that the villa structures were primarily composed of masonry rather than timber. Even so, the small quantity is unusual.
- 8.171 Another possibility is that iron was heavily recycled at Quarry Farm. Evidence of blacksmithing and recycling of iron is present, in the form of off-cuts, although none of these fragments are derived from nails; and nails are some of the least desirable items to recycle, because of their small size. In truth, neither of these explanations seems convincing, and the sparsity of nails remains something of a mystery. It does point to rather different practices of carpentry from the Romano-British norm.
- 8.172 Similarly surprising is the extremely small quantity of hobnails. These small nails are a typical find on Romano-British sites, and are often found in large quantities (see Table 4.62), either as single finds from inevitable wear and tear, or as groups from deliberately dumped or deposited shoes. This lack cannot be explained by chronological factors, as late Roman cemetery finds indicate that hobnailed shoes were still in regular use (e.g. Clarke 1979, 322-5). At Shiptonthorpe, East Yorkshire, however, only five hobnails were recorded (Snetterton-Lewis 2006, 234). The iron assemblage there was relatively small (although nails were plentiful), but it does suggest that hobnailed boots were not commonly worn at this site, and it seems the same was true at Quarry Farm.

### **Blacksmithing evidence and unidentified ferrous objects** *by Dawn*

*McLaren*

#### **Summary**

- 8.173 Thirteen iron objects associated with blacksmithing were recovered during the excavations.

#### **Catalogue**

- 8.174 See Appendix 3.306 - 318

#### **Discussion**

- 8.175 One of the most interesting aspects of the iron assemblage is the amount of evidence for blacksmithing, in particular for recycling and repair rather than primary production. There is a considerable quantity of offcuts, some comprising strips or bars prepared for reuse, but many representing the least



easily-recycled elements (those with curved or other awkward shapes) which were apparently discarded rather than putting the effort into reshaping them.

***Unidentified ferrous objects***

- 8.176 A number of unidentified iron artefacts were also recovered during the excavations.
- 8.177 **SF 140** *Context 86, Phase 6: L 44, W 37, T 3. Rivet D 3mm.* Two overlapping iron strips, the intact ends angled to form a wedge-shaped tip; other edges are lost. The remains of two rolled-sheet copper alloy rivets hold a leather strip; it is likely that this originally spanned the two strips to join them. Identification is uncertain. There is randomly-oriented mineralised vegetation on both faces.
- 8.178 Unidentified bar fragments were found in the following contexts: Phase 5a 719, 747, 1007; Phase 6 668 (2 items), 763. Unidentified fragments (not bars) were found in the following contexts: Phase 3a 337; Phase 3b 491; Phase 3c 1245; Phase 5a 1278; Phase 5b 1016.

**The metalwork hoard** *by Dr Fraser Hunter, with technical notes by Jennifer Jones*

**Summary**

- 8.179 The hoard was found in an isolated pit, F.335, one of a group of pits in area D. The material was tightly packed, but with no trace of a container; there were no other finds from the feature. It was lifted in a block and excavated in the laboratory; technical observations made during conservation by Jennifer Jones are initialled (JAJ). The iron in particular was very fragile, and while the vast majority of objects clearly went into the ground intact, in a few cases tips are now lost. As the pit was isolated and lacked stratigraphic links, its phasing is uncertain, and the items in the hoard are not sufficiently diagnostic to refine the dating beyond Romano-British. A worked bone fragment from a tool handle was submitted for radiocarbon dating, but unfortunately proved unsuitable. However, the bulk of evidence from the site suggests peaks in the Antonine and late Roman periods (later 3<sup>rd</sup>-4<sup>th</sup> century), and it is tempting to assign the hoard to the latter, in common with other villa hoards from Yorkshire at Beadlam and Dalton Parlours, both late 4<sup>th</sup> century in date (Neal 1996, 18, 52-7, fig 18; Scott 1990). I am grateful to Prof W H Manning for valuable comments on a draft of this report. The items have been renumbered with a single running number sequence.
- 8.180 There are 53 items in the hoard, plus a few fragments of leather straps. Ironwork dominates, with two copper alloy mounts and a single lead weight. The vast majority of material appears to have been in usable condition when it was discarded, and it was clearly not a scrap hoard. It comprises a mixture of tools and fittings, much of which can be related to carpentry. The bulk of the diagnostic tools are wood-working tools, and the bulk of the fittings could also be used by a woodworker. There is also evidence of leather-working and the finishing of metal objects, although the latter may relate to either fine woodwork or composite items, as discussed below. As with all such hoards, we know little about the criteria for inclusion. The find clearly does not

represent the complete toolkit of any craft-worker; for instance, in terms of wood-working, there are no axes, saws or plane blades, no draw-knives or spokeshaves, and only a single chisel. However, while the selection processes behind the hoard are unclear, the overall balance of material is at least worth exploring for clues.

- 8.181 Table 4.63 summarises the contents of the hoard. It is the tools which are the most striking feature: of the 18 in the hoard, nine are clearly or most likely linked to carpentry, and four to leather-working. There are also three fine files, which are typically metal-working tools (Manning 1985a, 11). However, post-medieval and modern carpentry practice involves occasional use of files (Salaman 1975, 194-5); given the absence of other metal-working tools, it may be speculated that these files were either for fine finishing of wood or of metal in composite items. The majority of tools (12 out of 18) have traces of handles of wood, bone or (for the knife) horn. Not all the wood species could be identified, but the use of ash, alder and fruitwood is attested. None of the tools show any use-damage.

### *Catalogue*

- 8.182 See Appendix 3.319 - 375

### *Discussion*

- 8.183 A good range of tools is represented, including some rare types. For basic shaping there is an adze-hammer, a well-known Roman type. More unusual is what seems to be a discoidal adze, with a blade edge around two-thirds of the circumference. This suggests a use in hollowing the inside of quite tight curves, but it is a highly unusual form, with no parallels known to the writer. Further shaping would be carried out with chisels and hollowing tools such as gouges. Only a single chisel is represented, its relative fineness suggesting it is a paring chisel, which was a finishing tool (Manning 1985a, 21-2). The single drill-bit is a fairly conventional form.
- 8.184 The pruning hook would generally be catalogued as an agricultural tool, although Rees (1979, 450-1) notes that a range of functions are possible. It could readily have been used for shaping, and here the context may suggest a wood-working role. A more specialist tool is the cooper's croze, used for cutting grooves inside the ends of stave-built vessels to accommodate the heads (Salaman 1975, 319-321, Fig. 235b). It is a rarely recognised type, and to find two in this hoard is remarkable; there are a number of Romano-British parallels (Hedges & Wait 1987).
- 8.185 Among the files is a classic carpenter's tool, a coarse-toothed float with offset handle; Manning (1985a, 28-9) cautions that the type was also used by farriers, but in this context it seems clear it was a carpenter's implement. The other files are not in sufficiently good condition to identify their teeth, but they must have been fine. They comprise one flat and two different sizes of half-round files. As noted above, these are typically metal-working tools, but the lack of other metal-worker's tools in the hoard suggests here their use was for fine finishing of wood or the fitting of metal components. There are two likely

bradawls in the hoard, which would have served to make small pilot holes for nails, and a small number of nails was also found.

- 8.186 Leather-working is also attested, with an awl, a circular punch, and two large awls or punches. As with the metal-files, this may represent the necessary 'transferable skills' for a woodworker to make complex objects, but they could equally represent craftworkers skilled in several crafts, or a range of artisans. Leather is also attested by the presence of a buckle loop and three surviving leather strap fragments in the hoard.
- 8.187 The hoard also includes a steelyard. A lead disc weight may be linked to this, although its weight does not conform to standard Roman ounce-values. Instead it may be a plumb-bob; although not one of the typical forms, it would function satisfactorily. These were commonly used by carpenters (Ulrich 2007, 53).
- 8.188 The remainder of the hoard comprises fixtures and fittings; apart from the buckle, all the recognisable ones could have been used as fittings for wood, supporting the carpentry argument. Most diagnostic are fittings from the hubs (naves) of wheels: a hoop to bind the end of the nave, and three linings to reduce wear from the axle, with wings to embed in the nave and hold them in place (cf. Manning 1985a, 71-2). One of the linings was only a fragment, retained presumably to reuse in another function.
- 8.189 The other fittings point to a range of products, emphasising that this represents a general toolkit for the kind of everyday carpentry which a large farming estate would require. Thus, there is a limited range of structural ironwork, comprising a pair of door hinge fittings, a possible door pivot and loops to be fitted into timbers. Most of the other fittings are functionally undiagnostic, such as the collars, ferrule, staple and strips, but the two large ring handles are likely to come either from a door or a vessel, while another handle was intended for a coopered wooden vessel, although its form indicates it had not been fitted to one. This perhaps suggests that blanks for such items were made by the blacksmith, and later adapted to the specific vessel. The only copper alloy finds were two sheet mounts from organic objects, one an edge-binding. One fitting, a tanged slotted object, has so far denied ready parallel.
- 8.190 Only a few nails were present, five T-headed and three square-headed. This contrasts with the wider site assemblage, where the latter dominate, suggesting the more unusual nails were treated rather differently in the hoard. All show signs of removal, and this evidence of reuse and repair is seen also in the fragment of hub lining which had been curated, and a folded strip of iron, ready to be used for another task. In contrast, the unfitted vessel handle points to the manufacture of items from scratch as well. This supports the idea of general purpose carpentry, with both manufacture and repair, alongside some leather- and metal-working. The mixture of material is quite typical for ironwork hoards, which generally contain the tools and fittings of a range of crafts and activities. However, here the range makes sense as derived from a workshop on the site which could turn its hand to a variety of tasks.

- 8.191 There have been a number of studies of the phenomenon of ironwork hoarding in Roman Britain (notably Manning 1972; Hingley 2006), although sadly not all of the material is well-published. While most northern hoards are of later 1<sup>st</sup>–2<sup>nd</sup> century date, excavations at other Yorkshire villas have produced late 4<sup>th</sup> century hoards, from a well at Dalton Parlours and a room in the villa at Beadlem (Scott 1990; Neal 1996, 52-7); the previously clear trend for early northern hoards and later southern ones appears to be dissolving. Most ironwork hoards contain items representing a mixture of tools and activities, although it is argued here that Quarry Farm is a rather more coherent assemblage than many other such finds. The question of motives behind the deposition of such hoards has seen recent debate (e.g. Hingley 2006) but sadly, despite being well-excavated, Quarry Farm does not throw much light on the reasons behind its deposition. It sits in an isolated pit, hard to relate to its surroundings, although it does not obviously fall into the categories of ‘significant locations’ which Hingley has discussed, such as boundaries or deep pits; neither does it have a connection to the foundation or abandonment of a building.
- 8.192 While some objects were removed during initial excavation, and others became detached prior to conservation, enough survived to show that there was a definite order to the burial of the hoard. At the bottom was the buckle, followed by the wheel fittings, with the door pivot placed over one edge of the uppermost nave lining. This was followed by a mixture of material, including the knife, one bradawl, a double-spiked loop and a staple, before the two adzes were placed in, both with the sockets uppermost. This was followed by the bulk of the smaller tools – the three files, the float, one croze, the chisel and the spoon bit, as well as the staple. Thus, there seems to be both a practical logic to the packing (with the big cumbersome items at the base), but also some functional separation, with the wheel-related items at the base, the bulk of the tools at the top, and most of the fittings in between.

**Animal bone** by *Louisa Gidney*

**Summary**

- 8.193 Extensive area excavation of the environs of the villa produced an assemblage of six standard long boxes of animal bones. The assemblage is comparatively small for two main reasons. Firstly, the excavation strategy was determined by constraints which precluded emptying large sections of ditch fills, which are standard repositories for domestic refuse, containing animal bones and carrion carcasses. The higher organic content of ditch fills usually enhances the preservation of animal bones. Secondly, the soils on this site are not generally conducive to the survival of animal bone, with even cattle teeth being reduced to splinters of enamel. Odd pockets of contexts such as flue and drain fills give a tantalising glimpse of the smaller species that were present on the site. The largest and best preserved group of bones was recovered from the Anglian, Phase 6, group of pits. Like ditch fills, the organic content within the pit fills has produced a comparatively benign burial environment. The less than ideal preservation of bones on this site means that the residuality seen for the pottery, of earlier sherds contributing a large proportion of the pottery finds from Phase 6, cannot apply to the bones. Any disturbance and redeposition of bones on this site would have rendered them unidentifiable.

Over a third of the contexts containing animal bone produced indeterminate fragments.

- 8.194 The greater part of the assemblage derives from the late, or post, Roman phases 5a-c and the Anglian Phase 6. Animal bones were recovered from all the Romano-British phases 3a-d and 4 but were absent from the prehistoric phases 1 and 2. The finds under consideration were all recovered by hand during the excavation. An extensive sampling programme was undertaken for botanical remains but no faunal remains were noted in the residues.

### ***Results***

- 8.195 See Appendix 3.376 – 414

### ***Discussion***

- 8.196 Quarry Farm has produced an assemblage of animal bone that suggests the occupants were largely self sufficient in the production and consumption of cattle, sheep and pigs. The sparse ageing data suggest meat from prime animals, not merely culls from the plough and the dairy. The horse may not have been an agricultural animal in the recent sense. The parity of horse bones with those of pig, and the presence of chopped horse bones among other food debris, raises the possibility that horses were another animal kept for the table. Apart from one dog burial, which may have been accorded special treatment, evidence for dogs on this site is particularly sparse. Little use appears to have been made of wild resources, principally the collection of shed antler and one episode of venison consumption. Evidence for high status dining, which might be expected from the nature of the site and the presence of a bath house, is confined in the Roman phases to a single fish bone. This is partly a product of preservation, with bones of sucking pig, for example, being unlikely to survive. Poultry, both goose and domestic fowl, are associated only with the Phase 6 Anglian occupation.
- 8.197 The Quarry Farm assemblage is of particular interest in suggesting a small change in emphasis in the species proportions of the bones deposited between Phase 3 and phases 5-6. No such change is apparent between the late Roman Phase 5 and Anglian Phase 6. Phase 5 is notable for the partial bodies of sheep and pig recovered. These suggest a form of structured deposition absent from phases 3 and 6. The association of the same skeletal elements of cattle and horse, exhibiting the same style of butchery marks, from one context raises the possibility of hippophagy on this site during the Phase 6 Anglian occupation. This find raises the prospect that the well-known phenomenon of horse bones occurring in similar numbers to those of pig should be re-evaluated to determine how widespread this practice may have been.
- 8.198 Comparison with the late Roman house and Anglo-Saxon field ditches at Newton Bewley, Hartlepool, is not straightforward as the types of features producing animal bones differ. The species lists are broadly comparable, with the majority of fragments from domestic farm animals. Quarry Farm has a fish rather than shellfish. Dogs appear to have been much more common at Newton Bewley, with roughly a fifth of the late Roman house assemblage exhibiting gnaw marks. Horse bones were both chopped and chewed so it is

not clear whether people as well as dogs were eating horse. Red deer is exclusively indicated by skull and antler fragments, some of which appear to have been trophy heads. Faunal exploitation appears to have been broadly similar on both sites, allowing for differences in preservation and feature type.

**Worked bone** by *Dr Fraser Hunter*

- 8.199 Only two worked bones were recovered, both undiagnostic roughouts.
- 8.200 **SF 227** *Context 271, Phase 5a: 68 x 20.5 x 6.5mm.* Roughout. Portion of rib (probably cow), cut transversely at both ends to create a slightly tapered rectangle. There are faint knife-cut marking-out grooves at one end and 7mm from the other. It is unclear what the intended product was.
- 8.201 **SF 228** *Context 911, Phase 5c: L 149, end W 30, shaft W 24mm.* Roughout. Cattle metatarsal, ends damaged, with longitudinal knife-cut facets on the surface. Minimal modification, abandoned early in production sequence.

**Glass** by *Prof. Jennifer Price*

**Introduction**

- 8.202 A small quantity of Romano-British glass totalling 38 pieces was found during the excavations in 2003. Of these, three were objects and 35 were from vessels, representing a minimum of seven pieces of tableware (including a large dish or plate and at least three drinking vessels), one jug or handled jar and five containers, one cylindrical and probably four prismatic bottles.

**Catalogue**

- 8.203 See Appendix 3.416 – 433

**Discussion**

- 8.204 There is little evidence for the use of vessel glass before the construction of the winged corridor house around the middle of the 2<sup>nd</sup> century, apart from one yellowish-brown melted lump (no 2), perhaps from a late 1<sup>st</sup> or early 2<sup>nd</sup> century vessel, and a small fragment from a cylindrical bottle likely to have been in use in the late 1<sup>st</sup> century (no 9). The prismatic containers (nos 10-13) are forms that were used in the late 1<sup>st</sup>, 2<sup>nd</sup> and early 3<sup>rd</sup> century and most of the tablewares (nos 3-7) belong to the later 2<sup>nd</sup> or 3<sup>rd</sup> century AD, although one spectacular dish or plate dates from the 4<sup>th</sup> century (no 1). By contrast, the objects, two bangle fragments (nos 16-17) and one bead (no 18), are likely to belong to the pre-villa occupation phases of the site, the bangles being of late 1<sup>st</sup> or early 2<sup>nd</sup> century date and the bead a late pre-Roman Iron Age or early Roman type.
- 8.205 The fragments provide a little information about processes of deposition as well as the chronology of glass use. Most were found in deposits more or less contemporary with their period of production and circulation, but some came from residual contexts, indicating episodes of disturbance and redeposition. Deliberate collection of broken glass on the site for recycling is also probable, as the surviving fragments are generally small and the vessels are represented by a single fragment, apart from nos 1, 4 and 5, each of which was probably

deposited in three pieces although later devitrification in the case of no 1 caused two of the pieces to disintegrate.

- 8.206 Most of the glass found in the region has come from military or urban settlements, such as Catterick (Cool *et al.* 2002) and Piercebridge (Cool and Price forthcoming). Finds from rural settlements similar to Quarry Farm are rare, apart from the material at the villas at Dalton on Tees (unpublished) and Holme House near Piercebridge (Cool and Price forthcoming) villa sites. The groups of vessel glass from these sites are also quite small and the range of forms is broadly comparable with those at Quarry Farm, although no late Roman glass was found at either Dalton or Holme House. Twelve vessel fragments came from Dalton (five from 2<sup>nd</sup> and 3<sup>rd</sup> century colourless tablewares, including a piece with snake-thread decoration, two from bluish-green table or household vessels and five from prismatic containers) and 78 vessel fragments from Holme House (71 from a minimum of eight 2<sup>nd</sup> and 3<sup>rd</sup> century colourless drinking vessels, four from bluish-green table or household vessels and three from prismatic containers). The range of vessels and degree of fragmentation among the Dalton fragments was similar to that at Quarry Farm, but the drinking vessels at Holme House included early-mid 2<sup>nd</sup> century examples with cracked-off rims and wheel cut lines as well as ones with fire-rounded rims dating from the later 2<sup>nd</sup> and 3<sup>rd</sup> century, and substantial parts of several of the drinking vessels survived.
- 8.207 Only a very limited range of glass vessels appears to have been present at any of these villas, by contrast with the variety of 2<sup>nd</sup> and 3<sup>rd</sup> century glass tablewares found at nearby settlements such as Piercebridge or Catterick. Apart from one fragment from a small jug at Quarry Farm (no 3) all the tablewares found were used for drinking, while the containers came to the sites as packaging for commodities, probably liquid or semi-liquid foodstuffs. It is difficult to see this as simply a problem of supply, particularly in the case of Holme House; it may relate to the preferences of the occupants or to the status and availability of glass within the region.
- 8.208 It is worth noting that a small quantity of matt-glossy window glass was found at both Dalton (nine fragments) and Holme House (29 fragments) whereas none was recorded at Quarry Farm. This absence is interesting as windows in some parts of the villa buildings, such as the *caldarium*, would almost certainly have been glazed, though it is perhaps possible that the panes were carefully removed, leaving no archaeological trace, when the villa buildings were demolished at Quarry Farm.

### ***Typological discussion***

#### *Late 1<sup>st</sup> to mid 2<sup>nd</sup> century tablewares (no 2)*

- 8.209 As explained above, there is almost no evidence for the use of vessel glass of this period, but the dark yellowish-brown colour of no 2, a completely melted fragment with a deposit of ash on one surface, is mentioned here because it is similar to the colour sometimes used for sagged ribbed bowls found in late 1<sup>st</sup> century contexts and blown tubular rimmed bowls, globular jars and long necked jugs produced in the northwestern provinces at this time and in the early-mid 2<sup>nd</sup> century (see Price and Cottam 1998, 44-6, 78-80, 137-8, 150-5

for the forms). Most of the examples of these vessels found in northern England were made in bluish-green glass, and dark yellowish-brown blown fragments are not common in the region, though a few are known from sites occupied early in the Flavian period, such as Binchester and Annetwell Street in Carlisle (both unpublished), and occasionally in later contexts, as at Birdoswald (Price and Cottam 1997, 347 no 4, Fig. 248).

*Later 2<sup>nd</sup> to mid 3<sup>rd</sup> century tablewares (nos 3-8)*

- 8.210 The yellowish-green jug with small everted rim and thick D-sectioned rod handle with folded thumb-rest (no 3) is not easy to identify or date precisely because so little survives and the handle form occurs on jugs at several periods. Several are known from Colchester; for example, there is a small conical jug from a late 2<sup>nd</sup> century burial (May 1930, 279 grave 93, pl 86), and pale green and bluish-green handle fragments came from late 1<sup>st</sup> and 3<sup>rd</sup> century contexts at Balcerne Lane (Cool and Price 1995, 140, 142 nos 1007 and 1125, Figs. 8.8, 8.11). Similar handles also occur on some late Roman jugs (eg Price and Cottam 1998, 167-8) but the colour and quality of the glass of this piece suggest that it belongs to an earlier period, probably the later 2<sup>nd</sup> or 3<sup>rd</sup> century.
- 8.211 At least two colourless cylindrical cups (nos 4-6) were noted. The complete cups represented by nos 4-5 had a fire rounded rim and narrow horizontal marvered trails applied to the upper body, change of angle and base and no 6 is from a cup with a similar rim and double base ring but without trailed decoration. These cups were by far the commonest forms of tablewares in Britain in the last third of the 2<sup>nd</sup> century and they continued to be used in the early to mid 3<sup>rd</sup> century (see Price and Cottam 1998, 99-103 for the forms). They occur at a wide variety of military, urban and rural settlements throughout Britain and are particularly common in the northern frontier region. Considerable numbers have been found at some larger settlements, such as Catterick where at least 26 vessels were found (Cool *et al.* 2002, 212), and Piercebridge where at least 61, representing 50% of the 2<sup>nd</sup>-3<sup>rd</sup> century glass assemblage, were noted (Cool and Price forthcoming). Fragments of these cups were also recorded in the small glass groups from the Dalton on Tees and Holme House villas.
- 8.212 The everted fire-rounded rim fragment (no 7) comes from a form of colourless drinking vessel produced at a slightly later period than nos 4-6. The surviving piece is small and undecorated and the convex cup or beaker it came from may also have been undecorated, but could equally well have had bands of abraded lines or pinched points, or both, on the body (see Price and Cottam 1998, 112-3). These vessels belong to the 3<sup>rd</sup> century and occur in numerous settlements in northern Britain, including Piercebridge and Binchester, although a considerable group of them were deposited as grave goods in the 3<sup>rd</sup> century cemetery at Brougham in Cumbria (Cool 2004b, 366-9).
- 8.213 The bluish-green convex body fragment (no 8) is interesting because so few household vessels were found, but little can be said about its form or date except in very general terms. It is from a thin walled vessel which either tapers in towards a folded base, in which case it might be from a small bowl or



jar, or expands out from the base of a neck, in which case it might be from a jug or flask, and its colour and quality suggest that it was produced between the late 1<sup>st</sup> and 3<sup>rd</sup> century.

*Bluish-green containers (nos 9-13)*

- 8.214 Five small body fragments of late 1<sup>st</sup> and 2<sup>nd</sup> century blue-green containers were noted, and as each piece is visually distinct it has been assumed that they come from five vessels, one with a cylindrical body and four with prismatic, probably square, bodies. The cylindrical fragment is from a bottle, and the prismatic ones have been accepted as bottles, though they could also come from jars (see Price and Cottam 1998, 135-6, 191-202 for square jars and cylindrical, square, hexagonal and rectangular bottles).
- 8.215 Vessels of this kind were used to contain and transport liquid and semi-liquid substances, and were produced in vast numbers and a wide range of sizes in Britain and elsewhere in the Roman world, particularly in the western provinces. The cylindrical bottles belong principally to the later 1<sup>st</sup> century, as they disappeared fairly early in the 2<sup>nd</sup> century, whereas prismatic bottles were produced from the middle of the 1<sup>st</sup> century until the late 2<sup>nd</sup> century and some continued in circulation into the 3<sup>rd</sup> century. These bottles are extremely common finds in military and urban contexts where they often account for 50% or more of the glass vessel finds, but they are less common in rural settlements. The presence of a very small number of containers at Quarry Farm, and at Dalton and Holme House, suggests that the occupants of these rural settlements had some access to foodstuffs through military or urban supply networks, but not that this was a very frequent occurrence.

*Late Roman tableware (no 1)*

- 8.216 Seventeen fragments from a large almost colourless shallow dish or plate with concentric polishing marks on both surfaces and thin sections of twenty polychrome mosaic canes embedded in the upper surface were found in two separate contexts, one dated to the 4<sup>th</sup> or early 5<sup>th</sup> century, and these have been restored in three pieces. The canes have six very detailed floral patterns in brilliant colours, including translucent blue, green and turquoise, and opaque white, red, yellow and green, and some are linked to lengths of pale green curving strips. The surviving pieces show an overall design of curved stems and flowers, some resembling daisies, tulips and poppies, with an area of brick red and yellow curving wavy strips and small yellow and green roundels. The polishing marks and varying thickness of the glass indicate that this was a circular dish which appears to have been sagged over a former and then ground on both surfaces, but the original dimensions of the vessel are unknown.
- 8.217 This is an exotic piece tableware which falls outside the normal repertoire of late Roman glass vessels in Britain and elsewhere in the north-western provinces. At this period, the majority of tablewares in the region were made in either greenish rather bubbly glass decorated with abraded bands or trails and blobs, contrasting colours sometimes being used for the blobs and trails, or colourless glass decorated with wheel cut designs or figured scenes. Some of the second group were very high quality vessels; they include vessels with

very deep cutting (*diatreta*) and some of these had bands of different coloured glass applied to their outside surface (see Harden *et al.* 1987, 210-12, 226-237, 240-1 for pieces from the Rhineland and northern Gaul). However, the presence of polychrome mosaic canes in late Roman tablewares in the western provinces is very unusual.

- 8.218 One other piece, a very small colourless fragment with a thin section of translucent green and opaque yellow cane, came from a Romano-British settlement at Vineyards Farm, Charlton Kings, Gloucestershire (Price 1991, 71-3 no 1, Fig. 25), but I do not know of other examples in the western provinces. A shallow light green mould-blown bowl found in Dorchester, Dorset has individual polychrome mosaic canes set into cells in the design in the outside surface (Cool and Henderson 1993), but this belongs to a rather different production tradition.
- 8.219 Large late Roman dishes and plates with thin sections of polychrome mosaic floral canes and curving stems arranged in naturalistic designs on the inside surface are known from Egypt, and some of these are colourless. They have come from Karanis (Harden 1936, 88-9 nos 191-2, pl 13) and in 4<sup>th</sup> or early 5<sup>th</sup> century contexts from Douch in the Kharga oasis in the Western Desert (Nenna 2002, 155-8). The Quarry Farm vessel appears to belong to this tradition of manufacture and may well have had its origin in Egypt, though whether it reached the villa in northern Britain as a whole vessel or as curated fragments is debatable, since some of the broken edges may have been re-worked and were perhaps deliberately cut and shaped after breakage. It is therefore possible that the vessel was broken before it reached Quarry Farm, although the presence of three non-joining fragments, and their discovery in more than one context suggests that the event occurred on Teesside.

### **Objects**

#### *Bangles (Nos 16-17)*

- 8.220 The two bangle fragments are likely to have been produced in the late 1<sup>st</sup> or early 2<sup>nd</sup> century. Fragments of glass bangles are found in many parts of Britain at this period and they are particularly common in northern England and southern Scotland where hundreds of pieces have been recorded, although complete bangles are rare. They have been studied on several occasions (for example, Kilbride-Jones 1938, Stevenson 1956, 1976, Price 1988) and have generally been classified as three principal types. No 17 is from an opaque white bangle of type 3A, which may belong to the early 2<sup>nd</sup> rather than the late 1<sup>st</sup> century. Several examples were found at Catterick (Price 1988, 363 nos 54-8, Fig. 19.3) and some are also known at the sites of other villas in Yorkshire, as at Dalton Parlours, Collingham, and Rudston (Price 1988, 363-4 nos 59, 63-6, Fig. 19.3).
- 8.221 No 16, however, is a rather unusual bangle. It does not fit readily into the tripartite classification, as the dark blue ground, narrow opaque white and yellow thin trails and blue and opaque white twisted cords are characteristic of both type 2 and type 3I and 3J bangles, although the twisted cords on type 2 bangles are not marvered flush with the convex surface. On balance, the piece may be accepted as a type 2 variant and as generally comparable with a

fragment from a very large dark green bangle with three diagonal blue and opaque white marvered cords and edge trails from Wetwang in East Yorkshire (Price 1988, 363 no 49, Fig. 19.2), but it is becoming clear that, at least in Yorkshire, there is greater diversity in the range of colours and combinations of decorative motifs on the bangles found than can readily be accommodated in the traditional typology. It is worth noting that the treatment of the twisted cords on no 16 may also be linked with some early Roman beads which have similar cords arranged in loops and marvered flush with the outside surface; these have occasionally been recorded in northern England (Guido 1978, Class 9, 76-9, 182-7).

*Bead (No 18)*

- 8.222 Opaque yellow annular beads similar to no 18 are known to have been produced in at least two periods: late Iron Age and early Roman Britain, and Anglo-Saxon England. The bead at Quarry Farm was found in a Phase 4 context (3<sup>rd</sup>–mid 4<sup>th</sup> century AD) and it is closely comparable with other class 8 beads (Guido 1978, 73-6, 179-82). The earliest examples occur in 2<sup>nd</sup>-1<sup>st</sup> century BC contexts in southern England, particularly at Meare in Somerset, and similar beads are also found in brochs, wheel-houses and souterrains in Scotland. Similar beads are also known from Romano-British military and civil settlements in the northern frontier region, as at Corbridge, Halton Chesters, Housesteads, South Shields and Camelton (unpublished). It therefore seems reasonable to accept this as a Romano-British object, although it is noteworthy that the opacifier used is lead / tin oxide<sup>1</sup>, rather than antimony which is characteristic of the Iron Age beads, which implies a production tradition or source of glass linked to the later, Anglo-Saxon bead production.

**Geological stone identification** by Ken Sedman

*Stone assessed on site*

- 8.223 A large number of stone blocks had been excavated from the archaeological site and were available for study. These were all derived from the heated room feature. Most of the blocks appeared to be unworked although at least one had typical (metal) tooling marks. Most of the stone on site had been excavated from walls and floors.
- 8.224 During the visit to site an inspection of the nearby Barwick Quarries was also made and samples collected. The quarry is less than 100m from the archaeological site.

**Results**

- 8.225 See Appendix 3.434 - 442

**General conclusions on rock types**

- 8.226 Most items exhibit properties consistent the Triassic Sherwood Sandstone group of rock types. This is exposed in the nearby quarry.

<sup>1</sup> I am grateful to Phil Clogg, dept of Archaeology, Durham University for providing this information

- 8.227 A small number of items were calcareous evaporites or limestone deposits. These are from the nearby Permian deposits found to the north of the river Tees beneath the glacial drift cover. Large boulders of this material turn up in the glacial drift in the Tees Valley, notably around Eaglescliffe a few miles to the west.
- 8.228 A number of dolerite pebbles were identified. These are certainly from the nearby Cleveland Dyke but may have been transported to the site by ice flow rather than deliberately since none of them appear to have been worked.
- 8.229 The few other igneous rocks probably occurred as glacial pebbles on the site.
- 8.230 Only two of the sedimentary rocks may be non-local, those comprising the coarse suite numbers 1092, 879 & 720. These are all part of the same thin quern stone. These are much coarser than identifiably local rocks so the quern may have been imported as a pre-made grinding stone.
- 8.231 The other item is the fine grained quern stone 720 (number same as above but whole quern not boxed). This is very fine, very hard sandstone that is more like the Carboniferous sandstone of the Pennines than the locally coarser Triassic sandstone, so may represent an import. It is very finely made.

***Role & relevance of the Cleveland Dyke to the archaeological site***

- 8.232 The occurrence of the Cleveland Dyke near to the excavated site has probably played a major influence on the use of local stone. Because of its greater resistance to glacial erosion the Dyke will have been left as an upstanding area effectively exposed through the covering of glacial drift. Its resistance will have also protected the local Triassic rocks on either side which elsewhere on the surrounding Tees Plain have been eroded down and covered by substantial thicknesses of glacial drift.
- 8.233 Consequently this is one of the very few sites in the Tees Plain where usable building stone was readily available, which no doubt explains its abundant use there. Some of the sandstones adjacent to the dyke will have been slightly altered (metamorphosed) by the intrusion of the molten dyke rock. These may represent some of the examples used for querns that require harder stone.
- 8.234 There is no evidence that the dolerite from the Cleveland Dyke itself was used although several seemingly unworked pieces were found on the site.
- 8.235 The dyke has influenced the course of the River Tees that meanders quite abruptly at this point. It may have provided a shallower crossing point on the river, thus providing yet another reason for a settlement to be established.
- 8.236 The only other sources of stone would have been across the river at other Cleveland Dyke sites around Preston Park cutting the same Triassic deposits; the coast (more Triassic) or Cleveland Hills escarpment (Jurassic strata) several miles away, or further up river towards Croft & Neasham, near Darlington. It is unlikely that any other stone would have been brought in from distant sites to be used for building.

**Lithics** by *Dr Rebecca Scott*

**Method of analysis**

- 8.237 All artefacts were examined and the following variables are recorded in Table 4.70; length, width and thickness (mm., using principle of minimum square), portion, knapping pattern (unidirectional, bi-directional or multidirectional), raw material, mode of percussion, degree of patination, abrasion, and edge damage. Following Ashton and McNabb (1996), the following technological indicators were also recorded; number of dorsal scars and type of butt. Core episodes, relict core edges and number of removals were noted, together with any form of platform preparation. Any subsequent retouch was noted, along with any typological classification and other notable features.

**Taphonomy**

- 8.238 In the course of the excavation, 230 struck flint artefacts were recovered from the site, the vast majority of which were recovered from contexts containing artefacts indicative of post-prehistoric date. The vast majority of the assemblage was unabraded (96.4%), and either entirely undamaged (40.5%) or bearing very light edge damage (44.6%). Most of the material was unpatinated or only lightly so (54.4% or 29.2% respectively), and only 4.5% of the material exhibited any staining. However, chemical alteration of the surface of flint is a poorly understood process and not, as frequently supposed indicative of relative date, but probably merely of differences in chemical burial environment. In addition, 13.5% of the assemblage has been burnt to some degree, ranging from light scorching to complete heat fracture, obscuring dorsal flake scars or retouch. The condition of the assemblage as a whole is potentially indicative of minimal reworking of the material and incorporation into later features close to the original area of prehistoric activity, indicating prehistoric use of the site or an area nearby not attested by the presence of earth-cut features within the area of the excavation.
- 8.239 Few artefacts are present within the assemblage which are typologically indicative of a particular date and those which could be described as such are not restricted to particular features or areas of the site. Technologically very different methods of flintworking are also apparent, ranging from dedicated blade production using careful platform maintenance (typical of Mesolithic or Early Neolithic flintworking) to casual core reduction associated with frequent knapping errors (typical of the Middle Bronze Age onwards; Edmonds 1995). A complicating factor which may have contributed to the technologically mixed nature of the sample is the raw material, which has been used to produce artefacts of all types. Although this cannot be determined for the majority of the assemblage (62.9% of these artefacts do not retain any cortex), those artefacts which do retain cortex indicate the use of small, fluvial or glacially rolled flint and chert pebbles. This material necessarily imposes limits upon how well it can be worked, as such clasts are small and prone to fracture along existing faults. These pebbles clearly could be carefully worked, as some of the blades present within the sample show, but one cannot distinguish whether the less carefully worked cores and debitage are the result of later prehistoric activity or simply more casual Mesolithic or Early Neolithic flintworking. As such, and given the fresh condition of the material,

the assemblage has been treated as a dispersed whole, largely unselectively incorporated into cut features of later date, and reflective of a variety of prehistoric activities in the area of the site.

### ***Technology***

- 8.240 An examination of approaches to lithic reduction represented within the assemblage suggests that flintworking was undertaken at the site from the Mesolithic - Early Neolithic onwards. Distinctions have been drawn between later prehistoric industries on the basis of regularity of blade or flake production (Pitts and Jacobi 1979; Ford *et al.* 1984). Dorsal scar count, scar pattern and butt type on debitage all provide evidence for this, as do flake dimensions and analysis of cores. Summarised briefly, there is a linear trend from the late Mesolithic through to the late Bronze Age (and indeed, Iron Age) away from narrow, parallel flakes or blades. These are reduced from unipolar or bipolar cores of high quality raw material, using careful core maintenance and platform preparation. Later industries are characterised by broader, thicker flake production with larger platforms from multi-platform cores of substandard raw material; knapping errors are frequently apparent, attested by incipient percussion cones on platforms and surfaces, together with frequent hinge and step fractures (Edmonds 1995). Although such contrasts are obviously mitigated by local conditions and contexts of tool production, it remains a useful guide to interpreting later prehistoric lithic assemblages, particularly in the absence of diagnostic tool forms.

### ***Debitage***

- 8.241 The majority of the debitage recovered from the site is very small in size (Table 4.71), 90% being less than 40mm in maximum dimension. Whilst clearly resulting from the nature of the small clasts of raw material from which the majority of the assemblage has been produced, this may also reflect the fact that a proportion of the assemblage results from the production of small blades, technologically typical of Mesolithic or Early Neolithic flintworking. In addition, some 28% of the material recovered is smaller than 20mm in maximum dimension, reflecting an unusually good degree of recovery for a hand-excavated assemblage.
- 8.242 The flakes and blades which comprise the majority of the flint assemblage attest to a number of different approaches to flintworking; these complement the patterns evident from the cores recovered from the site (see below) and shed light upon the earlier stages of reduction prior to the discard of these cores. The majority of the debitage was technologically and typologically undiagnostic; however, despite the poor quality raw material used, some carefully produced blades were recovered (15.7 % of the assemblage - see Table 4.71; only technological, not metrical blades were counted amongst this sample – i.e. those showing evidence for platform preparation and more than two previous elongated flake scars). Production of such blades is typical of the Mesolithic and Early Neolithic. Given the undiagnostic nature of the majority of the assemblage, however, these blades are significant in indicating a Mesolithic or Early Neolithic presence at the site which is not apparent from the cut features excavated.

- 8.243 All but one of the blades retained no residual cortex. As such, it is impossible to determine the source of the raw material used, and is therefore possible that better quality material, allowing a greater degree of control to be exerted, was used for blade production. The remainder of the flake assemblage may represent the result of a more casual response to the use of poorer, locally available raw material. However, it is impossible to disentangle whether this is in fact the case, or whether the material which reflects poorer control of flaking was produced at a later date, when dedicated techniques for producing blades were no longer used.
- 8.244 The nature of the debitage provides further evidence for both the type of the raw material used and approaches to its exploitation. The fact that most of the pebbles used were probably small in size is reflected by both cortex retention on whole debitage and the dimensions of the artefacts themselves. 46.9 % of the whole debitage retains at least some cortex, with 18.4 % retaining cortex on over half the dorsal face of the flake. This probably reflects the fact that the clasts selected could not be extensively reduced beyond the volume defined by the pebble itself, most debitage therefore retaining some cortex. The flakes themselves are small in size (mean maximum dimension 27.7mm; Table 4.71), which in combination with the degree of cortex retention suggests limited reduction of small flint pebbles, rather than the extensive reduction to exhaustion of larger material.
- 8.245 As outlined above, despite these limitations, control of flaking and platform preparation was exercised to produce narrow, parallel blades; however, a more *ad hoc* approach to flaking is also apparent, attested by migrating platform cores showing step fractures and incipient cones near platform edges, resulting from casual mechanical control. These mistakes could reflect later flintworking at the site, but may also merely result from the raw material used.
- 8.246 Mode of percussion could not be determined for a large proportion of the debitage assemblage (39.7%), and only 7.8% were produced using a soft hammer such as bone or antler; this included both some blades and a probable biface thinning flake (from context 236). Soft hammer blade production is typical of Mesolithic/Early Neolithic flintworking, whilst biface manufacture in this context could date to any point between the Mesolithic to Bronze Age. Given that only a single thinning flake was recovered from the site, this probably does not reflect frequent axe production, but rather casual maintenance of tools manufactured elsewhere. The remainder of the debitage was produced using a hard percussor.
- 8.247 An examination of butt type on debitage from the site indicates a variety of approaches to reduction; a proportion of the assemblage has been produced with an attempt to control the products of flaking through platform preparation and maintenance (12.3% being trimmed, faceted or abraded). Control of percussion is also indicated by the number of flakes which retain marginal butts (22.8%); these have not bitten far into the volume of the core, but reflect the careful flaking of a particular face. In contrast, 11.1% have dihedral butts located on the intersections between flake scars; these may reflect either attempts to heavily reduce small cores past the point at which they ceased to

be easily workable, or poor control of flaking as is typical of flintworking from the Middle Bronze Age onwards. Given the small size and intractability of the predominant raw material used, the apparent under-representation of flakes with natural or mixed butts is notable (5.3%), and may reflect the imposition of a certain degree of control upon the small pebbles used – flaking being prolonged from given platforms, rather than reduction shifting haphazardly around the core.

- 8.248 The scar patterns retained on the dorsal faces of flakes provide evidence for the reduction techniques through which the assemblage was produced. Most flakes (54.4%) retain scar patterns reflecting reduction from a single platform (parallel flaking), whilst 9.4% exhibit patterns which reflect bipolar flaking, either from opposed platforms (typical of Mesolithic or Early Neolithic reduction) or from turning the core to utilise a further platform once that initially used had been exhausted. 36.3% retain multi-directional patterns, also reflecting turning of the core. This could be taken to reflect casual reduction of multi-platform cores; however, Early Neolithic blade cores are also turned and exploited tangentially in the later stages of reduction. In addition, the debitage tends to retain a relatively high number of dorsal scars considering the small size of most material and of the size of raw material used (2-3 scars 37.2%, 4≤scars 38.3%). This might support the suggestion that a degree of control was exercised throughout core reduction, allowing relatively extensive exploitation of pebbles, which would quickly be exhausted by more casual, invasive flaking.
- 8.249 Further evidence for reduction techniques from debitage is provided by relict core edges on flakes, resulting either from previous phases of flaking in a different plane (retained on the dorsal face) or from the same platform as the flake itself (retained on the butt); of the 58 flakes which had relict core edges, the vast majority resulted from parallel flaking from the same platform as the flake itself (93.1%), with relatively few resulting from flaking in a different plane (6.9%). This reflects the dominance of parallel flaking attested by the dorsal scar patterns present.

### ***Cores***

- 8.250 Twenty cores were recovered from the site, nine which were not from stratified contexts (also the four cores in context 1 were recovered from topsoil), but are considered here as the rest of the assemblage was residual within later cut features. The patterns of flintworking attested to by the cores complement the evidence from the debitage assemblage, largely reflecting carefully controlled methods of flaking small clasts of rolled raw material, together with some more unsystematic approaches (Table 4.73). This complements the evidence for such techniques attested by the presence of blades at the site and arguably supports a Mesolithic - Earlier Neolithic date for much of the flint assemblage.
- 8.251 Despite the fact that the cores as a whole are small (average maximum dimension 37.9mm, range 20.3mm - 78.5mm), the original size and form of the blank selected can be determined for ten cores, indicating that their diminutive size probably does not result from exhaustive reduction, but from



the size of the blank used. Two cores were re-used as hammerstones, which together with the apparent small size and poor quality of the raw material as whole might perhaps suggest that lithic material was scarce in the immediate area of prehistoric activity and potentially conserved and re-used as necessary as a result. Various blank forms were used, including small pebbles (three cores), small tabular pieces (two cores) and relatively large flakes or knapping fragments (four cores). A shattered lump was also carefully utilised to produce bladelets from a single, well-maintained platform. Most of the cores underwent carefully controlled reduction prior to discard, flake or blade production frequently being extended by deliberate platform preparation or maintenance (seven cores, all but one dedicated to the production of small blades). More *ad hoc* approaches to flaking are also apparent, two cores reflecting the unsystematic exploitation of platforms to exhaustion with no evidence for platform maintenance, flaking then shifting to a different area of the core. Such relatively unsystematic reduction of this sort has been argued to be typical of flintworking from the Middle Bronze Age onwards (Edmonds 1995), but a more systematic approach may have been adopted earlier in the cores use-life, the cores being casually worked to exhaustion in their final phases, obliterating traces of earlier work. While seven cores were used to produce small blades or bladelets, and can clearly be regarded as Mesolithic in date, all but three of those used to produce flakes were also carefully worked in systematic manner, which is also compatible with Mesolithic or Early Neolithic technological approaches.

- 8.252 Patterns of core working at the site therefore largely reflect the evidence from the debitage assemblage; carefully controlled small blade production reflects a Mesolithic - Early Neolithic presence in the area, whilst more casual flaking is also apparent. It is not entirely clear to what extent the more *ad hoc* approaches to flaking represented might reflect a later prehistoric (Middle Bronze Age onwards?) presence, or simply casual flaking undertaken by the same group in tandem with more controlled reduction.

### ***Typology***

- 8.253 The flint assemblage from Quarry Farm included nine retouched or typologically distinct artefacts (Table 4.74). While these mostly comprised typologically undiagnostic, casually retouched flake or scraper forms, three artefacts indicative of a Mesolithic or Early Neolithic date were also recovered. These comprised a tranchet axe resharpening flake [720], an endscraper on a small flake [236] and a single unclassified microlith on the distal fragment of a blade [1243]. The blade used resulted from careful unipolar blade production, but had hinged slightly at its distal end. The blade was broken prior to retouch, and bears steep backing along the left edge, ending just before the distal end and forming a shallow, concave notch. Although few in number, such typologically distinctive artefacts as are present support the more robust, technological evidence for the production of much of the flint assemblage using Mesolithic - Early Neolithic methods of flintworking.

### **Discussion**

- 8.254 The majority of the flint assemblage from Quarry Farm is technologically and typologically undiagnostic of any prehistoric period. However, it is worth noting that technological features of both the cores and the flake assemblage suggest that a degree of control was exercised over the products of flaking, even given such poor quality raw material. The flakes, whilst small, retain relatively high numbers of dorsal scars, indicating that flaking was not merely limited to the casual removal of few flakes but that sufficient control was maintained to maximise production to a degree; this is also attested by evidence for platform preparation. Knapping accidents (typical of Later Bronze Age and Iron Age flintworking) such as crushing of platforms, step fractures, and incipient cones on platforms and flaked surface, are not common. Small, carefully produced blades comprise a notable proportion of the debitage from the site, and eight of the cores attest to controlled bladelet production, six of the others reflecting similarly controlled production of broader products. Technologically, a proportion of the debitage assemblage and the majority of the cores could be seen as reflecting methods of flint reduction typical of the Mesolithic - Early Neolithic. Notably, the only typologically diagnostic products represented are also indicative of such a date. However, given that much of the material was not indicative of any particular period or type of activity, the assemblage as a whole might also encompass the products of later prehistoric flintworking.

**Worked stone artefacts** by *Dr Fraser Hunter & Dawn McLaren, with Alan Saville & Ken Sedman*

### **Introduction**

- 8.255 A range of stone items was recovered from Quarry Farm, mostly everyday tools, such as whetstones and spindle whorls, with a few other individually interesting items. This includes a Neolithic polished stone axehead, from Phase 3 deposits.

### **Catalogue**

- 8.256 See Appendix 3.443 - 455

### **Discussion**

- 8.257 The Neolithic stone axe was found over 100m from the limited known Neolithic activity on the site. This makes it less likely to be residual and more likely to be an accidental find which was kept as a curio or seen as a supernatural item. Bradley (1985) has rightly emphasised the importance of a critical appraisal of such finds, but in this instance there seems to be a case to answer; there are other Roman-period examples and extensive anthropological parallels for the curation of stone axes in later contexts, especially as 'thunderbolts' (Adkins & Adkins 1985; Merrifield 1987 not in refs, 10-16). More avowedly linked to Roman ritual is an unfinished small altar (SF 207).
- 8.258 The other stone finds reflect more functional aspects of life at the site. The stone ingot mould provides evidence for non-ferrous metalworking, although the metal involved is uncertain. As discussed in the metal report, there is little evidence of copper alloy working, while lead and pewter working is attested

(including pewter ingot SF 181, although far too small for this mould). It is thus tempting to link this mould to the working of lead and pewter. Other items are less diagnostic; an unfinished substantial vessel, and a weight. Whether the latter was for metrology or simply to hold things down is uncertain, but it is rather more carefully shaped than would be expected for a simple thatch or loom weight.

- 8.259 Three whetstones were recovered from Phase 5 and 6 contexts. All were manufactured from unmodified water-worn cobbles. Two show evidence of secondary expedient use as a pounder, while staining on one may result from use as a hide-smoother. Textile production is attested by three stone spindle whorls from Phase 5 and 6 deposits, along with two ceramic examples (catalogued below); an unfinished whorl from Phase 5 indicates on-site production, most likely on an expedient basis.
- 8.260 More unusual for a Roman site are the grinding / rubbing cobble tools, characterised by extensive areas of abrasion confined to one face. These are difficult to parallel, but fit within the general scheme of cobble tools familiar from later prehistory. Cobble tools are generally manufactured from unmodified water-worn cobbles but slight shaping of the stone, as on SF 200, is not uncommon. Both were recovered from a hollow (F4) within Phase 6 (Anglian) deposits, which also produced a whetstone and a number of fire-cracked stones, perhaps a deliberate dump of material. It is interesting that the only cobble tools are from post-Roman contexts, the use of this 'prehistoric' technology perhaps suggesting that a wide range of tools in materials such as metal was no longer available. This is perhaps hinted at also by the wider range of stone items seen in the Romano-British phases compared to Phase 6.
- 8.261 Ken Sedman's geological analysis showed that the majority of stone was from local sources. The sandstones came from the Triassic Sherwood sandstone group, exposed in a nearby quarry near the Tees and available as surface exposures, while dolerite derived from the nearby Cleveland Dyke, and the few other igneous rocks are probably glacial pebbles. The oil shale and related material is more exotic; the nearest sources are the Carboniferous deposits of County Durham, but geological sourcing of similar Romano-British material has shown that it was exchanged over considerable distances (Allason-Jones and Jones 1994).

**Building materials** by Dawn McLaren & Dr Fraser Hunter, with Ken Sedman  
*Introduction*

- 8.262 The building materials provide some insights into the architecture of the Quarry Farm complex. Although much of the material is in secondary contexts, in some instances the concentrations suggest that they represent demolition debris from a nearby structure; others are less clear, but provide hints of activities elsewhere on the site. The winged corridor house itself remains the ghost at the feast, and there are only hints (from redeposited material) of its appearance.

### **Catalogue**

8.263 See Appendix 3.456 - 471

### **Discussion**

- 8.264 A sample of dressed stonework from the aisled building was retained for study, and photographs indicate similar roughly-squared blocks were used in the other structures, often with the visible face rather better prepared than the other surfaces. More details were preserved of the hypocausted structure. In its first phase (3a), it had a stone floor, the paving slabs comprising naturally-rippled sandstones, probably for underfoot grip as much as decoration. In Phase 3a two iron T-clamps survived *in situ*, holding thin sheets of red sandstone cladding; further pieces of sandstone were found *in situ* lining the southern, western and northern interior walls of the building. In Phase 4 it received an *opus signinum* floor
- 8.265 Of the villa buildings itself little can be said, but the remains of plain white wall plaster (one with hints of red paint) from adjacent features may well derive from its demolition or repair, and suggest it was rather more ornate than the other, utilitarian buildings. The lack of ceramic roof tile from the site suggests the buildings had shingles or thatch; a single fragment from the demolition debris in area D points to a stone-tiled building somewhere on site. The Phase 5d circular building included considerable reused material in its floor, but none of the architectural fragments show any great decorative pretensions. However, the presence of structural stones (perhaps thresholds with door wear) in secondary contexts already in Phase 3 implies early stone structures on the site.
- 8.266 Geological analysis of the stones by Ken Sedman showed that local sandstones and occasionally siltstones were used for building and architectural stones, derived from the Triassic Sherwood sandstone group; there are exposures by the Tees some 100m from the site which a 19<sup>th</sup> century quarry has exploited. He notes that the presence of an intrusive dolerite dyke at this point served to protect the softer sandstones from glacial erosion and subsequent burial under glacial till. This makes it one of the few sites on the Tees plain where usable building stone is readily available.
- 8.267 The other noteworthy structural material is the daub. While it may have been used as a rough wall-covering material, its distribution suggests instead that it was primarily connected with ovens. Industrial features such as hearths would be another source of such fired clay; the slag evidence indicates their presence in the vicinity, although none was located.

### **Querns by David Heslop**

#### **Summary**

- 8.268 An important group of querns was recovered from phases 3, 5 & 6 and is summarised in Table 4.81. Five fragments from two saddle querns were recorded from three contexts, two substantially complete beehive upper stones, and nine separate fragments of disk-shaped rotary querns or small millstones

came from six contexts and represent four or five stones. A single piece of basalt lava was recorded.

### ***Catalogue***

8.269 See Appendix 3.472 - 485

### ***Discussion***

- 8.270 The Quarry Farm assemblage is typical of the groups of querns from excavated sites in the Tees Valley and surrounding area, with local finer-grained sources outweighing the better-quality Millstone Grit types. There are no Yoredale Sandstone examples, but in such a small sample, this need not suggest that this source, lying in the Pennine Dales to the west, was completely ignored. The low representation of lava querns, with only one small fragment recorded, is unusual for a site of high status.
- 8.271 The relatively large number of saddle querns might hint at an early date for the start of occupation in the vicinity, but there is a lack of absolute dating evidence for sites of this period and it is not known how long the saddle quern continued in use after the introduction of beehive rotary querns towards the end of the Iron Age. The type is useful for a wider variety of functions than the rotary quern, which is not suitable for crushing small amounts of foodstuffs like herbs and roots, nor for the preparation of cosmetics or medicinal recipes.
- 8.272 The flat querns are again typical of the period, with most being on the cusp between larger hand quern forms and the smaller mechanically-driven millstones. Again, total numbers are too small to allow deductions to be made of the types of milling equipment in use at Quarry Farm.

### ***Vitrified material by Dawn McLaren***

#### ***Introduction***

- 8.273 Over 8kg of vitrified material were recovered during the excavations at Quarry Farm Villa. A rapid assessment of the assemblage was conducted, based on visual analysis, which allows basic identification of slag types through examination of morphology, density, colour and vesicularity. From the suite of vitrified material recovered, two contexts (114 & 286) with a significant quantity of material were selected for detailed examination. The material from these two contexts forms the basis for this report, although an overview of the assemblage is also provided. One, context 286, was a late 4<sup>th</sup> – early 5<sup>th</sup> century sand / silt layer over the interior of the aisled building (Phase 5c) containing 1299g of slag; the other, context 114, was the fill of an Anglian pit (Feature 115) from which 4274g of slag was recovered. Although the material from these contexts constitutes a significant proportion of the assemblage (over 65%), caution should be applied in projecting the conclusions drawn from this selective study to the assemblage as a whole, as the total assemblage was not examined in such detail.
- 8.274 During iron production a range of slag morphologies are produced. Only a few, for example tapped slag and hammerscale, are truly diagnostic (of

smelting and smithing respectively). The slag has been described using common terminology (e.g. McDonnell 1994; Spearman 1997; Starley 2000). Much of the smaller and less dense material is not diagnostic of, or attributable to, a particular process, and it is not possible from visual examination alone to allocate every piece of slag to a precise category (Crew & Rehren 2002, 84).

### **Results**

8.275 See Appendix 3.486 – 494

### **Discussion**

- 8.276 Despite the limitations of such a basic assessment of the assemblage of the whole, further analysis is fruitful. The suite of slag types from Quarry Farm is typical of those associated with bloom iron-working and the fragments of small hearth bottoms suggests that smithing was the dominant activity. The general lack of associated micro-debris indicates that most, if not all, of the material is residual and from secondary contexts. There is no evidence of smelting. A brief analysis of the contexts seems to confirm this, with quantities recovered from ditch and pit fills as well as hollows and spreads of material.
- 8.277 Vitriified material was recovered from every phase apart from Phase 2, but the limited Phase 1 material (early prehistoric) consists only of amalgams of burnt earth, probably formed in a domestic hearth.
- 8.278 Over 5kg of slag was recovered from Anglian deposits (Phase 6), and forms the bulk of the assemblage. The majority was recovered from pit fills; features F777 (199.8g) and F115 (4274.2g). Both are likely to represent coherent dumps of waste material from ironworking. The range of material from F115 is more comprehensive but lacks micro-debris that would indicate *in situ* activity. The lack of such material suggests these are likely to be secondary dumps of waste material and indicates that, although ironworking activities were taking place in the area during the later phases of the site's life, the location of the workshop itself lies outside the area of excavation.
- 8.279 The two contexts studied in detail represent the bulk of the slag assemblage (about 65%), and both are likely to be secondary dumps of material. A few general points arise from this. Firstly, much of the material is small, dense, plano-convex cakes consistent in size and weight with those formed by smithing (Starley 2000, 338). The majority of fragments are from small simple, circular or sub-circular plano-convex slag cakes, but one appears to be an amalgam of two superimposed hearth bottoms and suggests at least two phases of activity before the hearth was cleaned out. No smelting cakes or 'runned' slag characteristic of smelting (McDonnell 1994, 229-30) were recovered from these contexts, suggesting that this residue was derived from iron-smithing activities.
- 8.280 Secondly, amongst the assemblage was a small quantity of unmodified shale / coal fragments. Tiny flecks of the same material were also identified as inclusions within many of the fragments of vitriified material, suggesting that this had been used as fuel during this high-temperature process. No charcoal

or organic inclusions or impressions were noted within the slag, suggesting that shale and coal were the preferred fuel for this process.

- 8.281 Finally, no discernible difference in form or composition was noted between the slag from the late 4<sup>th</sup> – early 5<sup>th</sup> century layer (context 286) and the Anglian pit fill (context 114, feature 115), suggesting continuity of iron-working technology and processes at Quarry Farm throughout its later phases.

### **Investigative conservation** by Jennifer Jones

#### **Assessment**

- 8.282 Prior to investigative conservation, a conservation assessment of the assemblage was undertaken. This involved a brief examination of each artefact to assess its condition, to determine its composition, to provide a brief description and to make technological observations. All the metalwork was X-radiographed. A conservation assessment report and database were produced, which was used to assist in the selection of artefacts for investigative conservation and in the management of the post-excavation programme. The assemblage for conservation assessment numbered just over 220 objects made of iron, copper alloy, glass, lead and ceramic.

#### **Artefact selection**

- 8.283 Selection of artefacts for investigative conservation was made in conjunction with the relevant specialists, and was based on the academic and research objectives of the site, with reference to the archaeological and contextual importance of the objects. Observations of potential artefact vulnerability highlighted by the conservation assessment were also taken into account. The main aims of the investigative conservation programme were:
- artefact stabilisation to facilitate typological study by specialists for dating and site interpretation purposes;
  - to assist site interpretation by fully elucidating the available artefactual evidence by means of microscopic examination, recording, scientific analysis and selective removal of obscuring corrosion products;
  - to stabilise the archive for deposition and thereby secure its survival for future study.

### **Methodology, preservation and object range**

#### **Iron**

- 8.284 Iron corrosion removal was done using air abrasion. This system delivers a stream of compressed air mixed with fine (28 $\mu$ ) abrasive aluminium oxide powder through a hand-held nozzle. The work is done under X10 magnification, making it highly controllable, and allowing for very small, discrete areas of obscuring corrosion or soil to be removed. Much of the QF03 ironwork was highly corroded. This is typical of archaeological material excavated from aerated soils, with objects sometimes having little metal remaining below voluminous corrosion layers. Corrosion removal was therefore highly selective and designed to define and clarify targeted areas of the object to aid identification and interpretation.

- 8.285 141 iron artefacts were conserved, 83 of them from the hoard (SF112) of objects and tools excavated from pit F334. The hoard was lifted from site as a block containing a large number of objects corroded together. The block was too large to fit into the available X-ray facility, and some dismantling was done at assessment to remove a few objects for X-radiography. When investigative conservation began, each object was removed using handtools, and its exact location and relationship to the other pieces in the block recorded on overlaid sheets of Melinex film, to enable specialists to study the deposition sequence. Objects in the hoard were highly corroded, and many showed evidence of cracking and spalling of the corrosion products.
- 8.286 Traces of mineralised organic material were discovered on 15 iron objects, all but three of which were recovered from the hoard (SF112). Ten objects had the remains of handles, nine of which were made from wood, and one from horn. A further three objects (two from the hoard) had the remains of non-mineralised bone handles. One complete knife (SF104) had traces of both a mineralised leather knife sheath and a mineralised wood handle. None of the mineralised wood material was sufficiently abundant or well-preserved to allow sampling for species identification. However, X16 microscopic examination found features suggesting that woods including ash, fruitwood and alder had been used.

*Copper alloy and coins*

- 8.287 Twenty six copper alloy objects, sixteen copper alloy and two silver coins were conserved. Form and surface decorative detail was revealed using a solution of water, industrial methylated spirits (IMS) and non-ionic detergent, locally applied using small cotton wool swabs under X16 magnification - a very effective method for removing soil without causing damage to fragile corroded surfaces. Other obscuring corrosion products were removed using hand tools such as scalpels and fine needles. Some surface consolidation was carried out using a solution of 7.5% Paraloid B72 (an ethyl methacrylate copolymer) in acetone. Repairs and joins were made using Paraloid B72 adhesive.
- 8.288 The copper alloy objects were found to be moderately to highly corroded, although many did not have a great deal of obscuring surface corrosion. Some objects had compact surface patination, with well preserved detail (eg SF92, SF94). Copper corrosion products included the oxides and carbonates typically encountered on artefacts recovered from aerated soils.
- 8.289 Only one object, (SF41) a late Roman crossbow brooch, showed evidence of gilding. Though discontinuous, the gilding was well-preserved in places and was confirmed by EDXRF (energy dispersive X-ray fluorescence) analysis. Traces of mercury were also detected in the analysis, indicating that the brooch had been mercury or fire gilded.
- 8.290 Preservation of the coins was variable, with some in good condition (eg SF81, SF88), and others still showing little legible surface detail following conservation (eg SF75, SF86).



- 8.291 Limited EDXRF analysis of metalwork was undertaken during conservation, mainly to confirm or identify the presence of surface coatings (eg SF91, SF112/27, SF112/56). A more extensive programme of EDXRF analysis of the copper alloys was carried out by specialists as part of the research and cataloguing of the small finds assemblage.

*Lead*

- 8.292 Sixteen lead artefacts and fragments were conserved, using local applications of a solution of water, IMS and non-ionic detergent to remove soil cover. Hand tools were used to selectively remove obscuring corrosion products, where necessary. Objects were found to be moderately to highly corroded and to be mainly stable. The assemblage included a series of almost complete lead weights, four of which had an iron wire, possibly originally looped for suspension, running through them. Expansion of the iron due to corrosion had caused some splitting and distortion of the lead.

*Glass*

- 8.293 Seven pieces of glass were conserved. Other excavated glass fragments were not in need of conservation beyond surface cleaning, which was done using local application of a solution of water, IMS and non-ionic detergent. The soda-lime composition of Roman glass makes it a very stable material, in contrast to later potash glass, which does not survive well in the burial environment and is often in need of consolidation following excavation.
- 8.294 As well as pieces of plain vessel glass, a number of fragments from a mosaic glass vessel were recovered (SF41) from the site. This unusual glassware was made by applying thin slices of pre-prepared coloured and intricately patterned glass canes to a plain base vessel whilst it was plastic. As recovered, the fragments of mosaic glass had fractured into a series of cuboid pieces. After surface cleaning, the fragments were consolidated with 7.5% Paraloid B72 in acetone to prevent further disintegration, and it was then possible to assemble the consolidated fragments into three larger pieces.

*Ceramics*

- 8.295 Seven fragmentary and poorly fired prehistoric vessels were recovered from the excavation. These were fragile and needed careful surface cleaning and consolidation to stabilise them before specialist study. Cleaning was done with water and soft brushes, and consolidation was by immersion in a solution of 7.5% Paraloid B72 in acetone. One of the vessels (Vessel 1) had traces of a charred deposit on its inner surface, and this was sampled as part of the radiocarbon dating programme for the site. A limited amount of reconstruction of the vessels was also done, using Paraloid B72 adhesive.

*Recording*

- 8.296 All objects were digitally photographed before and after conservation, with further photographs and micro-photographs made during conservation, as necessary. Conservation records were written for each object, detailing treatments and any technological and other observations, and these were passed to the relevant specialists. Electronic versions of the digital photographs and conservation records will form part of the site archive.

## **9. Finds distribution**

### **Phases 1 and 2**

- 9.1 Only a small number of features have been identified as belonging to these phases, and the small data set precludes significant comments on the distribution of the finds.

### **Phase 3a**

- 9.2 There is a general concentration of finds towards the southeast corner of the site, in Area B as well as in and around the aisled building in Area C. Finds are more broadly scattered across the rest of the site during this phase, and there is no obvious focus of activity. Find types were mainly bone and pottery.

#### *By find type*

- Three features were identified with glass, in the east part of site (Areas C and E).
- There is a slight concentration of features containing animal bone in Area B. Bone is present in all other areas, but not in any concentrations.
- Three features contained metal objects: these were found in Areas A, B and C
- There is a concentration of features containing pottery in the southeast part of the site, in Area B as well as in and around the aisled building. Pottery was more generally distributed across Areas A, D, H, F and I.
- Slag only occurred in a single feature in Area H.

#### *By feature type*

- Discrete features were mainly found to contain bone and pottery. Four discrete features in Area B contained artefacts, with pottery, bone and metal being present. Three discrete features in Area E were loosely associated and contained bone and glass. Other discrete features were scattered across Areas A, C, F and I.
- Only one layer contained any artefacts: this was located in Area A, from which bone and pottery were retrieved.
- Linear features in Areas A, B, C, F, D and H contained mostly bone and pottery, with slag being recovered from a single linear feature in Area H.
- Only one oven (in Area D) contained any artefacts (bone and pot).
- Finds recovered from structures were either within the aisled building, or else associated with a structure to the west (F241). A number of sherds were recovered from the aisled building, as well as glass and metal artefacts. A single glass fragment was recovered from F241.

### **Phase 3b**

- 9.3 Finds from this phase are concentrated in Area H. A handful of features in Areas A, B, C, D, E and G were also found to contain artefacts. The main class of finds recovered from this period was pottery.

#### *By find type*

- Three features contained bone: one in Area B and the other two in Area H.

- No features contained any glass.
- Three features contained metal: one in Area E and the other two in Area H.
- Pottery was concentrated in seven features within Area H, and a further feature in Area G. Three other features (in Areas A, C and E) contained pottery.
- No slag was recovered from this phase.

*By feature type*

- Four discrete features contained artefacts, but there was no focus to these features. One contained pottery and metal, the other pits containing pot, bone and metal respectively. The two features containing metal artefacts were located in Area H, the remaining features being located in Areas B and C.
- Three linear features contained artefacts, and were located in Areas A, E and G. All contained pottery, and the feature in Area E also contained metal.
- No ovens from this phase contained artefacts.
- Finds retrieved from structures were confined to two features in Area H. Two of the postholes forming the semi-circular structure contained pot: bone was also retrieved from one of these features. Pottery was recovered from every posthole forming the sub-square structure, and one of these was also found to contain bone. No finds were recovered from the structures in Area D.

**Phase 3c**

- 9.4 Finds from this phase were focused on Areas D and H: only a single artefact type was found in Area C. Pottery was the dominant find type, but a significant number of features (seven) contained metal artefacts.

*By find type*

- Bone was recovered from four features: three within Area D and the other in Area H.
- Glass was recovered from a single feature within Area D.
- Seven features contained metal artefacts. These were concentrated in Areas D and H, with a single feature in Area C.
- Ten features in Area D and a further seven features in Area H contained pottery.
- Slag was recovered from single features in Areas D and H.

*By feature type*

- Ten of the features in Area D which contained finds were discrete features. One of the Area D features contained pottery, bone, metal and glass; two contained pottery and bone; one contained pottery and metal; one contained pottery and slag; one contained a metal object; and the remainder contained pottery. Two of the features in Area H were discrete. One contained metal and pottery and the other only pottery.
- Liner features containing finds were confined entirely to Area H. One contained metal and pottery; one contained slag and pottery; one contained just bone; three contained just pottery.

- One oven from Area D contained pottery and metal.
- Metal was recovered from the *caldarium*.

### **Phase 3d**

- 9.5 Finds from this phase were concentrated in Area H. Pottery was the dominant find type.

#### *By find type*

- Four features contained bone; two in Area D and two in Area H.
- Two features contained glass; one in Area C and the other in Area D.
- Two features contained metal; one in Area A and one in Area D.
- Pottery was concentrated in seven features in Area H. A single feature in Area C and two in Area D were also found to include pottery.
- Slag was recovered from a single feature in Area D.

#### *By feature type*

- Six discrete features containing finds were concentrated in Area H, with only one further discrete feature in Area D containing finds. Pottery was recovered from five of the features in Area H, with bone being retrieved from the sixth. The feature in Area D contained pottery, slag and glass.
- A single (metal) artefact was recovered from linear features.
- Bone was recovered from one oven in Area H.
- Two structures contained finds. Pottery and glass was retrieved from the *caldarium*. The foundation trench of the demolished building in Area D contained pottery, bone and metal.

### **Phase 4**

- 9.6 The main finds from this phase were mainly concentrated in Area H. Pottery was again the dominant find type.

#### *By find type*

- Eight features contained bone, but were spread randomly across the site in Areas A, C, D, E, G and H.
- Glass was only recovered from the abandoned *caldarium* in Area C.
- Six features contained metal artefacts, with half being concentrated in Area H. The remaining metal artefacts were recovered from two features in Area C and a single feature in Area G.
- Pottery was concentrated in Area H where it was retrieved from six features. Pottery was also recovered from ten other features in Areas A, C, D, E, and G.
- Slag was recovered from single features in Areas D and G.

#### *By feature type*

- Discrete features yielding finds were concentrated in Area H, with two further features in Areas C and E. In Area H one feature contained pottery, bone and metal, one contained pottery and metal, and the remaining two contained pottery. The feature in Area C also contained just pottery, while the feature in Area E contained pottery and bone.

- Only one layer in Phase 4 contained any finds: this was the layer below the paved surface to the north of the aisled building, which contained pottery and metal.
- Finds from linear features were mainly pottery. Two linear features in Area A contained pottery and bone, a linear feature in Area C contained just pottery, and another in Area H contained pottery and metal.
- Three ovens contained a variety of finds. Pottery and bone was retrieved from an oven in Area C. Pottery, bone and slag were recovered from an oven in Area D, and pottery, bone, slag and metal were recovered from an oven in Area G.
- Finds recovered from structures were limited to the abandonment of the *caldarium* in Area C. Pottery, bone, glass and metal were recovered.

### **Phase 5a**

- 9.7 There is a significant concentration of finds in Area H, with eighteen features yielding finds. Finds were retrieved from features in all areas except Area I. Pottery and bone were the dominant find types.

#### *By find type*

- Bone was retrieved from features in all areas except Area I. The main concentration of features containing bone was in Area H, where it was present in ten features. There was a smaller cluster of features in Area D, where bone was present in five features. A total of eleven further features across the remaining areas contained bone.
- Glass was recovered from a single feature in Area C.
- There was a strong concentration of features containing metal artefacts in Area H, where metal was recovered from six features. Metal was recovered from five further features: two in Area D and the remaining features in Areas A, C and F.
- Pottery was recovered from features in all areas except Area I. There was a heavy concentration of features containing pottery (20) in Area H.
- Features containing slag were concentrated in Area H, where it was retrieved from four features. Slag was also recovered from single features in Areas A and C.

#### *By feature type*

- Discrete features containing finds were concentrated in Area H where there were twelve such features. Three large features contained pottery, bone, slag and metal; two features contained pottery and bone; five contained pottery; one contained bone; and the remaining feature contained pottery and metal. This included two graves to the west of Area H which contained pottery.
- Eight linear features in Area H contained finds. One contained pottery, bone and slag; one contained pottery bone and metal; three contained pottery and bone; two contained pottery; the remaining feature contained metal. Linear features in Areas A, B, D, E, F, and G were also found to contain finds, either pottery, bone or both. One linear feature in Area A contained metal.

- Two ovens contained finds. An oven in Area C contained pottery, and an oven in Area D contained pottery bone and metal.
- Finds were recovered from two structures, both located in Area C. The half-circular timber structure contained pottery, bone and glass; pottery and metal were recovered from the abandoned corn dryer which had replaced the *caldarium*.

### **Phase 5b**

- 9.8 Finds were recovered from features in Areas A, B, C, D, E, F and H. Finds from this phase are concentrated in Areas D and H, and were also retrieved from the villa enclosure ditch. Finds from this feature are concentrated in the southern part of the site (Areas A, B and C), but this is a reflection of the excavation strategy, rather than a genuine variation in practice. Finds from Areas D and H were deposited within demolition layers (Area D) and layers of material (Area H).

#### *By find type*

- Bone was recovered from the villa enclosure ditch, and also from a small number of features in Areas C, E and H. Bone was also recovered from the layers in Areas D and H.
- Glass was recovered from the layer in Area H.
- Metal artefacts were recovered from the layers in Areas D and H, from the villa enclosure ditch, and also from single features in Areas C, E and F.
- Pottery was recovered from the demolition layer in Area D, and large quantities were also recovered from the layer in Area H. The villa enclosure ditch also contained pottery. A small number of features in Areas C, E and F also contained pottery.
- Slag was recovered from the layer in Area H.

#### *By feature type*

- Finds were only recovered from two discrete features, in Areas E and H. The feature in Area E contained pottery and bone; the feature in Area H only contained bone.
- The demolition layers in Area D contained pottery, bone and metal. The layer in Area H contained large amounts of pottery, as well as bone, metal, slag and glass.
- Finds from linear features were mainly from the villa enclosure ditch, which contained bone pottery and metal. Two further features in Area C contained bone. A single linear feature in Area E contained pottery and metal, and another in Area F contained pottery.
- One oven in Area C contained bone, and an oven in Area F contained metal and pottery.
- Finds from structures were restricted to the circular stone building in Area C. This contained pottery, bone and metal.

### **Phase 5c**

- 9.9 Finds relating to this phase were restricted to the eastern half of the site (Areas B, C, and E).

*By find type*

- Features containing bone were broadly focused in the southeast corner of the site (Areas B and C), with two features in Area E also containing bone.
- No glass was found.
- Features containing metal artefacts were broadly focused in Area C.
- Features containing pottery were broadly focused in Area B and C. Three further features were located in Area E.
- Two features in Area C contained slag.

*By feature type*

- Discrete features containing finds were concentrated on the site of the circular stone building in Area C. One feature contained metal and pottery; one contained metal; and the remaining two contained pottery. Two features in Area B contained finds: one contained pottery and bone, the other just bone. A further feature in Area E contained bone.
- Four layers contained finds and all were within the southeastern part of the site. Pottery was recovered from a layer in Area B; pottery slag and metal was retrieved from layers within the aisled building; pottery bone and metal were found within the layer to the north of the aisled building; and slag was recovered from a layer within the circular stone building.
- Two linear features contained finds: they were located in Area E and pottery was retrieved from both.
- Bone was recovered from the foundation trench of the internal division wall within the aisled building.

**Phase 5d**

- 9.10 Finds relating to this phase were restricted to the eastern half of the site (Areas C and E).

*By find type*

- Five features contained bone: four were focused in Area C, with a single feature in Area E.
- Glass was found in single features in Areas C and E.
- Four features in Area C and three in Area E contained metal artefacts.
- Three features in Area C and four in Area E contained pottery. Three of the features in Area E were grouped close together in the northeast corner of the site.
- Slag was recovered from three features in Area C and one in Area E.

*By feature type*

- Three discrete features containing finds were located in Area E. One feature contained metal and pottery, the second just pottery and the third just metal.
- Layers containing finds were located in Area C. Layers filling the aisled building contained bone, pottery, metal and slag. Layers within the abandoned circular stone building contained bone, metal, glass, slag and pottery.
- A single linear feature in Area E contained pottery.

- Two ovens in Area C contained finds. The oven in the western end of the aisled building contained pottery, bone and metal. The oven located towards the centre of Area C contained pottery, metal and slag.
- The abandoned corn dryer at the northeast corner of Area E contained pottery, bone, metal, glass and slag.

### **Phase 6**

- 9.11 Finds were mainly distributed in the western half of the site (Areas A, G and H), with only two features in Area C containing any finds. In the western area, finds were mainly confined to Areas A and H.

#### *By find type*

- There was a concentration of four features containing bone in Area H. The remaining small number of features were spread across Areas A, C and G.
- Two features contained glass. One was located in Area A and the other in Area H.
- Two features in Area A contained metal, as did three features in Area H.
- Features containing pottery were mainly located in Areas A and H, although two features in Area C, and one in Area G also contained pottery.
- Two features in A and one in Area C contained slag, but the main concentration of features was in Area H, where slag was found in five features.

#### *By feature type*

- Two discrete features were located in Area A, and these contained pottery and bone, and pottery and glass. A third feature located in Area C contained pottery. Four discrete features were concentrated in Area H: two contained pottery, bone, metal and slag; one contained bone and slag, and the fourth contained pottery.
- The layer over the paved surface in Area C contained pottery, bone and slag. Two further layers were located in Area H. The layer covering the paved surface contained large amounts of Roman and Anglian pottery, as well as bone, metal, glass and slag; a layer to the east of this contained bone and slag.
- Linear features were located in Area A only. The main north-south boundary ditch contained pottery, metal and bone, and two other linears contained pot and bone.
- The two possible *Grubenhäuser* were located in Areas A and G. The Area A *Grubenhäuser* contained large amounts of Anglian pottery, as well as bone, metal, glass, and slag. The Area G *Grubenhäuser* contained only pot and bone.

## **10. The environmental evidence**

### **Charred plant remains** *by Jacqui Huntley*

#### *Introduction*

- 10.1 The charred plant remains from 177 contexts (179 samples) were assessed by Dr Charlotte O'Brien of Archaeological Service Durham University as part of



a normal assessment and update project design phase (Archaeological Services 2006). She determined that 25 were worthy of full processing and analysis; this further processing was completed by Archaeological Services with the subsequent analysis of the new flots by the author. The analysis plus discussion of the assessment data, where appropriate, is reported upon here.

### ***Methodology***

- 10.2 For the assessment, five-litre sub-samples, in most cases, were manually floated with both flot and residue retained upon 500 $\mu$  mesh. Contexts 333 and 357 had only 400ml each processed whilst context 1453 had 41.6 litres processed. With only two exceptions, all of the flots were completely sorted as they were, typically, rather small and not particularly rich. Half of context 216 was sorted as this was an extremely rich sample and clearly worth full processing and analysis. Half of the 400ml flot of context 394 produced only two seeds and it was not felt worthwhile sorting the rest for the assessment.
- 10.3 For the full analysis, all of the remaining material from the 25 contexts was processed as above, with the exception of context 216 where there was no further material, and 912. The flots were sorted and charred plant remains identified by comparison with reference material belonging to the author.
- 10.4 Given the richness of the flots a subjective strategy was adopted for their sorting on a flot by flot basis. They were sieved to three fractions - >2mm, 1-2mm and <1mm and each fraction examined separately. Where any taxon was super-abundant it / they were sorted from a known volume of the relevant fraction and then numbers adjusted to represent numbers in the whole of that fraction. All of the >2mm and 1-2mm fractions were, however, sorted for the other taxa. On occasions, only part of the <1mm fraction was sorted. This variation is noted on the sample sheets. Numbers were then adjusted to represent the totals numbers of each taxon represented in the complete flot.
- 10.5 Cereals grains, whether identifiable or not, were only counted if the embryo was present. This will significantly reduce numbers in some flots as the grains were highly fragmented, although this was noted on the recording sheet and taken into account in any interpretation. In most cases the wheat grains were left as *Triticum* sp. although those that were considerably rounded were classed as *T. aestivo-compactum* and a few were considered to be spelt given the more or less parallel sides and especially the impression of the glumes but without the high dorsal ridge characteristic of emmer. Barley grains were classed as hulled, naked or indet. There were some twisted embryos present so at least some of the grains were from six-rowed *Hordeum vulgare* (and confirmed by chaff remains) but the majority were not that clear hence the population could not be classed to species. The fragments of nodes from the extreme bases of glume wheat chaff were noted too but have not been included in any calculations relating to crop processing stages as they could have been fragments of glume bases that had already been counted. Large trigonous nutlets of *Rumex* were classified as *Rumex obtusifolius*-type which includes *R. obtusifolius*, *R. crispus* and *R. longifolius* - all tall ruderal species.

- 10.6 Some of the spelt glume bases looked extremely robust suggesting well-grown crops. Measurements were therefore taken across their bases following Jacomet (1987) in order to compare with equivalent data from other sites both from the region and further south.
- 10.7 By far the majority of remains were preserved through being charred. A few woody and resistant seeds survived but are considered to be probable modern contaminants. One exception is the hard, calcium carbonate rich *Lithospermum arvense* seeds which might well survive a fire - one was clearly charred but most, abundant in a few contexts, were at best 'singed' at the edges only. They are clearly not a modern contaminant as the species has not been present in England since the mid 1950s and then predominantly in southern counties (Preston *et al.* 2002) and are tentatively suggested as being contemporary with the charred assemblage although they could be as recent as the 19<sup>th</sup> century. Even if contemporary they have not been included in any calculations since their mode of preservation, hence taphonomy, clearly is different from that of the rest of the assemblage. Nomenclature follows Stace (1997).

### **Results**

- 10.8 In all, 179 samples were either assessed and / or analysed of which 62 (35%) produced no seeds (Table 5.1). The data (counts of seeds) for the fully analysed ones are presented in Table 5.2. Unfortunately the data cannot be standardised to seeds/unit volume as volumes processed were not always recorded. Given the widely varying volumes taken, for very good archaeological reasons, neither is it reasonable to assume a 'typical' volume for this purpose. The assessment data are fully produced in the updated project design and not repeated here.
- 10.9 Table 5.3 presents the distribution of samples amongst the various phases of activity showing that the bulk relate to Phase 3 and its sub-sections, although phases 5a and 6 both have a reasonable number of samples. It is disappointing that the few Iron Age (Phase 2) samples had a high value of barren samples thus making it impossible to undertake viable comparisons between the Romano-British and earlier contexts. However, one sample from each of phases 1 and 2 were quite rich and thus provided some comparable data (see below).
- 10.10 Otherwise the percentage of barren samples by phase differs little from the overall percentage suggesting no great bias in preservation or distribution of plant debris across the periods of occupation.
- 10.11 In terms of context types (Table 5.4) that were worked upon, ditch and pit fills dominate the assemblage which is, perhaps, not surprising on a rural site. Flue- and oven-related features were deliberately chosen for sampling as they were most likely to produce reasonable charred plant assemblages that could aid discussion about crop husbandry during the Romano-British phases especially. The ditch and gully fills were rather high in terms of percentage barren samples and pits were surprisingly 'clean' as well. This might well mean that the ditches and gullies filled in naturally after occupation had moved

away, and hence little charred plant material was being produced let alone disposed of on site; or, more probably, that the features were actively being kept clean throughout the life of the site. The pits may not have been in receipt of this type of rubbish but rather organic debris that subsequently decomposed. The targeted ovens, although small numbers of samples, did all produce something and the flue fills had only 20% barren contexts, therefore somewhat better than the overall value.

- 10.12 The 25 fully analysed samples produced over 25,000 seeds. In terms of concentrations, the samples demonstrated the typical curve with most having few seeds tailing off to rather few rich samples with a maximum concentration of 15500 seeds/10 litres sediment. 87 of the 179 samples had fewer than 100 seeds/10 litres, excluding the barren samples. Concentrations of the samples that were fully analysed could not be calculated in all cases as volumes of sediment processed had not been recorded but, suffice to say, they were the richer ones from the assessment on the whole.
- 10.13 The taxa present were grouped into broad ecological categories according to their present-day ecology, although it is accepted that some may have been better represented in other groups in the past. For example, the dominant taxon in the 'grassland' group is *Danthonia decumbens* which has often been argued to represent an arable weed in the past (Hillman 1982; van der Veen 1992) although it is perhaps more likely to reflect burnt turves, *sensu* grass sods, particularly when grass caryopses and *Potentilla erecta* are also abundant (Hall 2003). Certainly today it is most characteristic of acid grasslands at the edge of heathland on sandy soils.
- 10.14 Table 5.5 shows the proportions of these ecological categories in the fully analysed samples. Clearly cereal grain and chaff are the most abundant groups but this is not surprising in a typical charred assemblage. Other than the woodland and non-cereal economic group all of the others could have been growing to a greater or lesser extent amongst the cereal although, for example, the biennials in the ruderal category are less likely to have been so doing.
- 10.15 Cereal grain and chaff fragments comprised over three quarters of the assemblage as a whole but this is not surprising given the nature of preservation and, indeed, the site itself. What is obvious is that, although chaff clearly reflects crop processing debris, there is little in the way of arable seeds present. This, of itself, could suggest clean crops but interpretation at this level is probably best done by looking at the individual contexts (see Crop husbandry, below).
- 10.16 In terms of the individual taxa in each of these groups the cereal grains (Table 5.6) are dominated by those of *Triticum* sp (wheat) at 64%. Many of these had some characteristics of spelt, with parallel sides and rather low dorsal ridges; clear glume impressions showed on a few. Only where all three of these characters were present and/or where the grain remained in the spikelet was it called *Triticum spelta*. Given the difficulty in separating this species from the other hexaploid, bread wheat (*T. aestivum*) (or, indeed, separation of wheat grains in general (Hillman *et al.* 1995 for 1996)) it was felt more reliable to

simply leave them at the generic level. The few grains determined as bread wheat were the typical rounded grains of *T. aestivo-compactum*. Tear-drop shaped and very high dorsal ridge grains were abundant in two contexts and have been classed as emmer (*T. dicoccon*).

- 10.17 *Avena* grains formed 6% of the assemblage but, without the diagnostic chaff, they remain as oats. Whilst they may have been from the cultivated species they could equally have been from the wild.
- 10.18 Barley (*Hordeum*) was not at all common in the assemblage and this is unusual for the region as a whole. Most was clearly hulled although naked was common in two contexts. Both twisted and straight embryos were present, therefore at least some was the six-row *H. vulgare*. As few individual grains could be determined as being from this species (only those twisted embryos would have been for certain) the taxon is left as *Hordeum* sp.. No rye grain was present. About 20% of the cereal grains could not be determined at all.
- 10.19 The chaff allows us to say more about the species of cereal being used, as it is generally more diagnostic to this level than the grain. Table 5.7 presents these data.
- 10.20 Spelt glumes dominate this assemblage in terms of both absolute numbers and presence in numbers of samples, but there are a few bread wheat rachis nodes. It is therefore assumed that the assemblage is dominated by spelt wheat. At least some of the barley was confirmed as being six-row; no rachis remains of the two-row were recorded. A few florets of the cultivated oats, *Avena sativa*) were present and rye (*Secale cereale*) was recorded as chaff. Emmer glume bases were present in the two contexts that also contained the emmer grain.
- 10.21 It therefore seems likely that six cereals were present at this site, namely spelt, emmer and bread wheats, cultivated oats, six-row barley and rye, although only the spelt, emmer and barley are in sufficient numbers to suggest deliberate cultivation.
- 10.22 As noted above, seeds of plants that may have been growing amongst the cereals are more difficult to confirm due to changing agricultural practices, and acceptance of weedy crops in the past. Plus, the taphonomy of the contexts is complex in many instances and the context could, therefore, include material from several sources, although the fact that they are all charred perhaps suggests association with cereal processing or bonfires being used to tidy up the site at times.
- 10.23 The various weedy taxa are presented in Table 5.8 where ca=arable weeds, cg=grassland, ch=heathland, cw=wet ground and cs=broad tolerance. They are sorted by number of seeds (sum) irrespective of their ecological category, simply to demonstrate the most abundant taxa easily. Percentage values are calculated both as against the total seeds within the appropriate ecological category and against the total seeds classed broadly as potential weeds. Thus *Danthonia decumbens* is 100% of the heathland category but only 4.4% of the

overall 'weeds'. As noted above, these categories comprise a total of about 24% of the total assemblage.

- 10.24 *Bromus* (brome grass) seeds are the most abundant. Given that they are about the same size as the cereals they would not have been easily separated from that grain. However, several species are typical grasses of ruderal to waste ground and may easily have been growing around the edges of the farmstead, with their seeds becoming incorporated accidentally. Small grass caryopses, as the next most abundant, are perhaps more likely to reflect burnt turves from roofing or other structural elements but could represent annuals growing amongst the crops. The next four categories are typical weeds but reflect a range of soils, while the *Rumex obtusifolius*-type (dockens) are clear ruderals. By far the most taxa are in rather low abundance, at least at the assemblage level.
- 10.25 In summary, at the assemblage level there are six cereal species present with a selection of weed seeds probably representing a mixture of true arable weeds, some more ruderals and some that might well have been incorporated from burning of turves. Woodland and scrub taxa are a definite minority and represented by a few fragments of hazelnut shell and blackberry pips with one seed of *Stellaria holostea*, a stitchwort characteristic of damp woodland/scrub edges. Exotic taxa are represented by a few seeds each of flax (*Linum usitatissimum*) and Celtic bean (*Vicia faba*). Both are quite likely to have been local crops but, since they do not require fire in their processing, their survival in this assemblage has to be seen as accidental and therefore probably bears no relationship to the importance or otherwise of them in the economy of the site.
- 10.26 Table 5.9 presents the seed data by phase to investigate differences at this level. Percentage values are presented in order to standardise the data in one way, given that standardisation in absolute terms by volume is not possible in all cases. Cereal grain types are presented first, followed by cereal chaff, other edible fruits and seeds, then the remaining, broadly weedy, taxa. Cells where values are >10% are highlighted - this is a purely arbitrary value but serves to emphasise the more important cereal types for a given phase. As the values for weedy taxa are so low, values of between 5-9.99% are not highlighted but shown in bold.
- 10.27 In terms of the cereal grains, emmer-types (*Triticum dicoccon*-type) only are recorded in Phase 1 when naked barley (*Hordeum* naked) also is quite important. Otherwise most of the grains are wheat. Hulled barley is present in all phases but only the most abundant in 3a and 5b. Bread wheat (*Triticum aestivum*-type) is sporadically present from 3a onwards but never abundant. Spelt (*T. spelta*) are rarely identified as the grains have a very similar profile to the longer slimmer bread wheat. Oat (*Avena*) grains are present throughout but more common in 3a onwards.
- 10.28 For the cereal chaff, all phases from 3a onwards, i.e. all Roman and later, have large proportions of spelt chaff - mostly glume bases but with some spikelet forks. The *Triticum* brittle rachis internodes are probably from spelt given the lack of emmer in these phases but, of themselves, are not identifiable beyond

*Triticum*. *Hordeum* rachis fragments are never abundant but are present from 3a onwards again. Culm nodes are scattered throughout but never abundant suggesting that little or no straw is represented in this material. The *Avena* awns may reflect oats *per se* but could represent other large grasses, such as *Helictotrichon* spp, which also have the characteristically twisted awns. Cultivated oats are present in 4 and 5d from the diagnostic *Avena sativa* floret bases. Very small amounts of rye (*Secale cereale*) internodes were present in 3c and 5b thus possibly representing a further crop, although at such low proportions to infer, more likely, an imported weed.

- 10.29 For the other edible taxa there are very few remains; suffice it to say that flax (*Linum usitatissimum*) is recorded from Phase 1 in moderate amounts and from 3c in very small amounts. Beans (*Vicia faba*) are only from the later Roman phases.
- 10.30 The weedy taxa are more difficult to interpret, as few are common at all. There are suggestions that fat hen (*Chenopodium album*), redshank/periscaria (*Polygonum lapathifolium/P. periscaria*), black bindweed (*Fallopia convolvulus*) and lenticular sedges (*Carex lenticular*) are more common in Phase 1, and the sedges especially so in Phase 2. Otherwise there are few major differences between the Roman phases. The long tail of single occurrences in Phase 5d is considered to reflect the much higher numbers of seeds in that phase.
- 10.31 Overall, the cereals show a distinction between certainly Phase 1, probably Phase 2, and the rest with emmer and naked barley falling out of favour after Romano-British occupation of the site. There are no significant differences during the Roman phases. The weedy taxa have a very similar pattern too, although nutrient enriched, damp soils seem to be more common in the earlier phases of occupation.
- 10.32 Table 5.10 presents the frequency plot for the length breadth ratios of grains classed as hexaploid from context 927. In terms of the absolute measurement none was less than 4mm long - perhaps a reflection of sieve size during processing, although smaller grains may not have been sufficiently well formed to have been classed as wheat. There is a reasonably normal distribution with a small tail at the upper end suggesting some longer and thinner grains.

### ***Crop husbandry***

- 10.33 Once harvested, cereal crops go through several processes in order to release the grains for use; each process produces characteristic by-products, with types of weed seed contributing to each stage too (Hillman 1981; Jones 1984). Simplistically, after harvesting, threshing removes straw (culm nodes especially) and vegetative remains of weeds; winnowing removes small free light weed seeds and chaff fragments; coarse sieving removes heads of weeds; fine sieving removes small weed seeds, glume bases and other small chaff fragments, leaving behind the clean grain with similar-sized weed seeds on the sieve. Examination of the proportions of cereal grains to chaff and weed seeds therefore can aid interpretation of the different stages of these processes that

are represented in the samples and hence lead to discussion about the nature of crop growing and usage on a site. This needs to be at the sample level and with sufficient remains to make reasonably sensible interpretations. It was decided that all samples that contained more than 100 grain and chaff fragments of either wheat or barley should be used. Note, however, that *Hordeum* basal rachis internodes and brittle rachis wheat internodes were excluded, as they were not independent of the glume bases or rachis internodes and could therefore bias any ratios calculated. This reduced the samples considerably.

- 10.34 Whilst the limited barley chaff demonstrates the presence of six-row barley there is no definitive evidence for two-row; given the general acceptance that two-row was introduced during the medieval period it is assumed that all of the barley was six-row and hence would have produced three grains to one rachis internode if whole ears were represented in the assemblages. Thus a grain : internode ratio of 3 equates to whole ears, much larger than 3 (far more grain) represents fully processed grain and much less than 3 (more internodes) probably represents processing waste. Only three samples (Table 5.12) reached the criterion for inclusion (100 barley grain and internodes) two of which (415 and 417, both dominated by naked barley) had no chaff. The third sample (1109, hulled barley) produced a ratio of 1.25 thus suggesting probable processing waste.
- 10.35 For the glume wheats (emmer and spelt) each spikelet produces two glumes and, generally, two grains thus a grain : glume ratio of 1 would be expected if whole spikelets were present. A ratio much higher than 1 (grain >> glume bases) suggests a fully processed crop and one much lower (glume bases >> grain) suggests a fine sieving waste product. For Quarry Farm it has been assumed that all of the *Triticum* sp grains were from one or other of the glume wheats given that the free-threshing bread wheat is rare throughout. The ratios calculated (Table 5.13) suggest that only Phase 1 context 415 comprises fully processed grain. This might well suggest that the context, a pit, was in fact a storage pit with the material charred following a cleaning activity prior to use the next year. Four samples have values close to those of complete spikelets (924, 927, 672, and 1109). The first are two pits that might, again, have been storage pits; the latter two are related to the ovens / drying kilns. 672, as an oven fill, could indicate burning of spikelets, perhaps at the parching stage during the drying process. 1109 is the flue and the assemblage would suggest either a sample from near to the base of the flue immediately adjacent to the kiln bowl or the result of a very vigorous draught that blew the relatively dense spikelets (as compared with glumes) up the flue. The remaining samples comprise largely fine sieving products. Those assemblages from flues could be the result of debris from over-parching being allowed to blow along the flue or reflect processing debris being used deliberately as a fuel, as suggested at Catterick (Busby *et al.* 1996). The assemblages from ditch or pit fills could represent discard of waste into these features. This does not, of course, necessarily mean that all of the material was simply seen as waste, or as by-products from several processing stages have uses as, for example, chicken feed, kindling and so on.

- 10.36 Data from samples containing >100 cereal grain+chaff+possible weeds were summed to calculate the traditional triangular grain – chaff – weeds plot (Table 5.14). The taxa included as weeds here are highlighted in Table 5.2 and, essentially, include annuals, modern typical weeds and grassland / wetland taxa which might have been growing in cultivated fields in the past. It does include *Danthonia decumbens* as this is a species typically included in archaeobotanical reports as a weed, although the author feels that this is unlikely, and that it more probably reflects burning of turf. This visually shows the lack of weeds (very few samples approaching the bottom left corner).
- 10.37 Such diagrams are used in discussing whether a site was a consumer or producer (see, for example, long discussions in (Bakels 1996; Jones 1988; Stevens 2003; van der Veen 1992; van der Veen & Jones 2006) but it seems obvious that the samples containing sufficient remains to be included in such a plot are only a very small fraction of the site itself. It is therefore used here to look at similarities and differences between samples with the assumption that a villa site was indeed producing crops and maybe even a surplus of them. All of the discussions referred to in the above references require large numbers of weeds seeds as well and, as stated above, this is not the case for Quarry Farm and neither is it considered an artefact of preservation, given the large numbers of equally fragile combustible chaff. The pattern is most similar to those at Murton and Hallshill, two of van der Veen's (1992) sites. She does note that these sites had relatively few samples, that they were not consumer sites according to the models and that the pattern might reflect different proportions of wheat and barley being used, since all grain and chaff are considered as a single type. For Quarry Farm, Table 5.15 presents the wheat : barley grain ratios for all samples where total wheat+barley grain>100. Context 927 stands out as very different, given the large numbers of wheat and minimal barley, but it falls in the centre of the triplot along with 1109 which has an average sort of ratio value; the others nearby on the plot did not produce sufficient grain to be included. Contexts 415 and 417 are quite close and have low ratios, i.e. more or less equal amounts of the two grain types, so there may be strength to van der Veen's argument.
- 10.38 It is sufficient to say that there are no simple answers with regard to using ratios in discussions of consumer versus producer. It is equally likely that any one site of the type under report here will have / do both, but that the evidence will not necessarily survive to the same degree, let alone be sampled and analysed.
- 10.39 In summary, the samples analysed here include a high proportion of probable sieving debris or by-product as well as limited amounts of spikelets or cleaned grain.

### ***Discussion at the phase level***

#### *Phase 1*

- 10.40 Only one sample was fully analysed from this phase - context 415, a pit fill. Only one of the other four samples assessed produced any seeds: pit fill (723) produced four seeds of *Veronica chamaedrys* although these are dark and



notoriously robust hence may not have been charred and contemporary. Note that none of the seeds of this species found during analysis was charred. 415 produced a large number of wheat grains, of which half were classified as emmer-type. Although not large numbers, all of the cereal chaff, except for one spelt glume base, was ascribed to emmer wheat - namely glume bases and spikelet forks. Barley was also quite common, with just under half naked but with about 10% hulled. Most grains, however, were not well preserved and hence left as barley. Weeds were likewise not common. Fat hen (*Chenopodium album*), various *Polygonum* species and lenticular sedges were most abundant. At least the two former suggest reasonably well manured ground, with sedges tending to suggest damper soils. Flax was recovered from this context in moderate amounts but with no evidence for charred capsule fragments; just the seeds were present. It is suggested that this was probably a storage pit. The fact that the material was charred might indicate that 'dregs' from one year were burned in order to cleanse the pit prior to use the following year. The presence of flax seeds as well could indicate a contaminant, storage of different material or discard of general waste.

- 10.41 This context is one of several stratigraphically isolated pits, a few of which produced prehistoric pottery. From the botanical assemblage it is strongly suggested that 415 is Bronze Age or Early Iron Age, since both emmer wheat and naked barley had been superseded by about the middle Iron Age south of the River Tyne. Emmer continued until much later north of the Tyne (van der Veen 1992) but naked barley is extremely rare in northern England as a whole (Huntley & Stallibrass 1995). It is interesting to note that emmer wheat also continued for longer in the north-west of England (Huntley 2002). Radiocarbon dates (Table 5.16), however, confirm a Bronze Age date for this feature.

#### *Phase 2*

- 10.42 Again only a single context, pit fill 417, was fully analysed, with the other three contexts assessed as all being barren. Pit fill 417 contained similar amounts of barley and indeterminable cereal grain. Some of the barley was clearly hulled, and a little clearly naked, but most was sufficiently abraded as to remain as barley undiff.. Wheat grains formed about a quarter of the cereal grain assemblage but no chaff was recovered at all, and nothing suggested any particular species of wheat. Large numbers of sedge nutlets were recovered but, otherwise, few seeds of weedy or other herbaceous taxa were present. The absence of chaff from this context could simply relate to the poor state of preservation. Context 417 has obvious links to the earlier material from Phase 1, possible reflecting mixing of material prior to deposition in the pit. This would be further suggested by the generally rather poor state of preservation of many of the grains. The high numbers of sedge nutlets might indicate burnt dung or hay, or even possibly the remains of burnt turves. Taxa from other plants from these types of communities are absent, however, with weeds of damp nutrient-enriched soils being the most common of an essentially rare group.

*Phase 3a*

- 10.43 Thirty samples from Phase 3a were assessed but with only four then being fully analysed (contexts 215, 216, 221 and 912). Only 75 seeds were recorded from the full analyses of 215 and 221. In the case of 221 this was a result of only 1 litre of sediment remaining; for 215, the volume was not recorded and no further material found. For 216 and 912 no material remained unprocessed. As a result the assessment flots were checked by the present author for consistency of data recording.
- 10.44 Context 215 was the upper fill of F217, a pit (216 being the lower fill). It had a sparse assemblage with hulled barley and barley chaff the most commonly recorded material, with some spelt chaff too. The flot from the lower fill, 216, comprised mostly the remains of cereal grains although they were exceedingly poorly preserved. Quite large amounts of a bubbly cindery material, clearly containing some vegetative material, was also recorded and interpreted as burnt dung. Wheat and barley were both present but it was impossible even to estimate their proportions given the poor quality of preservation. The finer fractions contained large numbers of spelt glume bases which retained surprisingly long fragments of glume given the general state of preservation. A few brome grass seeds were present, quite a few *Avena* type awns and one wild oat *Avena fatua* grain complete with its floret base. A few of the wheat grains were the rounded bread wheat type and one had the high dorsal ridge characteristic of emmer. 912 was the fill of pit 915 and the flot was very similar in nature to that from 216, i.e. dreadful preservation and largely cereal grains and spelt glume bases. Some weed seeds were recorded, notably stinking mayweed (*Anthemis cotula*) and mayweed (*Tripleurospermum inodorum*) but this is likely to be an under-representation given the quality of preservation. The grains included both wheat and barley but most were highly degraded and often mineral coated. 221 was the fill of posthole F222, hence the small size of sample, and produced some spelt glumes and a few other taxa as single items only. Unfortunately, either adds much to the interpretation of the phase.

*Phase 3b*

- 10.45 Two of the eighteen samples assessed were deemed worthy of full analysis, namely 506, fill of pit F505 and 871 fill of posthole F870. The remaining assessment samples produced a few wheat and barley grains, as well as indeterminate cereal grains. 1453 was completed at the assessment stage, when 41.6 litres were processed. It produced essentially the same types of material as the other assessed samples in slightly larger numbers but certainly not in relation to the extra material processed. Full analysis of 506 produced mostly wheat grains with some spelt glume bases. Purple moor grass (*Danthonia decumbens*) and small grasses were quite common too, and strongly suggest the incorporation of turves or similar into the pit. With the cereal grain and chaff probably representing crop processing debris, and possibly domestic refuse, it seems that this pit received material from several sources. 871 produced a few fragments of wheat grain and chaff plus a couple of purple moor grass seeds a rather similar, if depauperate, assemblage to that of 506.

*Phase 3c*

- 10.46 Nineteen samples produced three worth analyzing. Contexts 840 and 906, were fills of oven F884 and both especially rich. Their assemblages were similar, being dominated by spelt glume bases, spikelet forks and other glume wheat chaff. The main difference is in the number of purple moor grass seeds in 840, and it is possible that these reflect part of the fabric of the oven or even turf being used as fuel. Wheat and oat grains were moderately abundant and it is concluded that the oven was being used to dry grain. The glume bases might suggest that the wheat was being dried in the spikelets but could easily have been used as part of the fuel as has been seen elsewhere (Busby *et al.* 1996). The assemblage from 882 was generally sparse with wheat grains, bread wheat-type grains and cleavers (*Galium aparine*) most common. The latter were definitely charred.

*Phase 3d*

- 10.47 One of the six samples assessed went to full analysis. The other samples were particularly poor in plant remains with only a few indeterminable cereal grains and weed seeds being recorded. Full analysis of context 641, a fill of ditch F1199, showed that it was dominated by huge numbers of spelt glume bases with high numbers of both wheat grains and brittle rachis wheat internodes. It contained a variety of weed seeds suggesting both grassland and arable cultivation. Its assemblage was similar to that of the oven fill 840 although lacking the large numbers of purple moor grass seeds of 840.

*Phase 4*

- 10.48 Three of the ten samples from Phase 4 were analysed: context 379, the lower fill of flue F301 (upper fill was barren - Phase 5a), context 516, the fill of flue linking F301/310 (515 also from this feature produced only a single indeterminable cereal grains) and context 964, the fill of F801, a construction cut. Context 379 produced an overwhelming dominance of spelt glumes and brittle wheat rachis internodes. Wheat and oat grains were again moderately common but otherwise there were few weedy taxa present. Context 516 had far more grains than 379 although spelt glume bases were still the most common item recorded. Weedy taxa were much more akin to the assemblage of 641, the Phase 3d ditch fill, or 840 the Phase 3c oven. Context 964 was not that rich and produced more or less equal numbers of barley grain and wheat chaff with the usual selection of mixed weedy taxa. Fat hen stood out as being the most common weed taxon.

*Phase 5a*

- 10.49 Six of the 31 assessed samples were fully analysed. Context 884, the fill of gully F884, only produced a couple of wheat grains and one fragment of hazel nutshell. Context 330 was the fill of pit F366 at the base of F310, a rectangular stone structure whose fill, 311, was barren. Although the assemblage had more spelt glumes than anything else, it was not a particularly rich assemblage and had nothing out of character for the Roman part of the site. 490 was the fill of flue F339 at the mouth of a stoke pit. Its assemblage was disappointing and had mainly wheat grain or indeterminable cereal grains. Chaff remains were minimal as were weedy taxa. It did produce a few seeds of stinking mayweed, *Anthemis cotula*, a species characteristic of heavy clay

soils and generally appearing in the later Roman period in northern England. Context 873 was the fill of pit 872 and produced a rich assemblage of mostly wheat grain with indeterminable grains and spelt glume bases. Brome grass and small grass seeds were also common, perhaps suggesting some dumping of turf in the pit as well as crop remains. Context 924, fill of pit F874, had an assemblage that very closely paralleled that of 873. Context 927 was another pit fill, this time of pit F872. It, too, was dominated by wheat grain and spelt glume bases, but the state of preservation was better in that no indeterminable cereals were recorded.

#### *Phase 6*

- 10.50 None of the 20 samples assessed produced even reasonable amounts of remains. None, therefore, was recommended for full analysis and the rest of the sediment was discarded. Once phasing had confirmed which were, indeed, from Phase 6 it was decided to go through the assessed flots and to re-present the assessment data here. The author re-examined the flots simply to ensure data consistency. Table 5.17 presents the full data for these samples, except 349 and 1000 whose bags of seeds could not be found; nothing extra was recorded from the flots. The main issue to note is that the *Veronica hederifolia* seeds and the single cleavers (*Galium aparine*) were not charred and have, as a result, been omitted. Moderate numbers of non-charred seeds were present in several of these samples, which is not typical for the site as a whole.
- 10.51 Context 54, it is suggested, has material incorporated from earlier occupation given the presence of both spelt and emmer wheats. As a ditch fill this might not be un-expected. Nothing in the way of bread wheat was recorded. Unfortunately, nothing really may be said about the Saxon occupation of the site from the point of view of the plant remains except to reiterate that material should not be discarded until final phasing has been completed; even low concentrations of seeds might be of use for under-recorded periods or site types.

#### **Discussion**

- 10.52 The plant remains from the earlier phases of occupation are clearly different from those of the Roman phases, being dominated by emmer wheat and naked barley. This would be in accord with the limited data from elsewhere within the region and would suggest a Bronze Age date of occupation at Quarry Farm. Radiocarbon dating has confirmed this. The samples recorded had assemblages typical of a fully processed crop. Flax was recorded from these phases with only a single seed coming from later material. Weed seeds were characteristic of taxa from well-manured and damp ground more akin to present-day allotments or vegetable plots. These are clearly different assemblages from those of the Roman phases of occupation.
- 10.53 The Roman phases are generally dominated by spelt wheat and hulled barley, although limited amounts of bread wheat, oats and rye have been recovered. None of these is in sufficient quantity to suggest deliberate cultivation as they may have been imported with original seed grain from elsewhere. Weed seeds are not especially abundant which is not usual for the region and this type of

site, where the bulk of the remains tend to reflect crop processing debris. Use of a wider range of soil types is seen during the main villa phases. A few of the weed seeds suggest cultivation on the heavier clay soils, elsewhere in the region generally only brought into cultivation later on and into the Saxon period. However, they are more common on sites, typically villas or larger farmsteads, in southern England and, with the nature of this site, this may reflect social status. Are the villas required to produce so much grain as to require cultivation of what would normally be considered marginal land, especially that which was heavy and less easy to plough?

- 10.54 There is a remarkable consistency across the Roman phases with the majority of the samples reflecting mostly fine sieving products. The material is frequently associated with the ovens and flues and might reflect debris from the (over)parching of spelt spikelets prior to pounding to release the grains. It might also reflect the use of these by-products as kindling with some of it being blown along the flues, being charred and surviving rather than ashing away completely in the fire. Whichever is the case, the presence of such quantities of material would suggest that the spelt wheat was being grown locally and probably by the occupants of the villa. The paucity of weed seeds is interesting. Although it could at least in part reflect the generally rather poor state of preservation, even the most robust seeds are not common. It would therefore seem that the crops represented in these samples were grown under rather clean conditions - small weed seeds should be removed at the same stage as the small chaff which is nonetheless dominant in many of these samples - rather than taphonomic considerations. For whatever reason, it seems that the crops produced at this site were more weed-free than many of the native sites elsewhere in the region. For example, at Thorpe Thewles, Stanwick and Rock Castle, more than 50% of the overall assemblages was weed taxa (including *Sieglingia decumbens* as a weed) (van der Veen 1992). The equivalent value for the Quarry Farm overall assemblage was 24%.
- 10.55 In terms of quality of crop, the hexaploid wheat grains were of a good size and the spelt glume bases comparable with other local material although considerably larger than material at the north western edges of the empire from Carlisle. This would lead further credence to the argument that much of the cereal crop in use at Quarry Farm was locally produced.
- 10.56 Unfortunately the low numbers of remains from Saxon samples led to a recommendation for no further analysis and the sediment was discarded.
- 10.57 The site has produced a useful assemblage from particularly the Roman phases of occupation. Whilst it confirms the use of predominantly spelt wheat, barley is rather less in these contexts than on many native sites in the region. Likewise the weed taxa are less common. It could therefore be argued that the villa had both a more proscriptive agricultural regime and that it had more facilities or personnel for mundane tasks such as weeding. If it had a confirmed market, such as the military, then a quartermaster could, perhaps, dictate the military requirements more easily to a villa manager than to small independent farmers.

**Pollen** by Dr Helen Ranner

**Summary**

- 10.58 Following assessment, full pollen analysis was undertaken on the lowest fill context [482] of ditch [483]. One ml of sediment was processed using standard procedures (Barber 1976), which included density floatation (Moore *et al.* 1991) in order to concentrate the pollen, and >500 grains were characterised. Identification of pollen and spores was undertaken using the key from Moore *et al.* (1991) supported by comparison with modern reference material. Plant taxonomic nomenclature follows Stace (1997).

**Results**

- 10.59 The pollen spectrum from this sample was dominated by *Alnus* (alder) and Poaceae (grasses) with some *Corylus* (hazel). There are occurrences of *Betula* (birch), Pineaceae (pine family), *Salix* (willow) and *Quercus* (oak). In addition, there is a range of wide niche taxa, and two heath taxa, *Calluna vulgaris* (heather) and *Pteridium aquilinum* (bracken). A few spores indicate the presence of other ferns and mosses. The results are presented in Table 5.18.

**Discussion**

- 10.60 The pollen assemblage in context [482] appears to be dominated by pollen from alder; however, grass pollen was also very abundant. The latter has been difficult to positively identify in this sample; the grains are relatively fragile and easily crumpled such that the definitive pore feature cannot always be identified. It is therefore likely that grasses have been underestimated in this analysis. The alder would have grown in areas of damp ground, and the level of pollen suggests that there was a local alder carr, with perhaps occasional willow and birch. These alder would have provided a local source of wood, and may well have been coppiced. The pollen from *Corylus* indicates hazel scrub, which would have provided a source of nuts for food, and the presence of a few grains of *Quercus* pollen attest to local or regional sourcing of supplies of oak (see section on charcoal). The combined occurrence of small amounts of pollen and spores from heather and bracken suggests some localised heath areas.
- 10.61 A range of herbaceous taxa were also recorded, of which grasses were most abundant, although some of these may have been semi-aquatic taxa associated with the alder carr; this suggests substantial areas of open ground around the site. These areas may have included farmed land as several of the herbaceous taxa including, *Plantago lanceolata* (ribwort plantain), *Ranunculus*-type (Buttercup-type), and Asteraceae (daisy family), are particularly associated with past agricultural activity (Behre 1986; Fenton-Thomas 1992). There was no pollen found that was indicative of any of the major cultivated cereal species, and this is in common with other palynological studies at Roman sites in the area, where cereal-type pollen is occasionally present but not considered to be significant (Huntley & Stallibrass 1995). Pollen from wheats and barleys are notorious for their poor dispersal since they reproduce almost entirely by self fertilisation (Robinson & Hubbard 1977), and therefore are unlikely to

register in environmental samples that are not collected in the immediate area of cultivation.

- 10.62 The pattern of low arboreal pollen with high grass pollen, and some taxa associated with agricultural practice, is seen in other pollen studies of this period carried out locally, at Hutton Henry and Thorpe Bulmer (Turner 1979). Turner also indicates a well-forested landscape in the area during most of the Iron Age, with forest clearance taking place during the late pre-Roman Iron Age, thus facilitating agricultural expansion during the Roman period. The balance between arable, pasture and woodland in the immediate vicinity of the site cannot be identified from this level of pollen data, and as with the environmental evidence for the Roman impact on vegetation near Carlisle (McCarthy 1995), it must be assumed that the hinterland supported a mixed economy.
- 10.63 Overall, the pollen analysis indicates a local mosaic of open habitats. This included agricultural land, with perhaps a mixture of arable and pastoral activity, and a substantial area of alder carr with some drier heath on the higher ground. Oak and pine formed components of the regional woodland.

**Radiocarbon dating** by *W Derek Hamilton, Peter Marshall, Jennifer Jones, Christopher Bronk Ramsey, and Johannes van der Plicht*

**Summary**

- 10.64 A total of 12 samples were submitted for dating by Accelerator Mass Spectrometry (AMS) at the Centre for Isotope Studies, The University of Groningen, The Netherlands and the Oxford Radiocarbon Accelerator Unit (ORAU). The samples submitted to Groningen were prepared using methods outlined in Aerts-Bijma *et al.* (1997; 2001) and van der Plicht *et al.* (2000). Those submitted to ORAU were prepared according to methods given in Bronk Ramsey *et al.* (2000; 2004a) and measured as described in Bronk Ramsey *et al.* (2004b).
- 10.65 Both the Groningen and ORAU laboratories maintain continual programmes of quality assurance procedures, in addition to participation in international inter-comparisons (Scott 2003). These tests indicate no laboratory offsets and demonstrate the validity of the measurements quoted.

**Results and discussion**

- 10.66 Two samples, the bone handle of a metal tool from pit [334] and a fragment of a femur from burial 3 [F587], failed to yield sufficient collagen for a radiocarbon date, but the other ten samples were dated successfully. The results, given in Table 5.19, are conventional radiocarbon ages (Stuiver and Polach 1977), and are quoted in accordance with the international standard known as the Trondheim convention (Stuiver and Kra 1986).
- 10.67 The calibrations of these results, relating the radiocarbon measurements directly to calendar dates, have been calculated using the calibration curve of Reimer *et al.* (2004) and the computer program OxCal (v3.10) (Bronk Ramsey 1995; 1998; 2001). The calibrated date ranges for these samples are given in

Table 5.19 and have been calculated using the maximum intercept method (Stuiver and Reimer 1986), and are quoted in the form recommended by Mook (1986), with the end points rounded outwards to 10 years if the error term is greater than or equal to 25 radiocarbon years. The graphical distributions of the calibrated dates, shown in tables 5.20 and 5.21, are derived from the probability method (Stuiver and Reimer 1993).

### ***Stable isotopes***

- 10.68 The stable isotope values ( $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$ , see Table 5.19) for the human bone dated are consistent with a very largely terrestrial diet and are not likely to have any effect on the radiocarbon dating (Chisholm *et al.* 1982; Mays 2000). The C:N ratios suggest that bone preservation was sufficiently good to have confidence in the radiocarbon determination (Masters 1987; Tuross *et al.* 1988).

### ***General approach***

- 10.69 The Bayesian approach to the interpretation of archaeological chronologies has been described by Buck *et al.* (1996). It is based on the principle that although the calibrated age ranges of radiocarbon measurements accurately estimate the calendar ages of the samples themselves, it is the dates of archaeological events associated with those samples that are important. Bayesian techniques can provide realistic estimates of the dates of such events by combining absolute dating evidence, such as radiocarbon results, with relative dating evidence, such as stratigraphic relationships between radiocarbon samples. These ‘posterior density estimates’, (which, by convention, are always expressed *in italics*) are not absolute. They are interpretative estimates, which will change as additional data become available or as the existing data are modelled from different perspectives.
- 10.70 The technique used is a form of Markov Chain Monte Carlo sampling, and has been applied using the program OxCal (v3.10) (<http://units.ox.ac.uk/departments/rlaha/>), which uses a mixture of the Metropolis-Hastings algorithm and the more specific Gibbs sampler (Gilks *et al.* 1996; Gelfand and Smith 1990). Details of the algorithms employed by this program are available from the on-line manual or in Bronk Ramsey (1995; 1998; 2001). The algorithms used in the models described below can be derived from the structure shown in Table 5.20 and 5.21.

### ***Aims and sampling***

- 10.71 The aims of the dating programme were to:
1. provide dating evidence for two individual burials with no grave goods
  2. provide dating evidence for the understanding of a pit complex
  3. date the carbonised residue adhering to the interior of a Bronze Age food vessel, found in a pit with two other Bronze Age vessels
  4. date an important archaeobotanical assemblage from the fill of an isolated pit [F416]
- 10.72 The first stage in sample selection was to identify short-lived material, which was demonstrably not residual in the context from which it was recovered.



The taphonomic relationship between a sample and its context is the most hazardous link in this process, since the mechanisms by which a sample came to be in its context are a matter of interpretative decision rather than certain knowledge. All samples consisted of single entities (Ashmore 1999). Material was selected only where there was evidence that a sample had been put fresh into its context. The main categories of material, which met these taphonomic criteria were:

- Articulated animal bones. Articulated animal bone deposit must have been buried with tendons attached or they would not have remained in articulation, and so were almost certainly less than six months old when buried (Mant 1987).
- Human bone. Inhumations were almost certainly articulated when buried.
- Concentrations of charcoal; where they formed substantial and discrete deposits likely to represent a “single event”.

### ***Model development and analysis***

#### *Bronze Age vessel*

- 10.73 Sample 2 [283] (GrA-33524; 3745 ±45BP) was a sherd of a Bronze Age food vessel that was recovered from a pit with two other Bronze Age vessels. The result of the radiocarbon dating of a carbonised residue from the interior of the sherd provides a calibrated date of 2290–2020 cal BC (95% confidence).

#### *Bronze Age cereals*

- 10.74 An isolated pit [F416] contained a single fill [415], which yielded a rich archaeobotanical assemblage, dominated by emmer wheat (*Triticum dicoccum*) and naked barley (*Hordeum vulgare* var. *nudum*), which are characteristic of Bronze Age agriculture in northern England. Two samples were dated, to test whether this was a Bronze Age assemblage, or a relatively late occurrence of these cereals in the Romano-British period. Sample 10 [415] consisted of a carbonised grain of emmer and Sample 11 [415] of a carbonised grain of naked barley. The results, (OxA-17825, 3074 ±26BP, and OxA-17863, 3064 ± 31BP respectively) are statistically consistent ( $T' = 0.1$ ,  $T'(5\%) = 3.8$ ,  $v = 1$ ; Ward & Wilson 1978), and it is therefore possible that the two samples are of the same calendar date, as might be expected if the fill of this pit represents a single event. The best estimate of the date of this context is given by the calibration of OxA-17863, which is 1420–1250 cal BC (95% confidence).

#### *Burials*

- 10.75 Sample 7 [F541] Burial 1 (OxA-16839; 1728 ±28BP) was from Inhumation F578, which was placed in a north-south aligned grave, with the head placed to the south. This burial dates to cal AD 230-400 (95% confidence).
- 10.76 Sample 9 [F1436] Burial 4 (OxA-16840; 1741 ±28BP) was from a north-south aligned grave that cut a Roman corn-dryer. This burial provides a *terminus ante quem* for the use of the corn-dryer and dates to cal AD 230–390 (95% confidence).

*Pit complex*

- 10.77 There were no stratigraphic relationships between the five pits from which samples were submitted. However a model was constructed based on the assumption that the pits all belonged to a continuous period (either long or short) of use at the site. The model goes further in assuming that ‘pit-digging’ activity had a beginning, end, and span, thereby using the radiocarbon results to estimate these dates. The results are given in graphical form in Figure 2.
- 10.78 It is clear straightaway that Sample 6 [347] (GrA-35010; 6055 ±40BP) is residual in its context. It has, therefore, been excluded from all subsequent modelling, shown in Figure 2 by the ‘?’ next to the laboratory number.
- 10.79 Due to the low number of results in this model, the estimates for the beginning, end, and span of use are not as precise as we would like, and therefore if further radiocarbon dating is undertaken, simulations of the effect of adding more dates to the series should be explored.
- 10.80 With the exclusion of GrA-35010, the model has good overall agreement ( $A_{\text{overall}}=91.6\%$ ). The model estimates that ‘pit-digging’ activity at the site began in *cal AD 70–550 (95% probability; Table 5.21; start)*, but more likely in *cal AD 350–520 (68% probability)*. It ended in *cal AD 470–840 (95% probability; Figure 2; end)*, but more likely *cal AD 550–690 (68% probability)*. The span of use was *1–630 years (95% probability)*, but again more likely *50–340 years (68% probability)*.
- 10.81 A chi-square test was run on the four results used in the model. This test shows that these results are not statistically consistent ( $T' = 11.0$ ,  $T'(5\%) = 7.8$ ,  $\nu = 3$ ; Ward and Wilson 1978), and suggests that these samples do, in fact, vary in age. However, by removing the result from pit [F777] (GrA-33523, 1630 ±35BP) from the chi-square test because it is typologically different (eg. dog burial v. charcoal sealed by heat-altered cobbles), the remaining three measurements are statistically consistent ( $T' = 3.8$ ,  $T'(5\%) = 6.0$ ,  $\nu = 2$ ; Ward and Wilson 1978) and so these samples could be of the same actual age.

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Archaeological Services  
Durham University

**A Romano-British villa and settlement at  
Ingleby Barwick, Stockton-on-Tees**

**archaeological excavation**

**Part C: appendices**

*on behalf of*  
**English Heritage**



Report 1709

November 2008

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## **Appendix 1: Data structure**

- A1.1 The phasing is based on the integration of the stratigraphic sequence and the analysis of the artefactual assemblage. Features are referred to by area (A-I, Figure 5). Unexcavated features are also shown on the phase plans where appropriate.

### **Natural subsoil**

- A1.2 The natural subsoil comprised glacially-deposited sands and gravels [36=68=69=118=214=1141]. In the south part of the site the underlying natural was dominated by sandy clay.

## **Phase 1: Mesolithic to Bronze Age (Figures 6 and 7)**

### **Summary**

- A1.3 A large quantity of flints was recovered during the excavation. These were all residual. The identifiable pieces indicate activity on the site during the late Mesolithic and early Neolithic periods. A Neolithic polished stone axe was recovered from a later context in Area H, and is considered likely to be a curated item. Two pits and a single gully contained Bronze Age pottery, and another pit contained cereal remains radiocarbon dated to the Bronze Age. Only a small number of features were identified from this phase, and there was no clear focus for Bronze Age activity.

### **All areas**

- A1.4 An assemblage of 230 struck flints was recovered during the excavation. These are largely undiagnostic and are most likely to be residual in later features. Those lithic artefacts which are diagnostic are nearly all Late Mesolithic to Neolithic in date and indicate activity at the site during this period. This corroborates the lithic finds recovered during fieldwalking (Archaeological Services 1997a) and the evaluation (Archaeological Services 2000b). A Neolithic stone axe was also recovered during the excavation from a later feature. It is most likely that this was a curated item.
- A1.5 Four features were located in disparate parts of the site, in the northeast, southwest and northwest, indicating a general spread of activity along the gravel terrace rather than a specific focus. Two pits and a gully contained a total of seven vessels dating to the Neolithic - Bronze Age transition period. No burnt bone was recovered from any of these features and there is no evidence that they are related to funerary practice. An oval pit [F284; 0.84m long, 0.64m wide and 0.28m deep] was located towards the eastern edge of Area C. It was filled by greyish-brown sandy silt [283] with frequent inclusions of angular stones up to 0.13m in size. This pit contained fragments of three vessels dating to the late Neolithic and early Bronze Age. Vessels One and Three belonged to the northern Peterborough Ware tradition, while Vessel Two was probably a food vessel or food vessel urn. Carbonised residue from Vessel One in deposit 283 was submitted for radiocarbon dating and produced a date of 2290-2020 cal BC (95% certainty).
- A1.6 An irregularly-shaped pit [F724; 1.16m long, 1.03m wide and 0.14m deep] was located in Area G. It was filled by brown silty sand with frequent gravel

inclusions [723]. This pit also contained fragments of three early Bronze Age vessels. Vessels 4 and 6 were All-Over Cord Decorated beakers, and Vessel 5 was a rare All-Over Comb Decorated European beaker. Vessels 4 [721] and 6 [722] had been placed inverted within the pit.

- A1.7 Gully F1002 [3.3m long, 0.68m wide and 0.25m deep] had a U-shaped profile and was aligned east-west within Area G. It was filled by a friable mottled black and brown sandy silt [898] which contained occasional stone inclusions. The deposit also contained sherds of Vessel 7, a possible beaker of indeterminate form. Eight flints were also recovered from this feature, four being undiagnostic and the remainder being Mesolithic or early Neolithic in date. One of the undiagnostic artefacts was a small round scraper with evidence of retouch.
- A1.8 A further pit [F416/415, Area E] contained naked barley and emmer wheat consistent with Bronze Age or early Iron Age agricultural practice. Samples from the naked barley and emmer wheat were selected for radiocarbon dating; the emmer seed producing a date of 1420-1260 cal BC, and the naked barley a date of 1420-1250 cal BC.

## **Phase 2: late Iron Age (Figures 8 and 9)**

### **Summary**

- A1.9 Several further features pre-dated the Romano-British enclosures. A roundhouse was excavated in the southwestern corner of the site, indicating that there was late prehistoric occupation of the site, as the feature itself was cut by later gullies associated with the Romano-British enclosure system. Other features were also identified, including two pits containing exclusively Iron Age tradition pottery, a steep-sided ditch cut by the later north-south boundary ditches, and a small pit which was cut by the later *caldarium*.
- A1.10 Features interpreted from the aerial photographs, geophysical survey and initial excavation (Heslop 1084) as possibly Iron Age have also been included on the phase plan. These include a possible second roundhouse west of the winged corridor house. This and some other curvilinear features indicate that there may have been extensive activity during this phase.

### **Area A**

#### *Roundhouse, pit*

- A1.11 A roundhouse construction gully [F165], with post- and stakeholes in the base [F197; F199; F201; F203; F205; F207], was identified in the extreme southwest part of the site. These were filled by dark brown sandy silt [164; 196; 198; 200; 202; 204; 206]. The entrance to the roundhouse was identified to the southeast. The gully was cut by later enclosure ditches.
- A1.12 A sub-circular pit [F169; 1.14m long, 0.86m wide, 0.42m deep] was located within the roundhouse, with which it may be associated. It was filled by dark greyish-brown sandy silt [168].

*Ditch*

- A1.13 In the north part of the area a deep, steep-sided curvilinear ditch was identified [F113; 0.82m wide and 1.4m deep]. The ditch was filled by a series of silty sands/gravels and clay [70; 225; 266; 227; 228; 229; 230]. The ditch was cut by the later villa enclosure ditch.

**Area C**

- A1.14 A pit was identified cutting the natural subsoil [F1062; 0.8m long, 0.68m wide and 0.15m deep]. This was filled by brown sandy silt [1061]. The pit was later truncated by the construction of the Phase 3a *caldarium*.

**Area E**

- A1.15 An oval pit [F418; 1.22m long, 1.05m wide and 0.73m deep] was filled with dark grey friable silty sand [417]. This contained frequent inclusions of barley and indeterminate cereal remains, as well as a sherd of pottery that is possibly of late Iron Age tradition.

**Area G**

- A1.16 A pit [F1001; 1.36m long, 1.08m wide and 0.26m thick] may have been a hearth as it contained a large amount of fire-cracked stones; natural sand had been affected by *in situ* burning and the fill, a dark grey sandy silt [1000], contained an ash lens.

**Area I**

- A1.17 Excavation within this area was not conducted, but a feature relating to this phase was recorded. Pit [F1465; 0.50m long, 0.43m wide] was filled with dark brown friable sandy silt with occasional inclusions of charcoal [1464=1462]. This contained twelve sherds of pottery which possibly belong to the Iron Age tradition.

**Phase 3a: Hadrianic to Antonine (Figure 10)**

**Summary**

- A1.18 The main phases of occupation of the site took place in the Romano-British period. A winged corridor house was established with several ancillary structures (Area C), including a large rectangular aisled building with several internal postholes forming roof supports, and a small hypocausted *caldarium* with an associated drainage gully. The original flooring of the *caldarium* comprised sandstone blocks. Several features to the west of the aisled building (Area C), including a north-south wall, a short section of wall with culverts, an oven, a gully and a small rectangular feature are all assigned to the earliest phase of villa activity. A number of features in the southeastern corner of the site (Area B) were also cut by later features, and are therefore assigned to the earlier Romano-British period. These include several pits and a short gully. A heavily truncated north-south ditch was also identified.
- A1.19 Much of the enclosure system (Areas A, E, F, G and I) is likely to date to this period: a sample of the enclosure ditches was excavated. The system comprised several rectilinear enclosures to the west of the winged corridor house, both to the north and south of the preserved area, with further



enclosures to the northeast. An oven and a large rectangular pit were identified in the north of the site (Area F), and several discrete pits and postholes were located within the enclosures.

### **Area A (Figures 11 and 12)**

- A1.20 The first phase of Romano-British activity saw the establishment of a rectilinear enclosure system. In Area A this was defined by a three-sided enclosure, with ditches on the eastern, southern and western sides and entrances in the northwestern and southwestern corners. Several north-south and east-west ditches were also identified sub-dividing the enclosure. A sinuous ditch, presumably reflecting an adaptation to the entrance to the enclosure system, was identified immediately to the west of the enclosure. A number of isolated features were identified within the enclosure system, including pits and stone spreads. One large and four smaller pits were also identified beyond the western edge of the enclosure. No focus was identified for any of the discrete features.

#### *Enclosure ditches*

- A1.21 Three separate ditches formed the rectilinear enclosure. The eastern side was defined by a north-south gully [F184; at least 47m long and 0.39m wide] in the southeast part of the area (Figure 11.2). This was filled by dark greyish-brown sandy silt [183]. The central section of gully F184 divided into two narrow, steep sided gullies [F160; F162]. These were both filled by mixed orangey-brown sand and clay [159; 161]. No stratigraphic relationship was established between these features. The ditch extended to the south, implying that further enclosures lay beyond the limits of the excavation. A V-shaped east-west ditch [F12=F30=F32=F34=F106=F181; over 44m long, 1.2m wide and 0.57m deep], perpendicular to F184, formed the southern side of the enclosure (Figures 11.2 and 12.4). This ditch was filled with greyish-brown sandy silt [11=31=33=105=180]. The western edge of the enclosure system was defined by a north-south ditch [F6=F167=F1138=F1163; 74m long, up to 1.52m wide and 0.62m deep], perpendicular to F12 and parallel with F184 (Figure 11.1 and 12.4). The full length of this ditch was determined (Figure 10), with ditch terminals identified at the north and south ends of the feature. This was filled by greyish-brown sandy silty-clay [8=166=1137=1162]. This boundary continued into Area G where it terminated (see paragraph A1.70).
- A1.22 An east-west ditch parallel with F12 [F83=F96=F134=F163; over 17m long, 1.68m wide and 0.51m deep] was identified in the central part of Area A (Figures 11.2). It was filled by redeposited natural, a red-brown clayey sand with gravel inclusions [82=95=133=155]. The eastern part of the feature was observed turning northward, but was completely truncated by a later north-south ditch (see Phase 3b). Further ditches and gullies were observed to run parallel with F12 but were not excavated (Figure 10).
- A1.23 A further ditch [F98; 18m long, 2.45m wide and 0.33m deep] was identified traversing the area to the south of ditch F83 and extending east of the enclosure (Figure 11.2). It was filled by greyish-brown sandy silt [97].

*Other boundary features*

- A1.24 In the northwest corner of the area, immediately west of the preserved area, two gullies [F1145; F1155; 0.5m wide and 0.2m deep] were identified (Figure 11.1). They were filled by greyish-brown sandy silt [1144; 1154]. The southern terminal of the curvilinear gully F1145 was identified: this was 53m long, 0.67m wide, and 0.26m deep. The gully was filled by dark brown silty sand [1144], traversed the area in a northerly direction and joined ditch F6. The northern end of the gully terminated within Area G, and was not excavated. Gully F1155 was aligned east-west, but was truncated at its western end, while its east end continued into the preserved area.

*Features inside the enclosure: hollow, pits; postholes, stone spreads*

- A1.25 A large hollow was identified in the north part of the area [F144=F147; over 5.5m long, over 3.6m wide and 0.35m deep] (12.1). It was filled by greyish-brown clayey silt [146].
- A1.26 Four pits were identified within the enclosure [F65; F142; F209; F217]. Elongated oval pit F65 [4.7m long, 1.47m wide and 0.84m deep] was filled by dark brownish-grey sandy silt [76], overlain by yellowish red-brown silty sand [75] (Figure 12.3). Above this a deposit of dark greyish-brown sandy silt [64] filled the upper part of the pit, from which a substantially complete beehive quern stone was recovered. Circular pit F142 [0.9m in diameter and 0.26m deep] was filled by mottled greyish-brown to black silty sand [135] (Figure 12.3). Fire-cracked stones were identified within the fill, but there was no sign of *in situ* burning. Oval pit F209 [0.4m long, 0.27m wide and 0.17m deep] was filled by greyish dark brown loose and friable sandy silt [208] (Figure 12.4). Oval pit F217 [2.2m long, 0.83m wide and 0.33m deep] was filled by black sandy silt [216], overlain by light brown sandy-clay [215] (Figure 12.2).
- A1.27 Four isolated areas of stone spreads were identified [F5; F29; F40; F179]. Feature F29 [4m long and 2.25m wide] overlay the fill of pit F217 and comprised large sandstone slabs (Figure 12.2). These are likely to be the remains of a surface. Feature F40 [over 1.5m long and 0.97m wide] comprised a linear spread of stone slabs (Figure 12.1). This included one large slab measuring 0.72m by 0.58m. The soil matrix around the slabs comprised dark greyish-brownish-black sandy silt [120]. Stone spreads F5 [0.7m long and 0.7m wide] and F179 [0.43m long and 0.43m wide] were both discrete, located in the south part of the area (Figure 12.4). The former comprised sub-angular and angular stones ranging from 0.3m-0.15m in diameter. The latter comprised small tightly-packed stones. These both lay directly on the natural subsoil and may have been post-pads, although they were not associated with any other structural remains.

*Features outside the enclosure*

- A1.28 Other isolated features were identified in the northwest corner of Area A, west of the preserved area (Figure 11.1). A posthole [F1151; 0.38m in diameter and 0.14m deep] was filled by dark brown silty sand with gravel inclusions [1150]. A large circular pit F1147 [2m in diameter and 0.45m deep] was filled by light brown gravelly and silty sand [1146]. Three

smaller circular pits [F1165; F1167; F1169; each about 0.7m in diameter and up to 0.4m deep] were filled by similar dark brown sandy silt [1164; 1166; 1168].

#### **Area B (Figure 13.4)**

- A1.29 Area B was located to the east of the enclosure system, but was an important focus of activity in the Romano-British period. Its location in the southeastern corner of the site meant that some of the features identified were only partially excavated as they extended beyond the limits of excavation. Phase 3a activity in this area comprised several gullies, seven pits and several postholes. No structures were identified.

#### *Gullies*

- A1.30 Several short lengths of gullies were identified [F329; F398; F917]. The terminal of F329 [over 1.37m long, 0.53m wide and 0.27m deep] was excavated, the remainder of this east-west aligned feature continuing beyond the baulk. It was filled by light brownish-grey silty sand [328]. Gully F398 [over 1.6m long, 0.82m wide and 0.38m deep] traversed the extreme southeast part of the area on a north-west/south-east alignment. It was filled by silty-clay [397]. Curvilinear gully F917 [0.57m long, 0.53m wide and 0.37m deep] was filled by brownish-grey friable sandy silt [916].

#### *Postholes; pits*

- A1.31 Four postholes [F422; F424; F426; F956; up to 0.58m in diameter and 0.37m deep] were filled by silty sand [421; 423; 425; 955]. These were located close to the eastern limit of excavation and so it was not possible to determine whether these were part of a larger structure. Seven pits were also excavated in this area [F224; F327; F569; F786; F817; F820; F915]. A steep sided circular pit [F224; about 1m in diameter] was filled by mottled dark greyish-black silty-clay [223]. The north part of the pit had been cut more deeply and may have held a post. Pit F327 [0.72m long, 0.42m wide and 0.51m deep] was filled by brown sandy-clay [326] and cut the postholes F424 and F426. The sub-circular pit F569 [over 0.55m long, 0.49m wide and 0.19m deep] was located directly south of the villa enclosure ditch and was filled by silty-clay [568]. Two postholes were identified in the base of the pit [F573; 0.45m in diameter and 0.12m deep; F582; 0.51m in diameter and 0.13m deep]. The former was cut by a Phase 5c pit [F571]. The latter posthole was contemporary with the pit and had a similar fill [581]. Sub-angular stones identified within the pit and the contemporary posthole may be post-packing.
- A1.32 Pit F786 [0.65m long, 0.58m wide and 0.18m deep] was filled by blue-grey silty-clay [785], pit F817 [1.08m long, 0.66m wide and 0.36m deep] by dark brownish-grey silty-clay [816], pit F820 [1.13m long, 0.68m wide and 0.17m deep] by light yellow silty-clay [837], and pit F915 [2.35m long, 1.10m wide and 0.71m deep] by brownish-grey sandy silt [913; 0.28m thick], overlain by dark blueish-black organic silty-clay [912; 0.27m thick]. Pit F915 cut the fill of the contemporary gully F917.

*Postholes; gully*

- A1.33 Two further postholes and a gully were identified cutting features of this phase. The first [F222; out 0.4m in diameter and 0.25m deep] was located in the west of the area, and was filled by dark grey silty-clay [221]. F222 cut pit F224. Posthole [F819; 0.76m in diameter and 0.26m deep] was identified cutting the centre part of pit F820, and was filled by brownish-grey silty-clay [818]. Gully F957 [0.95m long, 0.37m wide and 0.12m deep] cut posthole F956 (see paragraph A1.31). It was filled by silty sand [954].

**Area C (Figure 13)**

- A1.34 This area is located to the east of the enclosure system. Two buildings were identified in this phase of activity. A large rectangular aisled building was constructed to the southeast of the winged corridor building, and a small *caldarium* to the east. There was no dating evidence directly associated with the construction of either of these buildings. Evidence for further structures was located to the west of the aisled building, comprising parts of several walls. A gully, posthole and two pits were also present in this part of the area. Three stone clusters were identified north and northwest of the aisled building, but they were not associated with any structures. Three stakeholes were also excavated. A small pit was excavated to the west of the *caldarium*.

*Aisled building [F268] (Figure 13.4; Plate 1)*

*Construction: walls, posts*

- A1.35 The remains of a large stone aisled building with external dimensions of 29m long and 10.8m wide were excavated to the southeast of the winged corridor building. The north [F454] and south walls of the building comprised a single course of stone with dressed outer facing stones and rubble core infill. There was no foundation for these walls, which directly overlay the natural. Nearly two-thirds of the south wall had been removed by ploughing. The east [F583] and west [F467] gable end walls were of a more substantial construction, with their foundations cutting the natural. The foundation cut [F408; 10.92m long, 1.66m wide and 0.45m deep] for wall F583 was filled by three foundation deposits comprising clay with frequent sub-rounded and angular sandstone rubble [412; 411; 410]. Built on top of this foundation was the wall [F409, up to 1m wide and 0.47m high]. Up to four courses of the wall survived with outer facing stones of dressed sandstone blocks. Chisel marks were noted on several of the blocks. The rubble core of the wall comprised stone rubble in a gritty silt matrix. The foundations of the west wall [F468; 10.7m long, up to 1.2 wide and 0.4m deep] were filled by clay and sandstone rubble [467]. Built onto the foundation was a wall [F576] of the same construction as F583, surviving to one course in height. The foundations for the short gable end walls were substantial enough to be able to support a masonry wall two stories high, with loft space above. In contrast, the long north and south walls had no foundation, indicating either timber or stone and timber construction above the stone footings to a single storey.
- A1.36 Three postholes were identified cutting the natural in the north part of the building [F1072; 0.97m in diameter and 0.31m deep; F1074; 0.68m in

diameter and 0.13m deep; F1250; 1.04m in diameter and 0.37m deep], all filled by greyish-brown clayey sand and stone post-packing [1071; 1073; 1249]. Three further postholes (unexcavated) were identified within the southern part of the building [F523; 0.45m long, 0.32m wide; F524; 0.49m long, 0.42m wide; F525; 0.36m long, 0.26m wide]. The postholes formed equally spaced linear arrangements aligned with the axis of the building and would have held aisle posts supporting timber roof trusses.

*Square structure [F241] (Figure 13.4)*

- A1.37 To the west of the aisled building a small, possibly square, stone structure was identified. This was an east-west aligned linear wall [F241], comprising six faced blocks. The wall measured 1.7m long, 0.5m wide and 0.24m high. Each end of the north part of F241 was abutted by two stone culverts [F315; F317]. These both comprised two parallel lines of stone slabs set upright, and were filled with brown sandy silt [316]. The south-facing part of the wall was abutted by three fragments of a large sandstone slab [F298; 1.43m long, 0.47m wide and 0.14m in height]. The slab is an architectural fragment, exhibiting tool marks and a rebated edge. It is clear that the slab was re-used and that the smaller fragments were placed at the opposite from the original end of the main body of the slab. The slab may originally have formed part of an opening, such as a door jamb or lintel.

*Possible structures west of the aisled buildings (Figure 13.4)*

- A1.38 South of the small stone structure F241 a construction slot was identified [F1407; F1409]. The slot comprised two parallel sides [0.5m long], meeting at the north end and forming a horseshoe shape. The base of the slot was slightly concave/flat and was filled with brownish-grey sandy-clay containing large square and rectangular stone blocks, forming a foundation [1406; 1408].
- A1.39 South of this a small length of possible wall line was identified [F331; 1.1m long and 0.3m wide] comprising a line of upright stones overlying the gully F1409.
- A1.40 To the southwest of the aisled building the foundations of a linear north-south aligned stone wall was identified. The wall foundation [F308; 8.5m long, 0.6m wide and 0.2m deep] cut the natural subsoil and was filled by brown sandy silt [307]. The wall foundations [F296; 0.5m wide and 0.15m deep] were set into this material, comprising a single course of sandstone fragments set on edge and pitched northward.
- A1.41 A short section of a northeast-southwest aligned linear wall [F297; 0.9m long, 0.28m wide and 0.25m high] was identified south of the circular stone building. The wall comprised one course of six faced blocks.

*Pit; gully; posthole (Figure 13.4)*

- A1.42 An oval pit [F1450; 1.2m long, 0.68m wide and 0.47 deep] was identified 25m west of the aisled building (Figure 13.5). It was filled by orangey-yellow sand [1449; 0.23m thick], overlain by dark brown sandy silt with frequent sandstone fragments inclusions [1448; 0.26m thick] capping the pit.

A shallow pit [F259; over 0.9m long, 0.42m wide, 0.22m deep] was excavated to the southwest of the aisled building. It was filled by tightly packed stone within a brown silty sand matrix [258]. This was cut by a narrow gully [F248; 3m long, 0.36m wide and 0.09m deep] which traversed part of the site parallel to the main east-west enclosure ditch. This was filled with brown silty sand [247]. A posthole was identified in the base of the gully [F250; 0.24m in diameter and 0.3m deep] indicating this was a construction trench. The posthole was filled with brown friable silty sand [249]. The eastern terminal of the gully was identified.

*Heated room (Caldarium) [F301] (Figure 13.1; Plate 2)*

*Construction: walls, hypocaust, floor and wall lining*

- A1.43 A stone-built *caldarium* was excavated to the east of the winged corridor building. This was built in a construction pit [F406; 3.8m long, 3.4m wide and 0.72m deep] which cut the Phase 2 pit F1062. The pit had vertical sides and a flat base and was filled by a foundation deposit [1371; up to 0.36m thick] comprising two layers of sub-angular and angular sandstone rubble, within a layer of yellow clay.
- A1.44 The stone building F301 was constructed directly over the rubble and clay foundation and over a stone slab in the north part of the cut, which formed the base of a flue [F520]. The stone slab base continued into the building with two further slabs [517]. The walls [F545; F518; F519; 0.6m wide and up to 0.77m high] had well-dressed faces on the inner and outer parts of the wall, the facing stones tapering inward. A rubble core was present between the facing stones and the stones were all bonded with clay. Up to seven courses of stone survived except on the west part: the wall here had been truncated by later activity and only one course was identified. The internal area of the building measured 2.47m long and 1.84m wide. Behind the walls the construction cut was backfilled with clay [1060].
- A1.45 Three postholes [F1113; 0.23 long, 0.16m wide and 0.12m deep; F1115; 0.31m long, 0.24m wide and 0.16m deep; F1117; 0.17m long, 0.13m wide and 0.13m deep] were identified cutting the foundation deposit in the west part of the building. These formed a linear alignment orientated north-south and may have held posts associated with the construction of the structure. These were all filled with light brown gravelly sand [1081; 0.05m thick], which also formed a layer covering the entire area within the building.
- A1.46 Overlying deposit 1081 was a hypocaust comprising 20 *pilae* [F1017]. The *pilae* were placed on bases [F1051]: of these 15 comprised stone slabs (14 of which were red sandstone) and four *pilae* stood on the two large flooring slabs F517. One *pila* overlay both the red sandstone base and the floor slabs. Two of the *pilae* were placed directly onto a thin clay base. Similar clay had been used to bond the other *pilae* and their bases. A thin light brown gritty deposit was identified below the rest of the bases [1052]. In the west part of the building five of the *pilae* had been removed by later activity, with just their bases remaining. Of the remaining *pilae*, 13 comprised sandstone uprights (roughly tooled): all but one of these was squared off. The remaining two were stacks of roughly-squared red sandstone slabs. The

*pilae* stood up to 0.5m in height above their bases. The *pilae* were placed in four rows, aligned on the long axis of the building, with a spacing of about 0.3m between each.

- A1.47 On top of the *pilae* was a floor comprising large red sandstone slabs [F469; 1m long, 0.6m wide and 0.1m thick]. The corners of the slabs were supported by the *pilae*. The flooring slabs in the west and south part of the building had been removed or broken by later activity. The flooring survived best in the east part of the building. The upper face of the slabs exhibited a ripple-like wave pattern, a natural pattern formed when the stone was fossilised. The red sandstone *pilae* slabs also had the same patterning. It is likely the stone was chosen specifically because of the wavy patterning, possibly forming an attractive non-slip flooring to the building, or simply providing a key for the flooring surfaces above. The slabs were bonded together and onto the *pilae* with clay. Above the floor, the east and south walls [F545] of F301 were lined with thin edge-set red sandstone slabs [F304]. These were attached to the walls using iron T-shaped nails: three of these nails were recovered, one of which was *in situ*, pinning two slabs to the wall masonry. There was no evidence of the presence of box flues within the walls, nor any flues allowing hot air to pass from the hypocaust into the walls.

*Caldarium drain (Figure 13.1)*

- A1.48 The clay backfill 1060 was cut by the construction cut [F758; 3.3m long, 0.8m wide and 0.2m deep] for a drain in the south-west part of the *caldarium*. A stone-lined drain [F756; 0.5m long] was identified within the north part of the cut, butting against F545 and filled by dark greyish-brown silty sand [754]. The base of the rest of the length of the cut was filled by a stone rubble drain [F757]. The construction cut had been backfilled by brownish-grey sandy silt [755]. The drain was cut at its southern extent by a sub-circular soak-away [F828; 1.15m long, 0.95m wide and 0.48m deep]. This was filled by dark greyish-brown sandy silt [825]. A re-cut of the soak-away was identified [F876; 0.84m in diameter and 0.3m deep], filled by yellowish-grey silty sand [875].

*Gully*

- A1.49 A gully [F729; 1m long, 0.63m wide, 0.32m deep] was identified 0.9m to the east of the *caldarium* F301. This was filled by a mixed mid-dark greyish-brown silty sand deposit with stone inclusions [728]. Red sandstone fragments were recovered from the fill, with the same natural ripple effect identified from the flooring slabs within F301 [469], suggesting that the feature was contemporary with the hypocaust and that both were abandoned at the same time.

*Stone clusters*

- A1.50 Two clusters of stone [F290; 1.26m long and 0.61m wide; F291; 1.2m long and 0.36m wide] were located to the north of the aisled building (Figure 13.1). A further stone cluster [F1494; 1.67m long and 0.89m wide] was identified at the southeast corner of the preserved area (Figure 13.4).

*Stakeholes (Figure 13.1)*

- A1.51 A line of three stakeholes [F354; 0.07m long, 0.06m wide and 0.06m deep; F356; 0.08m long, 0.07m wide and 0.06m deep; F358; 0.07m long, 0.07m wide and 0.07m deep] were identified in the northern part of the area. These were all filled by black sandy silt, with charcoal inclusions [353; 355; 357].

**Area D (Figure 13.3)**

- A1.52 Area D is located to the east of the enclosure system, and northeast of the winged corridor building. Early Romano-British activity was limited to an oven, a ditch, a gully, a pit and two postholes, with no focus of activity.

*Pit; ditch*

- A1.53 The oval pit [F1209; 0.74m long, 0.64m wide and 0.58m deep] was located to the east of the northeastern corner of the preserved area, and was filled with grey clayey silt [1210]. It had been truncated on its southern edge by a ditch [F1204; over 0.52m wide and 0.58m deep], which continued beneath the baulk to the west. The ditch was filled by reddy-brown sandy-clayey silt [1205] and had been truncated by the later ditch F1199, so the original width and length could not be identified.

*Oven*

- A1.54 An oven [F339] was located to the north of the winged corridor house, built within cut F340 [1.1m long, 0.7m wide and 0.4m deep]. The north part of the cut was filled with black clay [444]. Above this structure the oven was built, comprising two parallel north-south stone-walls forming the flue, with grey and orange clay bonding and surviving up to three courses deep. This was overlain by dark brownish-black silt [337], filling the oven F339. Above this and within the flue, was a mixed orange clay and silt [338]. Six small patches of black clay were identified adjacent to the west side of the feature [341], and are possibly remnants of the superstructure of the oven.

*Gully*

- A1.55 A gully [F855; 0.51m wide and 0.17m deep] was located within the north part of the area, aligned approximately north-south. This turned west at the southern end, and terminated. The gully was filled by mid-light grey slightly clayey silt [856], from which a broken dressed sandstone slab was recovered. The remains of a door socket were visible on the slab, and there were also signs of wear from the use of the door.

**Area E**

- A1.56 This area was located to the east of the enclosure system, and to the north of the winged corridor structure. A possible ditch, three gullies and a number of pits and postholes belong to the earliest phase of Romano-British activity. A large curvilinear ditch is present in the southern part of the area (Figure 10). This was unexcavated, but lay beneath a stone spread that belongs to Phase 3b. The centre of Area E was heavily disturbed by modern sheep burials and was not excavated. The main focus of activity was in the centre of the area, but no structures were identified.



*Possible ditch (Figure 13.3)*

- A1.57 A possible east-west ditch was identified [F473; 0.95m wide and 0.59m deep]. This was filled with greyish-brown silty-clay [474]. The terminal of the ditch was identified and had been heavily truncated by two later ditch cuts [F470 and F486] which were also aligned east-west, so that the extent of the feature could not be identified.

*Gullies (Figure 13.2)*

- A1.58 An east-west aligned gully [F458; 14.3m long, 0.66m wide, 0.33m deep] was identified in the southwest part of the area. This was filled by brown silty sand [457].
- A1.59 Three other short lengths of gully were identified traversing the area on an east-west alignment [F540; F553; F557]. Gully F540 [3.25m long, 0.45m wide and 0.12m in deep] was filled by dark greyish-brown sandy silt [539]. Gully F553 [10.29m long, 0.33m wide and 0.05m deep] was filled by greyish-brown sandy silt [552]. Gully F557 [10m long, 1.60m wide, and 0.17m deep] was immediately to the south of, parallel with, and wider than F553. Its western end turned to the south, and it was filled by light grey silty-clay [556].
- A1.60 The western terminal of a linear gully was also identified [F564; 1.01m long, 0.6m wide and 0.08m deep], with a north-east/south-west alignment (Figure 13.3). This was filled by brownish-grey clayey silt [565].

*Pits and postholes (Figure 13.2)*

- A1.61 Two pits were spatially associated with single circular postholes. To the east a sub-oval pit [F500; 1.23m long, 0.9m wide, 0.59m deep] was excavated. It was filled by light brown silty sandy-gravel [499]. A posthole [F502; 0.43m in diameter and 0.29m deep] was located 0.77m south of this pit, and was filled by brown silty sand [501]. A pit [F414; 1.35m long, 1.08m wide, 0.29m deep] was located in the south of the area, and was filled by brown silty sand with daub inclusions [413]. A posthole [F498; 0.3m in diameter and 0.3m deep] was located 0.58m northwest of this pit and was filled by brown silty sand [497] capped by a thin deposit of orangey-brown clay.

*Pits*

- A1.62 A circular pit was located in the west part of the area [F403; 1m in diameter and 0.38m deep]. This was filled by brown silty sand [402]. East of this were four small pits [F735; F737; F739; F1490] grouped together. The sub-oval pit F735 [0.72m long, 0.52m wide, 0.27m deep] was filled by reddish-brown gravelly-silt [736]. Pit F737 [0.83m long, 0.44m wide, 0.2m deep] was filled by grey clayey silt [738]. The sub-oval pit F739 [0.66m long, 0.44m wide, 0.18m deep] was filled by grey gravelly silt [740]; a fragment of stone saddle quern was recovered from this deposit. The sub-oval pit F1490 [1.1m long, 0.6m wide, 0.22m deep] and was filled by silty sand [1489].
- A1.63 A further pit was identified in the north of the area. A circular pit [F512; 0.8m in diameter, 0.35m deep] cut the west end of the contemporary gully

F540. It was filled by dark greyish-brown sandy silt [511]. The southern part of the fill contained fire-cracked stones, and finds recovered included flint and fragments of burnt bone.

*Postholes (Figure 13.2)*

- A1.64 A number of other postholes were also identified within this area. Two [F504; F1492; 0.3m in diameter and up to 0.35m deep] could have been associated with one another. These were filled by brown silty sand [503; 1491]. A further isolated posthole [F696; 0.48m long, 0.37m wide and 0.29m deep] was identified to the southeast, and was filled by grey clayey silt [697].

**Area F (Figure 14.1)**

- A1.65 This area formed part of the enclosure system to the north of the winged corridor building as it extended eastwards. Not all of the ditches could be excavated, and it was not possible to phase the whole system. However, five ditches do belong to the earliest phase of activity, including an east-west ditch and a contiguous north-south ditch. An oven was also identified, as well as a pit.

*Oven*

- A1.66 In the southeast part of the area a second possible oven was identified. This comprised an east-west aligned T-shaped foundation cut [F1211; over 2.8m long, 0.8m wide and 0.3m deep]. The base of the feature was filled by dark brown sandy silt [1214]. This was overlain in the east part of the feature by a concentration of tumbled stone [F1212]. Overlying these fills was a deposit of orangey-black clay [1213]. The west end of the feature was not excavated. Although no stoke pit or definite oven structure was identified, the similarity of the clay and stone fills with the other oven structures on the site suggests that this feature is the remnant of a robbed or damaged oven.

*Ditches*

- A1.67 Four enclosure ditches were identified in this part of the site. This included three east-west aligned ditches [F1295; F1332; F1445], and a north-south aligned ditch [F1247]. Ditch F1295 [over 55m long, 1.31m wide and 0.8m deep] directly cut the natural subsoil and was filled by brown silty sand [1298], overlain by yellow brown silty-clay [1297]. Above this was reddy-brown clayey silt [1296]. No stratigraphic relationship was established between this ditch and the Phase 5a ditch F1299, but later pottery was found in the fill of the latter. Ditch F1332 [22.2m long, 0.76m wide and 0.47m deep] was filled by grey sandy silt [1334], overlain by pale pinkish-brown clay [1333]. Ditch F1445 [over 4.2m long, over 0.6m wide and 0.6m deep] was filled by greyish-brown silty sand [1444]. The full width of the ditch was not excavated. Ditch F1247 [over 4.1m long, 1.3m wide and 0.41m deep] was filled by grey clayey silt [1248].

*Pits*

- A1.68 A small shallow sub-circular pit [F1160; 1.3m in diameter and 0.15m deep] was identified in the southwest part of the area, close to ditch F1348. This was filled by dark brown silt [1161].

### **Area G (Figure 14.2)**

- A1.69 Area G was located within the enclosure system. A large number of ditches were present in this area indicating intensive activity, but only a small number were excavated and phased. Four north-south ditches and one east-west ditch were present in the southwest part of the area. These are not likely to be contemporary with each other, but it was not possible to phase them more precisely.

#### *Ditches; gullies; posthole, ditch*

- A1.70 A heavily truncated east-west ditch [F771; over 1m long, 0.68m wide and 0.35m deep], filled with mid-light brown gravelly-silt [770], formed the northern part of the boundary of a later rectangular enclosure. To the west of the area a very shallow ditch [F844; 0.95m wide and 0.1m deep] filled with greyish-brown sandy silt [843] was identified. The geophysical survey indicates that this is the northern terminal of the ditch identified in Area A (see paragraph A1.21), giving it a total length of 40.9m. East of this three further gullies were identified [F809; F811; F813; up to 1m wide and 0.45m deep]. These were all filled by a similar grey-brown sandy silt [807; 810; 812]. The latter two gullies were slightly sinuous and a posthole was identified in the base of F813, indicating that the feature was a construction trench. In the northern extremity of the area (Figure 14.3), a section was excavated across a north-south ditch [F999; 1.15m wide and 0.46m deep] which partially truncated the Phase 2 pit F1001. This feature was filled by grey sandy silt [998].

### **Area H (Figure 14.2)**

#### *Ditch*

- A1.71 A linear east-west ditch [F1277= F1384; 1.48m wide and 0.47m deep], forming the southern boundary of the area, was identified. This was filled by orangey-brown clayey silt [1276=1385].

### **Area I**

#### *Oven*

- A1.72 An oven [F1468; over 2m long and 1m wide] was located in the south part of the area; this was cleaned and photographed but not excavated. The oven was aligned north-east / south-west and was built in stone bonded with orange clay. The flue was filled with dark brown sandy clayey silt and was fed from a stoke pit on the south side of the feature. This feature was similar in form to the ovens F339 and F1311.

### **Phase 3b: later Antonine (Figure 15)**

#### **Summary**

- A1.73 The aisled building continued unaltered while the *caldarium* was remodelled, with a new furnace added to the north (almost completely truncated by later activity; Area C). The terminal of a north-south ditch was excavated in Area B. The main eastern boundary of the enclosure system was established (Area A, E and F): a second ditch was also identified close to this ditch and on the same alignment, but terminated before reaching the preserved area. No stratigraphic relationship was established between the two features. It is likely that the main north-south boundary ditch remained

open throughout Phases 3 and 4. A small number of ditches and gullies relating to the enclosure system in Areas A, E and G were also excavated at this time. A large irregular pit was also identified in Area F. A series of postholes were identified in Area D. A group of these postholes form a north-south aligned fence line using pairs of postholes. On the eastern side of this line a further group of postholes formed the southeastern corner of a structure, with an internal division. The remaining postholes in this area do not appear to form any structures. More evidence of post-built structures was recorded in Area H: a semi-circular structure with a central post-setting that was re-established on several occasions was identified in the northwest corner of the area; a second group of postholes in the southern part of the site may also form a small sub-square structure; and a number of other postholes are present in this area but cannot be tied in to a particular structure. A rectangular pit was also present.

### **Area A (Figure 16)**

- A1.74 The east-west ditches and the eastern north-south ditch identified in Phase 3a were backfilled and the east-west ditches were cut by two north-south ditches that formed the main eastern boundary of the enclosure system. This boundary was re-established a number of times in later phases. The southern and western boundaries of the enclosure system are presumed to have continued in use.

#### *Enclosure system ditches*

- A1.75 A north-south ditch [F49=F72=F100=F128=F132; over 59m long, up to 2.49m wide and 0.65m deep; Figure 16.1 and 16.2] was filled by orangey-brown sandy silt [48=71=99=127=131]. This ditch cut the Phase 3a east-west ditch F134 in the north part of the area, and terminated before reaching the preserved area. A second north-south ditch [F47=F90=F174; 1.15m wide and up to 0.8m deep] was identified immediately to the east of F49. This was the first in a series of ditches along the same alignment, and truncated ditch the Phase 3a F96. It was filled by brown sandy silt [46=89=173], but the full extent of the feature could not be established as its southern end had been truncated by later ditches, while its northern end continued into the preserved area. The results of the geophysical survey suggest that this ditch continued north into Area G, and had a total length of over 134m. The Phase 3a gullies F160 and F162 were both cut on the same alignment by a third north-south ditch with a U-shaped profile [F158; over 28m long, 1.75m wide and 0.37m deep; Figure 16.2]. This was filled by greyish-brown silty sand [170; 0.20m thick], overlain by grey clay with sand and stone inclusions [157; 0.37m thick]. These three ditches are unlikely to have been contemporary, but it was not possible to phase them more precisely.

### **Area B (Figure 17.4)**

- A1.76 The pits, postholes and gullies of Phase 3a were succeeded by a large north-south ditch, a layer of sandy-clay, and another feature.

*Ditch*

- A1.77 The southern terminal of a north-south ditch [F483=F922; 2m wide and over 1.13m deep] was identified in the north of the area. The ditch terminal was filled with a slump of greyish-yellow silty sand [921; 0.49m thick]; this was overlain by reddish grey silty-clay [920; 0.18m thick]. A section excavated across the ditch north of the terminus identified a primary deposit of waterlogged dark grey sandy silt [482; over 0.23m thick]. This was below the water table and organic in nature. Pollen samples were taken which indicated that alder and grass pollen were dominant. The presence of grass pollen suggests that the area around had been cleared of vegetation; alder grows in damp ground. No cereal pollen was found within the sample.. Above this was a thin deposit of brownish-yellow silty sand [510; 0.03m thick], sealing the waterlogged deposit. This was overlain by successive bluish-grey silt fills [481; 0.2m thick; 480; 0.16m thick; 479; 0.17m thick]. A sandy-clay deposit [509=919; 0.11m thick] was identified above these fills.

*Layer; feature*

- A1.78 A greyish-brown sandy-clay layer was identified overlying part of the area [396; 0.34m thick], which contained a large amount of stone inclusions. A truncated irregular pit [F914; 1.54m long, 1.52m wide and 0.59m deep; fill 911] was recorded.

**Area C**

- A1.79 The aisled building remained unaltered until Phase 4. The foundation trench of a furnace was added to the northern side of the *caldarium*. Two small pits were located to the west of the aisled building.

*Caldarium [F301]: furnace (Figure 17.2)*

- A1.80 The clay foundation of the *caldarium* was cut on the side by a rectangular foundation cut [F456; 1.64m long, 1.46m wide and 0.75m deep]. This removed any evidence of a previous furnace, and was filled by a layer of stone rubble [427; 0.13m thick], overlain by a layer of pinkish-brown clay [365; 0.05m thick]; these formed a foundation deposit similar to the Phase 3a foundation deposit 1371. This was overlain by the remnants of a sandstone slab floor [F387; 0.05m]. This was the original foundation for a structure added to the north part of the *caldarium*. A stone slab [F808; 0.08m thick] was also identified overlying foundation deposit 365, forming the base of the flue that entered the *caldarium*. Two stone walls [F1327; F1328] overlay the stone slab, abutting the northern wall of the *caldarium*; these were of a similar width. The stone of the walls lining the flue and the first two *pilae* within the hypocaust had been reddened and blackened by heat. It is likely that the foundation deposit formed a foundation for further walls on the remaining three sides of the structure, although no masonry remained due to later truncation. This structure is likely to have been the furnace, which fed hot air through the flue into the hypocaust. Although there were no signs of the clay foundation being heated, a stone floor may have overlain the clay, which prevented the clay from baking.

*Pit, posthole (Figure 17.3)*

- A1.81 The circular pit F1473 [1.25m in diameter] was filled by dark greyish-brown sandy silt [1472]. Posthole F727 [1m long, 0.9m wide and 0.34m deep] was oval, filled by dark brown silty sand [726], and including a stone slab as post-packing.

**Area D (Figure 17.1)**

- A1.82 A concentration of postholes was identified as belonging to this phase. Five alignments of postholes indicated a north-south fence line; a corner of an additional structure was also identified. A number of other postholes were excavated but could not be linked to any defined structure.

*Posthole alignments*

- A1.83 Five posthole alignments were excavated in this area. These included a north-south alignment of pairs of postholes [F1184; 12.6m long and 1.2m wide] forming a fence line. The southern pairs had survived better and indicated that the double postholes were originally placed within single construction cuts [F1039; F1042; F1045; up to 1.06m long, 0.56m wide and 0.29m deep], filled by stone post-packing [1044=634; 1041; 1038] and light yellowish-brown sandy silt [1043; 1040; 1037]. The truncated northern postholes survived as isolated cuts [F1175; F1177/F1179; F1181/F1183; up to 0.30m long, 0.25m wide and 0.19m deep] filled by orangey-brown sandy silt [1174; 1176/1178; 1180/1182].
- A1.84 The other three posthole alignments were located to the east of the northern end of F1184. These included a 4.3m long set of five postholes [F835; F853; F860; F870; F962; between 0.3m and 0.45m in diameter], aligned approximately east-west. These were all filled by grey clayey silt [836; 854; 861; 871; 963]. The remaining two alignments were orientated approximately north-south, perpendicular to the first set. The western alignment was 2.5m long and comprised four postholes [F847; F849; F851; F931; between 0.3m and 0.45m in diameter]. These were all filled by grey clayey silt [848; 850; 852; 932]. The eastern alignment measured 7.1m long and comprised four postholes [F941; F950; F960; F1005; diameters up to 0.65m]. These were larger than the others, and were also filled by grey clayey silt [942; 951=491; 961; 1006]. These would therefore seem to form the corner of a structure, possibly a load-bearing wall.
- A1.85 A 1.69m long alignment of three closely-spaced postholes [F635; 0.34m long and 0.26m wide; F636; 0.6m long and 0.56m wide; F637; 0.36m long and 0.3m wide] was identified in plan but not excavated. All three contained stone post-packing.

*Postholes*

- A1.86 Six other postholes were identified [F640; F1003; F1026; F1028; F1033; F1136]. Cuts F640 [0.6m long and 0.4m wide] and F1136 [0.61m long and 0.54m wide] were identified in plan as post-packing but were not excavated. Postholes 1003 [0.6m long, 0.37m wide and 0.08m deep] and F1028 [0.3m long, 0.27m wide and 0.1m deep] were filled by grey clayey silt [1004; 1029], while postholes F1026 [0.28m long, 0.26m wide and 0.16m deep] and

F1033 [0.56m in diameter and 0.25m deep] were filled with orangey-brown sandy silt [1027; 1032]. One metre southeast of F1039 a posthole was identified filled by tightly packed stone [1222; 0.27m by 0.12m]: this was not excavated.

#### **Area E**

##### *Ditch; pit*

- A1.87 A curvilinear ditch was identified to the north of the preserved area [F718; 0.53m wide, over 0.07m deep]; this was not excavated (Figure 18.1). The ditch traversed the area on an east-west alignment, turning southward at its eastern end and continuing beyond the limit of excavation towards the winged corridor house. The upper fill of the ditch comprised reddy-brown silt with frequent large sub-angular stone inclusions [733=732]. A pit [F505; 1.48m long, 0.71m wide and 0.21m deep] was located towards the southeast of the area and cut the Phase 3a gully F564, and was filled by brownish-grey silty-clay [506] (Figure 18.3).

#### **Area F (Figure 18.2)**

##### *Pit*

- A1.88 The northern part of the Phase 3a ditch F1445 was cut by an elongated pit orientated northeast-southwest [F1244; 8.2m long, 4m wide, 0.7m deep]. This was filled by mixed dark greyish-black sandy silt [1438; 0.35m thick], overlain by greyish-brown silty sand [1243; 0.35m thick].

#### **Area G (Figure 18.1)**

- A1.89 The northern and western boundaries of an enclosure were identified to the west of Area H. A pit and three postholes were also excavated.

##### *Ditches; pit; postholes*

- A1.90 Two ditches [F709 and F773] formed two boundaries of an enclosure. Ditch F709 [1.74m wide and 0.45m deep] formed the western boundary; the geophysical survey indicates that this feature extends into the preserved area and has a total length of 54m. It was filled by brown gravelly silt [710]. Ditch F773 [10.7m long, 0.39m wide and 0.8m deep] formed the northern boundary and was filled by mid-orangey brown gravelly silt [772]; this ditch extended into Area H where it terminated. A rectangular pit [F742; 1.92m long, 0.69m wide and 0.34m deep] was located to the north of ditch F773, and filled by mid-brown sandy silt [741]. Three postholes were identified over 18m to the east of pit F742 [F902; 0.75m long, 0.67m wide and 0.22m deep; F936; 0.58m long, 0.55m wide and 0.25m deep; F946; 0.85m long, 0.78m wide and 0.28m deep]. These were all filled by a similar greyish-brown silty sand [901; 935; 945].

#### **Area H (Figure 18.1)**

- A1.91 A dense concentration of postholes was identified towards the centre of the area. Further postholes were excavated in the central and southern parts of the area. A single pit was located to the east of the postholes.

*Structure*

- A1.92 An oval arrangement of eleven postholes [F1366; F1364; F1283; F1403; F1373; F1478; F1479; F1344; F1375; F1324; F1476; up to 0.5m in diameter and 0.2m in depth] was identified radiating around six central inter-cutting postholes [F1320; F1480; F1481; F1482; F1483; F1484; up to 0.4m in diameter]. These were all filled by brown and black sandy silt [1365; 1363; 1282; 1402; 1372; 1343; 1374; 1323; F1320 was filled by 1319]. In the south and southwest part of the alignment the postholes formed an equally spaced semi-circular arrangement. In the northwest and north part the line is less clear and no postholes were identified to the east. It is likely these formed a circular timber structure measuring approximately 5m in diameter, with a central supporting post. This central post was replaced a number of times and it may be that this coincided with the replacement of posts in the north part of the structure.

*Postholes*

- A1.93 Thirteen postholes were identified in the south part of the area [F878; F1235; F1356; F1358; F1360; F1368; F1376; F1378; F1380; F1388; F1390; F1392; F1411; up to 0.84m in diameter, 0.5m deep]. These were all filled by greyish-brown sandy silt [877; 1234; 1355; 1357; 1359; 1367; 1377; 1379; 1381; 1389; 1391; 1393; 1410]. Posthole [F1477] was located to the east of the structure and was unexcavated. A single posthole was present in the northeast part of the area [F1310; 0.6m in diameter and 0.32m deep], and was filled by brownish-black silty sand [1309].

*Pit*

- A1.94 A large oval pit [F585; 2.5m long, 1.5m wide and 0.6m deep] with an uneven base was filled with dark brown-orange clayey silt [584].

**Phase 3c: later 1<sup>st</sup> or 2<sup>nd</sup> century (Figure 19)**

**Summary**

- A1.95 No new activity relating to this phase was identified in Areas A, B, E and I. The furnace for the *caldarium* was remodelled again, creating a stone structure with an entrance to the north. The stonework was cruder than the stonework of the *caldarium*. A number of pits were excavated in Area D, for which there was no discernable function. An elongated pit was present in Area F. In Area H a series of gullies form sub-enclosures. Pits were also excavated in this area.

**Area C (Figure 20.2)**

*Caldarium: new furnace*

- A1.96 A re-modelling of the furnace was identified in the form of a second construction cut [F1059; 2.43m long, 2.34m wide], enlarging the structure. It is likely that the east, west and north walls of the original furnace were removed at this time. The walls [F310; 0.3m in width and up to 0.46m in height] were built onto the natural subsoil in the cut. A ledge in the east wall was identified, with the upper part lined with edge-set red sandstone slabs similar to F304 [F366]. The walls were less substantial than those of the *caldarium*. There was an entrance [F314; 0.8m wide] in the north wall of the furnace. This comprised two stone flagstones, each 0.4m square.



**Area D (Figure 20.1)**

- A1.97 A series of pits were excavated, along with an oven and three postholes. The activity was mainly spread across the northern half of the area.

*Oven*

- A1.98 The cut for an oven [F781; 2.7m long, 1.42m wide and 0.51m deep] was identified on a north-south alignment. This cut through a Phase 3b posthole F835 and also a sub-circular pit [F833; 0.9m long, 0.61m wide and 0.25m deep]. The cut was filled by dark grey silt with patches of pink clay and charcoal inclusions [827]. Above this in the north part of the feature were the remains of a stone flue, comprising two parallel sides of end-set, inclined, single stone slabs [F665]. This was blocked at the north end by another end-set slab; some stone packing had been placed behind the flue. The flue was fed from a stoke pit in the south side of the feature. The flue and stoke pit were overlain by dark grey clayey silt [805]. Above this were the clayey silt layers [804; 784; 783; 782]. Deposits 804 and 783 had been heat affected or baked firm and are likely to be derived from the collapsed superstructure of the oven. A quern fragment was recovered from deposit 782.

*Pits*

- A1.99 In the north-west part of the enclosure five pits were identified [F778; F881; F899; F966; F1122]. The oval pit F966 [over 0.6m long, 0.54m wide and 0.15m deep] was filled by brown gravelly silt [965]; this was cut by a circular pit F899 [1.67m long, 0.9m wide and 0.4m deep], with a fill [900] similar to deposit 965. Pit F881 [0.8m long, 0.65m wide and 0.29m deep] was sub-oval in shape and filled by grey-dark brown silty clay [882]. The finds recovered from the fill 882 included cremated bone fragments of cattle and sheep/goat, and a fragmented complete Roman jar. The large sub-circular pit F778 [1.5m in diameter and 0.52m deep] contained a line of stones aligned east-west [779; 1.4m long] on the base of the pit. The pit fills either side of the stones differed. To the south was a fill of black silty sand [780; 1.35m wide and 0.28m deep]; to the north light grey clay [824; 0.09m thick], overlain by grey sand [806]. A posthole was identified cutting the north part of the pit [F822; 0.65m long and 0.2m wide, 0.19m deep], filled by dark brownish-black silt [823]. The fifth pit [F1122; 0.76m long, 0.73m wide and 0.47m deep] was filled with a grey clayey silt [1123].
- A1.100 Seven further pits were located within this part of the enclosure [F335/334; F522/521; F862/863; F857/859/858; F842/841; F1024/1025; F1022/1023; up to 0.9m long, 0.6m wide and 0.25m deep]. The majority of the fills of these pits comprised grey clayey silt. A huge concretion of ferrous and copper alloy material, a carpenter's hoard, had been deliberately placed within pit F335 and backfilled with a reddish-brown silty sandy gravel [334]. This hoard included large variety of tools and other items which are discussed in full in the Finds section. A sample of bone from the handle of one of the artefacts was sent for radiocarbon dating, but this was unsuccessful. Pit F522 was heavily truncated by a modern sheep burial.

- A1.101 Three further pits were identified in the south part of the area. The earliest of these were two medium-sized circular pits [F1096; 1.03m long, over 0.63m wide and 0.57m deep; F1149; 0.72m long, 1.1m wide and 0.26m deep]: both were filled by sandy silt [1097; 1148]. These were cut by a large sub-oval pit [F1093; 2.02m long, 1.71m wide and 0.68m deep]. This was filled by reddish-brown gravelly silt [1095; 0.3m thick], overlain by grey silt [1094; 0.35m thick].

*Postholes*

- A1.102 Close to the northeast corner of the preserved area were two postholes [F1033 and F1036; over 0.78m long and 0.6m wide]. F1033 was filled with light orangey-brown sandy silt [1032], while F1036 was filled with sandstone packing [1035] overlain by mid yellowish-brown sandy silt [1035]. Three large postholes were also identified within this area [F864=F624; F952; F958; up to 1.4m long, 1.05m wide and 0.58m deep]. The former was square in shape with a smaller, deeper cut in the base. This was filled by two deposits of clayey silt [866; 0.2m thick; 865=623; 0.33m thick]. The other postholes were both filled by grey silt with large sub-angular packing stones [953; 0.5m thick; 959; 0.58m thick].

**Area F (Figure 21.2)**

*Pit*

- A1.103 The northern part of the Phase 3b pit F1244 was cut by an elongated pit on a similar orientation [F1441; over 6m long, 2m wide and 0.7m deep]. This was filled by dark greyish-black silty sand [1440] overlain by greyish-brown silty sand [1439].

**Area G (Figure 21.1)**

*Posthole, ditch*

- A1.104 North-east of Area H a posthole was identified [F944; 0.95m long, 0.67m wide and up to 0.25m deep]. This was filled with greyish-brown silty sand [943]. An east-west aligned ditch [F904; 6.5m long, 1.2m wide and 0.4m deep] cut deposit 943. It was filled with dark brownish-grey loose silty sand [903].

**Area H (Figure 21.1)**

- A1.105 A series of short gullies of unclear function belong to this phase, along with a number of pits and a single posthole. Activity was spread across the area, but there is a concentration of features in the northwestern part of the area.

*Pits*

- A1.106 A pit [F1281; over 1.49m long, 1.05m wide and 0.48m deep] with steep sides was located towards the centre of Area H. It was filled with brown sandy silt [1280] and heavily truncated by later activity. A large oval pit [F1228; 1.46m long, 0.55m wide and 0.5m deep] was identified in the western part of the area. It was filled by sandy silt [1227], and only flint was recovered from this pit.

*Gullies*

- A1.107 A curvilinear gully was identified in the southeast of the area, aligned southwest/northeast [F714; 7.5m long, 0.5m wide, 0.3m deep], and filled by light brown silty sand [713]. A north-south aligned section of gully [F980; 4.9m long, 1m wide and 0.5m deep] was identified, filled with dark-brown silty sand [979].
- A1.108 Further gullies were concentrated in the northwestern corner of the area. A short section of gully [F1133=F1239; 0.75m wide, 0.25m deep and 5.38m long] was aligned north-south. Both terminals were identified, with the southern one excavated, and the feature was filled with a deposit of greyish-brown silty sand [1132=1238]; this cut three Phase 3b postholes [F1344; F1375; F1479]. Immediately to the west was a narrower north-south gully [F798; 3m long, 0.6m wide and 0.3m deep; filled by 797], which cut pit F1228. This gully extended southwards of F1133 where it terminated.
- A1.109 One east-west gully [F1131=F1246; 7.5m long, 0.9m wide, 0.31m deep] turned southward at its eastern end, and was filled by greyish-brown sandy silt [1130=1245]. This was cut by a north-south aligned gully [F1127; 0.4m wide and 0.28m deep] filled by grey-brown silty sand [1126]. This is part of a boundary feature which included several phases. To the north a second gully ran into F1127 [F1129; 0.7m wide and 0.32m deep], filled by grey-brown silty sand [1128]; F1129 cut 1126. To the south another separate north-south gully was evident [F1133=F1239; 0.75m wide and 0.25m deep], filled by grey-brown silty sand [1132=1238]. A short section of gully [F1135; 0.6m wide and 0.34m deep] was physically related to F1133=F1239, and was filled by greyish-brown silty sand [1134]: the stratigraphic relationship between them was not clear. These turned a right-angle eastward and became a single gully [F1125=F1127=F775/1124=1126=774; 8m long, 0.4m wide and 0.28m deep].
- A1.110 To the northeast was a north-south gully [F676; 5.2m long, 0.56m wide and 0.28m deep] which was filled with light brown silty sand [675]. Four short sections of gullies were identified within the area [F1088; F1241; F1352; F1354; up to 3.5m long, 0.83m wide and 0.18m deep]. These were filled by grey and brown sandy silt [1087; 1240; 1351; 1353]. The gully F1354 also cut the enclosure ditch F1277=F1384 and continued below the baulk. One terminal of three of the gullies [F1088, F1241 and F1352] was identified. Two gullies were identified in the north part of the area [F1306; 3m long, 0.2m wide and 0.15m deep; F1308; 0.6m wide and 0.29m deep], and were filled by light grey silty sand [1305; 1307].

*Pits; posthole*

- A1.111 A large oval pit [F1219; up to 2m long, 1.4m wide and 0.55m deep] was identified. This was filled by sandy silt [1218]. Flints were the only finds recovered from the pit. A second pit was circular in shape [F796; 0.89m long, 0.65m wide and 0.33m deep] and was filled by silty sand [795]. Two further pits [F1217; 1.16m long, 0.43m wide and 0.36m deep; F1346; over 1.46m long and 0.64m wide] were located close to each other in the centre of

the area. They were both filled with light grey silty sand [1216; 1345]. Gully F1346 was unexcavated.

- A1.112 In the south part of the area a heavily truncated posthole [F800; 0.33m long, 0.24m wide and 0.14m deep] was identified. This was filled with brown sandy silt [799].

### **Phase 3d: later 2<sup>nd</sup> or 3<sup>rd</sup> century (Figure 22)**

#### **Summary**

- A1.113 There is evidence for the construction of a large square or rectangular stone structure in Area D, with three foundation trenches and patches of stone paving. Further pitting was present in Area H, while new gullies were excavated in Areas A and F.

#### **Area A (Figure 23.3)**

- A1.114 Part of a north-south ditch was identified [F18; over 1.62m long, up to 1.52m wide, and 0.62m deep] along the western edge of the area. This was filled by greyish-brown sandy silt clay [17]. However the ditch was not visible in plan, and was not detected by the geophysical survey, so it was not possible to trace this feature to the north and south. It is presumed to be a re-cut of the western boundary of the enclosure system.

#### **Area C**

##### *Caldarium [F301]*

- A1.115 A dark grey clayey silt layer [981; 0.05m thick] was identified within the hypocaust, overlying deposit 1081 and abutting the *pilae*. This is likely to have accumulated during the use of the hypocaust. Further silt [947; 0.12m thick] had formed over this.

#### **Area D (Figure 23.4)**

- A1.116 The remains of two heavily robbed-out foundation trenches set perpendicular to one another and forming southern and western walls were excavated, along with the remains of a third northern wall. Patches of stone paving suggest that the building was paved both internally and to the north. The southern foundation trench has a terminal to the east, which may indicate a southern entrance to the structure. Two pits and a hearth were also excavated.

##### *Foundation trenches*

- A1.117 Two foundation trenches [F1199; F1011=F1053] were identified. Trench F1199 [over 6.5m long, 1.46m wide and 0.88m deep] was located in the south part of the area and was aligned east-west. This truncated the Phase 3a ditch F1204 which was on the same alignment. The trench continued beneath the baulk to the west and terminated at the east, where it cut a pit [F1206; see paragraph A1.121]. The primary fill of the trench was yellow-brown sandy silt [1203; 0.1m thick]. This was overlain by greyish-brown clayey silt fills [1202; 0.32m thick; 1201; 0.09m thick; 1200; 0.21m thick]. Deposit 1200 was sealed by mid-grey clayey silt [641; over 5.99m long, 1.28m wide and 0.25m thick], which was in turn covered by mottled pinkish grey clay [642; 1.2m long, 1.28m wide and 0.25m thick].

A1.118 A further foundation trench was identified continuing eastward after a gap; however this part of the site was badly disturbed by modern sheep burials and the feature was unexcavated. Trench F1011=F1053 [over 6.4m long, 1m wide and 0.54m deep] was aligned north-south and located in the western part of the area; it also truncated a pit [F1055; see paragraph A1.121]. The trench was filled by grey gravelly sandy clay [1012; 0.52m wide and 0.54m deep], overlain by clay [1013=1054; 0.54m thick]. Within the top part of this were large amounts of stone rubble [838; 6.4m long]. This was overlain by clay and more sandstone rubble [646; 647; up 5.8m long and 0.15m thick]. This trench continued beneath the baulk to the north and south.

*Wall*

A1.119 In the north part of the area a stone wall was identified [F627; 6.82m long, 0.75m wide and 0.12m deep]. This was orientated east-west and was parallel with trench F1199.

*Flagged surfaces*

A1.120 In the centre of the building a small square flagged area [F639; 1.5m long and 1.2m wide] was identified, comprising sandstone flags up to 0.4m in diameter. A second patch flagged surface [F606; 1.1m long and 1m wide] was located immediately to the north of the building. The full extent of the paved areas is unknown due to later truncation.

*Pits*

A1.121 Two pits [F1055; F1206] were truncated by the foundation trenches. Pit F1055 [1.25m long, 0.9m wide and 0.32m deep] was filled by dark grey clay with occasional inclusions of charcoal [1056], and cut by the west trench F1011=F1053. Pit F1206 [over 0.78m long, 0.46m wide and 0.56m deep] was filled by grey slightly clayey [1207; 0.25m thick] overlain by reddish-brown sandy silt [1208; 0.33m thick], and was cut by the wall foundation trench F1199.

*Hearth*

A1.122 A hearth was identified to the north of the building, comprising heat-affected clay [616; 0.6m in diameter] overlain by fire cracked stones [617; 0.7m long 0.3m wide and 0.08m thick].

**Area F (Figure 23.2)**

*Pits; ditch*

A1.123 A curvilinear ditch [F1335=F1443=F1457; over 11m long, up to 1.4m wide, 0.5m deep] was identified towards the centre of the area and cut the Phase 3c pit F1441. It was filled by greyish-brown sandy silt [1336=1442 =1456].

**Area H (Figure 23.1)**

A1.124 Activity in Area H saw the construction of an oven in the southwest corner of the area, while a gully was cut in the northeastern corner. The postholes were recorded and a number of pits were concentrated within the western half of Area H.

*Oven*

- A1.125 An oven [F1311; 1.42m long, 0.6m wide and 0.3m deep] was located in the south-west part of the enclosure, aligned north-south and fed from a stoke pit [F1330/1329] to the south of the oven. The construction cut of the oven flue [F1387] contained a stone flue [F1311], comprising up to four courses of stone with clay bonding. The construction cut was backfilled by orangey brown sandy silt [1386]. The flue was filled by black-dark brown sandy silt [1318], above which was a superstructure of orange clay [1313; 0.1m thick]: this contained inclusions of fired clay and heat affected stones. This was overlain by a mixed deposit, comprising sandy silt, clay and fired clay fragments [1312; 0.05m thick]. The east part of the flue and stoke pit of oven F1311 had been truncated by a later curvilinear gully [F1285].

*Gully*

- A1.126 An unexcavated reverse-L-shaped gully [F1493; 1.74m long and 0.7m wide] was located in the northeast part of Area H.

*Pits*

- A1.127 Two concentrations of pits were present in the west of the area, clustered at the southwest corner and in the centre. The southwestern cluster consisted of seven oval pits [F746; F1119; F1226; F1338; F1350; F1396; F1487; up to 1.38m long, 1.11m wide and 0.4m deep]. Three pits were identified [F746; 1.26m long, 0.62m wide and 0.21m deep; F1350; 1.02m wide, over 0.8m long and 0.32m deep]. These were all filled with single deposits of either brown sandy silt or grey-brown clayey silt [745; 1118; 1225; 1337; 1349; 1397; 1488].
- A1.128 The central cluster consisted of a further five pits with a variety of shapes. Two were circular [F1221; F1237; up to 1m long, 1m wide and 0.4m deep] and were filled by light brown silty sand [1220; 1236; 1325]. Deposit 1236 contained a large quantity of tightly-packed stone. Pit F1237 cut the Phase 3b posthole F1324. Two of the pits were rectangular [F1288; F1304; up to 1.3m long, 0.62m wide and 0.2m deep] and filled with dark brown silty sand [1287; 1303]. The remaining pit was of an irregular shape [F1322; 1.1m long, 0.91m wide and 0.25m deep] and filled with a dark brown silty sand [1321].
- A1.129 Two further pits were present in the eastern part of the Area. A large pit [F938; 2.6m long, 1.4m wide, 0.52m deep] was filled by dark brown silty sand [937]. Northeast of this was an irregularly-shaped pit [F788 up to 1m long, 1m wide and 0.4m deep], also filled by black-brown silty sand [787].

*Postholes*

- A1.130 Three postholes were identified in the centre of the area. Two [F1021; F1326; up to 0.58m long, 0.53m wide and 0.37m deep] were circular and were filled by brown and black sandy silt [1020; 1325]. The third [F970; 0.4m in diameter and 0.45m deep] was rectangular in shape and was filled by dark brown sandy silt [969]. It was truncated by later activity.

## **Phase 4: 3<sup>rd</sup> century to c. AD 350 (Figure 24)**

### **Summary**

- A1.131 Two east-west ditches were recorded in Area A, forming a subdivision of the existing enclosure system. A sunken paved surface was identified within a rectangular pit (Area B); part of the make-up of the paved surface included a large millstone. This was deliberately backfilled later in this phase. A curvilinear gully was dug to the west of the aisled building; this was cut by the later half-circular timber structure (Area C). An oven was constructed to the east of this gully, and a grave was placed just beyond the northern end of the oven. A pit was also present in this area. Stone rubble to the west of the aisled building in Area C probably relates to the Phase 3 stone structures in this area. A substantial paved area was located on the northern side of the aisled building, possibly functioning as a threshing floor. The *caldarium* had become disused: much of the western side of the building was truncated and replaced with a stone T-shaped flue for a corn dryer. Fragments of the sandstone flooring were thrown into the hypocaust, and the surviving floor was re-surfaced with compacted gravel topped with *opus signinum*. Pits, gullies, ditches and an oven were excavated in Areas D-H.

### **Area A**

- A1.132 The eastern and western boundary ditches identified in Phase 3d are presumed to have continued in use in Phase 4. Two parallel east-west ditches were added to the enclosure system to subdivide it, replacing an earlier sub-division. Two intercutting north-south gullies, one a terminus, were identified in the southwestern corner of the area. These extended beyond the excavation area, and one was truncated by later activity.

### *Ditches*

- A1.133 The fills of the Phase 3a east-west ditch F83 and the Phase 3b main north-south boundary ditch F49 were both cut by a ditch [F20=F57=F81=F130=F156=F213; 3m wide, 0.75m deep] (Figure 25.2). This followed the same east-west alignment as ditch F83, and was filled by dark greyish-brown silty sand [19=56=80=129=154=212]. A second east-west ditch [F14=F37=F112=F126; 2.95m wide, and 0.7m deep] was identified traversing the southern part of the area, parallel to this (Figure 25.6). It was filled by greyish-brown silty sand [13=38=111=125].

### *Gullies (Figure 25.3)*

- A1.134 In the southwestern corner of the area was a gully [F104; 0.7m wide, 0.25m deep], which cut the fills of the Phase 2 roundhouse gully F165 and the Phase 3a east-west ditch F12. This was filled by orangey-brown sandy silt [103]. Gully F104 was cut by a second gully [F102; 0.62m wide, 0.24m deep] on the same alignment. This was filled by greyish-yellow-brown sandy silt [101]. Gully F104 terminated at its northern end, perhaps indicating an entrance at this point. Gully F102 extended further to the north before being completely truncated by the later gully F141, and so it was not possible to establish where this feature terminated.

**Area B (Figure 25.1; Plate 3)**

- A1.135 The fill of the Phase 3a pit F817 was cut by a large, roughly rectangular feature [F325; 5.3m long, 2.8m wide and up to 0.83m deep]. The sides of the feature sloped steeply and levelled to a flat base. A red clay lining was identified in the south part of the cut [821]. On the base of the feature a level stone slab surface was identified [F324]. This comprised large angular stone slabs measuring up to 0.4m by 0.4m in size. A re-used circular millstone, measuring 0.7m in diameter and 0.11m thick, was incorporated into the surface. In the south part of the feature some stone slabs had been laid in an upright position, overlying clay lining 821. The northeastern corner of the pit extended beyond the limits of excavation, and as the area immediately to the east was not excavated it was not possible to establish the function of this feature.

**Area C**

- A1.136 The aisled building continued in use during this phase. A stone paved surface was added to the north side of the building. The *caldarium* was abandoned and replaced by a corn dryer which truncated the western side of the building. To the west of the aisled building was a gully, a large pit and an oven. An inhumation located at the northern end of the oven which may have been associated with the feature. Several stone clusters were located between these features and the aisled building.

*Aisled building [F268]: paved surface (Figure 25.1)*

- A1.137 Adjacent to the central part of the north wall of the aisled structure was a rectangular paved surface [F321; 8m long and 4m wide]. Pottery recovered from the deposit under the surface indicates that the surface may date to the late 3<sup>rd</sup> or early 4<sup>th</sup> century. The surface was aligned north-south, and was delineated on the east and west sides by facing stones. There was animal and root activity as well as truncation from ploughing; this was particularly evident in the southern part of the feature. The stones were bedded on a brown sandy silt layer [361; 0.24m thick]. It is possible the paving may have been a floor surface within a timber structure, but there was no evidence for any structural features surrounding the paving. It is therefore more likely the paving was an open working surface, such as a threshing area, or may have formed an area of hard standing at the entrance to the aisled building.

*West of aisled building: oven; grave; gully; pit; stone clusters (Figure 25.1)*

- A1.138 The construction cut of an oven [F591; 2.84 long, 1.56m wide and 0.5m deep] was located to the west of the aisled building. This was sub-rectangular in shape and aligned north-south. The structure of the oven was identified in the north part of the cut [F420] and comprised pinkish-red clay walls and floor. The sidewalls also contained stone slabs up to 0.3m long, and were roughly coursed but the main part of the structure comprised clay. More stone in the north end of the structure, may have formed the base of a flue. Neither the stones or clay showed any signs of having been fired; the clay was still malleable. The construction cut was backfilled by orange-greyish-brown silty sand [590]. The stove pit was identified in the southern part of F591, filled by a greyish-brown sandy silt with frequent charcoal



flecks [466]: this deposit also spilled into the mouth of the flue itself. The entire length of the feature was overlain by the collapsed superstructure of the oven [419; 0.28m thick].

- A1.139 An east-west aligned grave cut [F1455; 1.44m long, 0.54m wide and 0.46 deep] was located immediately to the north of the oven. A stone lining survived in the west part of the grave, comprising up to four courses of sub-angular sandstone blocks. These were roughly squared with smoothed faces and occasional tool marks identified on some of the stones. The poorly-preserved skeleton [F1454] was in an extended supine position with the skull placed between the feet, facing west toward the rest of the skeleton. The grave was backfilled by greyish-brown-orange silty sand [1453]. The grave was heavily truncated by later activity. As a result it was not possible to establish whether there was a direct relationship between the oven and the inhumation.
- A1.140 An L-shaped curvilinear gully [F1475; 12m long, up to 0.6m wide and 0.2m deep] was identified to the south and west of the oven and inhumation. It was aligned approximately north-south with a right-angle turn eastward at the southern end [F1194; F1452], partially enclosing the oven with which it is associated. The terminals of the gully were identified at its northern and eastern ends. The gully was filled by greyish-brown sandy silt [1193; 1451]. To the west of the northern terminal of the gully was a pit [F1431; 0.85m long, 1.48m wide and 0.56m deep], filled with mid-greyish brown slightly silty sandy-clay [1430; 0.38m thick], overlain by a very dark grey clayey silt [1429; 0.1m thick] which was below a light yellowish-brown clayey and silty sand [1428; 0.22m thick].
- A1.141 Several clusters of stone were located between the features above and the aisled building [F299; 0.8m long, 0.6m wide and 0.21m deep; F300; 1.4m long, 1.1m wide and 0.24m deep; F322; 2.2m long, 1m wide and 0.13m thick]. There was no obvious cut surrounding any of these features and they were not excavated, but they are presumed to be associated with the structures identified in the Area in Phase 3a.

*Caldarium [F301]: backfilling of hypocaust (Figure 25.7)*

- A1.142 A shallow pit [F366; 1.3m long, 0.7m wide and 0.15m deep] cut the Phase 3b clay foundation deposit 365; this may have been for removing the clay for use elsewhere. This pit was filled by dark brown-black sandy silt [312=330; 0.6m thick], which also backfilled the furnace area within the walls F310. Finds recovered from this deposit include a range of domestic debris including animal bone, pottery and iron nails, indicating that the *caldarium* was now disused.
- A1.143 The hypocaust and flue were backfilled by several layers of sand or clayey silt [514; 0.3m thick; 516; 0.25m thick; 896; 0.07m thick; and 897; 0.12m thick]. Context 896 contained fragments of the red sandstone from the demolition of the original floor above the hypocaust, indicating a deliberate blocking of the flue with rubble. Fragments of the red sandstone material were also spread around the *caldarium*.

*Gully backfill*

- A1.144 The Phase 3a gully F729 was filled with mixed mid-dark greyish-brown silty sand [728]. This contained inclusions of red sandstone fragments which had the same natural ripple effect identified from the flooring slabs within the *caldarium* F301, suggesting that the gully was abandoned at the same time as the hypocaust.

*Corn dryer [F814]*

- A1.145 The west parts of structures F301 and F310 were truncated by a cut [F815; 4.38m long, 0.43m deep] for the insertion of a stone 'T-shaped' flue of a corn dryer [F814]. It cut through the Phase 3d fill (312) of the furnace F310, partially truncating the northwestern corner of the Phase 3a hypocaust (F301). The base of the cut was filled by an aggregate layer comprising sand and gravel [880; 0.05m thick]. The clay-bonded stone-walls [F515; F1076; F1077; and F1078; up to 0.52m high] of the flue F814 were constructed on top of this deposit, with walls F1076 and F1077 abutting wall F1078. The northern end of wall F515 comprised a large stone slab laid directly against the cut F815. The flue also incorporated part of the west wall of the *caldarium* and a *pila* standing *in situ*. A wall [F455; 1.37m long, 0.2m wide and 0.26m high] was constructed in the north part of the corn dryer, forming the base of the T-flue. This abutted the western interior edge of the furnace pit F310 and had been constructed directly over the Phase 3b foundation deposit 365. The stones of this wall and of the northern part of wall F1077 were blackened, indicating that heat entered the flue from the northern end. The walls of the corn dryer comprised roughly coursed stone blocks, only one stone in width. Much, if not all, of the masonry used to construct the flue is likely to have been re-used from F301/F310; it included a re-used *pila* and fragments of red sandstone similar to the Phase 3a flooring F469.

- A1.146 The flue had a clay lining [384; over 0.17m thick], and was filled by three layers deposited during the functional use of the flue [364 (sandy silt); 383 (clayey silt); 379 (clayey silt); up to 0.3m thick], with context 379 containing charcoal inclusions. The eastern edge of the T-flue was overlain by a layer of mid-light brown sand and gravel [303; up to 0.13m thick] which formed a foundation base over the Phase 3a sandstone flooring 469 and spread eastwards, filling the interior of the *caldarium* and butting against the Phase 3a sandstone lining F304. Above this was a small patch of *opus signinum* floor [302; 0.47m long, 0.35m wide and 0.03m thick]. This is interpreted as having formed a working surface within the interior of the disused *caldarium*.

**Area D (Figure 25.5)**

- A1.147 The robbed-out building identified in Phase 3d is presumed to have remained in used in Phase 4. An oven and a posthole were located to the north of the structure.

*Oven; posthole*

- A1.148 In the north part of the area was an oven [F664] built within an east-west aligned cut [F907; 2.1m long, 1.1m wide and 0.61m deep]. This was filled,

in the east part of the feature, by orangey-brown sandy silt [906]. Above this the structure F664 was built, comprising the south wall of a flue: this was blocked at the east end of the feature by a deposit of sandstone rubble. The flue was fed from a stoke pit in the west part of the feature. The stoke pit and flue were filled by a sandy silt with charcoal inclusions [905]. Above this a dark grey silty-clay fill was identified [840]. Cereal remains recovered from the fills suggest that the oven was being used to dry grain. A posthole [F933; 0.43m long, 0.44m wide and 0.09, deep] was identified to the east of this oven, and was filled by grey clayey silt [934].

#### **Area E (Figure 25.4)**

A1.149 A grave and a pit were identified in the western part of the area. No other features were related to this phase in this area.

##### *Grave*

A1.150 Towards the southeastern corner of the area a north-south aligned grave cut [F541; 2.03m long, 0.7m wide and 0.27m deep] was identified. The skeleton [F578] was in a poor state of preservation with only a fragment of the skull and part of the left leg remaining. From the location of the fragmentary remains it appears that the burial was placed in a supine position with the head in the south part of the grave. A sample of the cranium was sent for radiocarbon dating, and produced a date of cal AD 230-400 (95% probability). The grave was backfilled with grey clayey silt [542].

##### *Pit*

A1.151 A sub-circular pit [F706; 0.9m wide, over 0.82m long and 0.33m deep] was filled by greyish-brown clayey silt [707] which contained 2<sup>nd</sup> century pottery. On its eastern side F706 had been truncated by a modern animal burial.

#### **Area G (Figure 26)**

##### *Oven*

A1.152 In the centre of the area the L-shaped construction cut for an oven was identified [F801=F891; 3.26m long, 2.6m wide and 0.5m deep]. The primary fill of the cut was brown sandy silt [985; 0.25m thick]. This was overlain by a thin layer of black ash silt [895; 0.02m thick]. Above this deposit, in the west part of the feature, were the remnants of a stone flue [F802; 0.32m high], packed with clay: this showed signs of heating and survived up to three courses high. In the east part of the feature the black ash silt was overlain by black-orange ashy silt [893=894; 0.05m thick]: this end of the feature is likely to have been the stoking area for the flue. Above this and the flue was a silty-gravel deposit [892=803; 0.29m thick]. Overlying this deposit and infilling the flue was a brown sandy-clayey silt containing charcoal [964]. Above this within the area of the flue a yellowish-brown sandy-clay deposit was identified, with stone inclusions [984]. Three-quarters of the feature was overlain by black sandy-clayey silt [829; 0.17m thick]. Finds from the fills of the feature include slag and small metal fragments, indicating that the feature may have had a function in connection with metal working.

### **Area H (Figure 26)**

- A1.153 Two north-south ditches were established on the western side of Area H. Five pits were located to the east of these ditches.

#### *Ditches*

- A1.154 Two ditches [F765; over 13m long, 0.9m wide and 0.5m deep; F767=F1315; over 13m long, 1.15m wide and 0.59m deep] formed the western side of the boundary of a rectangular enclosure. Ditch F767=F1315 was filled by orangey-brown silty-clay [766=1314]. This was cut on its western side by ditch F765, which was also filled with orangey-brown silty-clay [763]. Neither the northern nor southern ends of these ditches could be identified.

#### *Pits*

- A1.155 A large circular pit [F1401; up to 1.2m in diameter and 0.67m deep] was located in the western part of the area. This was filled by brown sandy silt [1400; 0.3m thick], which was partially covered by a lens of clay [1399; 0.15m thick], over which was a further layer of silt [1495; 0.18m thick], identical to 1400. This was overlain by greyish-brown silty-clay with large stone inclusions [1398; 0.36m thick]. A further pit [F1486; 1m long and 0.6m wide] was recorded in plan but not excavated. An oval pit [F1233; 1.3m long, 0.84m wide and 0.52m deep] was filled by clayey silt [1232] which contained several large sub-angular stones. A larger oval pit was identified [F1080; up to 2m long, 1.4m wide and 0.55m deep]. This was filled by sandy silt [1079] and also contained several large sub-angular stones.
- A1.156 A posthole was identified in the eastern part of the area [F997; 0.35m long, 0.33m wide and 0.35m deep], filled by sandy silt [996]. This was cut by a sub-square pit [F978; 3.8m long, 2.4m wide and 0.35m deep], filled by brown silty sand [977].

### **Phase 5a: later 4<sup>th</sup> century (Figure 27)**

#### **Summary**

- A1.157 The main north-south boundary ditch was reestablished (Areas A, E F and G): two phases of ditch belong to Phase 5, but it was not possible to establish a stratigraphic relationship between the two. An east-west stone wall was constructed in Area B, with a metallised surface on its southern side overlying the final backfill deposit of the sunken paved surface. No further structural remains relating to this wall were identified. A half-circular timber structure was constructed to the west of the aisled building (Area C). One of the postholes for this feature cut the earlier gully F1475. The corn dryer which had replaced the *caldarium* in Area C was abandoned. The flue was backfilled with clay and rubble, suggesting that the building underwent a subsequent phase of activity of which no trace now survives. Several pits were excavated within the aisled building; one of these contained late pottery. An oven was constructed outside the southwest corner of the building. Several pits and an oven were identified in Area D. A large rectilinear enclosure was established within Area E. Two graves were located towards the southwestern corner of Area G; they were situated within a rectangular enclosure which appeared in Phase 3b. Two curvilinear

gullies were present in the southern part of the area, which may have formed a circular structure 4m in diameter. A large pit was located in the middle of this structure, and the eastern terminals of the gullies were packed with stone.

**Area A (Figures 28 and 29)**

- A1.158 New north-south ditches were cut along the eastern and western boundaries of the enclosure system. The enclosure system appears to have preserved the southern east-west Phase 4 ditch, but the northern ditch was truncated at its eastern end.

*Boundary ditches (Figure 29.4)*

- A1.159 Two ditches have been identified side-by-side along the line of the main eastern north-south boundary ditch. The eastern ditch [F45=F60=F94=F178=F982; 0.8m wide and 0.8m deep] was filled by thin deposits of silting [59; 0.07m thick; 66; 0.1m thick] overlain by the main fill of mid-greyish-brown sandy silt [44=93=177=187=1255=1460; 0.82m thick]. The southern terminal of the ditch was identified, and the results of the geophysical survey indicate that this feature extended across the preserved area and continued northward through Area G and into Area F, where it turned eastwards (see paragraph A1.187). This gave it a total length of over 160m. The feature has the appearance of a lane or trackway, providing access to the enclosures around the villa buildings. The western ditch [F42=F92=F176; 2.7m wide and up to 1.16m deep] was parallel with F45 and filled by sandy silt [43=91=175]. The southern terminal of this feature was not identified due to later truncation, but as with ditch F45 the geophysical survey identified this ditch extending northwards through the preserved area and into Areas G and E, where it also turned eastwards into F45. It was not possible to establish a stratigraphic relationship between these features due to later truncation.
- A1.160 The western boundary of the enclosure system was formed by two contiguous ditches (Figures 28.1 and 28.5). The southern ditch [F16=F122=F124=F141; 48m long, 3.25m wide, 0.75m deep, over 35m in length] was filled by dark greyish-brown sandy silt [123=140; 0.13m thick], overlain by dark greyish-brown sand [15=121=139; 0.21m thick]. In the southern part of the feature two ditches [F191; 0.44m wide and 0.45m deep; F193; 0.85m wide and 0.31m deep], filled by a similar grey sandy silt [190; 192], were identified as part of the same boundary feature; no stratigraphic relationship could be established between them, and at the southern terminal of the feature only one ditch was identified, cutting the Phase 4 gully F102. The northern ditch [F7=F832=F1140=F1143; up to 2.3m wide, 0.75m deep, 47m long] was identified on the geophysical survey extending across the preserved area and into Area G, where it joined with an east-west ditch. It was filled by dark greyish-brown sandy silt-clay [9=831=1139=1142], but it was not possible to establish a stratigraphic relationship between the southern and northern ditches (F7 and F16).
- A1.161 A north-south ditch [F22=F1121; 12.6m long, 1.1m wide and 0.67m deep] in the northwest part of the area sub-divided the enclosure (Figure 28.1 and 28.5). This was V-shaped in profile and cut the Phase 4 ditch F20. It was

filled by brown silty sand-gravel [21=1120]. The Phase 4 ditch F20 was also cut by a ditch [F211; 14m long, 3m wide, 0.75m deep] following a northwest-southeast alignment (Figure 29.1). This was filled by dark greyish-brown silty sand [210]. A second north-south ditch [F28; 16.2m long, up to 3.3m wide and 0.21m deep, filled with grey-brown sandy silt] was identified in the centre of the area extending north from ditch F14.

*Gully (Figure 28.4)*

- A1.162 In the northwest corner of Area A, immediately west of the main western enclosure ditch a gully [F1157=F1224; over 20m long, 0.5m wide, about 0.2m deep] was identified. It traversed the area on an east-west alignment, and was filled by greyish-brown sandy silt [1156]. This is most likely a re-establishment of gully F1155 from Phase 3a.

**Area B (Figure 28.7)**

- A1.163 The sunken paved surfaced of Phase 4 was backfilled and an east-west wall was constructed in the northern part of the area. A cluster of stones overlain by a compacted stone surface was identified on the southern side of the wall; all of these features extended eastwards beyond the limits of excavation. A short section of a north-south ditch was located to the southwest of the wall.

*Sunken paved surface [F324]*

- A1.164 The sunken paved surface was sealed by brownish-grey silty-clay [264] which completely filled the cut F325. This contained four sherds of pottery dating from 375-420AD.

*Wall*

- A1.165 The remains of a linear stone wall [F260; 7m long and up to 0.7m wide] were identified traversing the site on an east-west alignment. The wall was constructed with faced outer stones either side of a rubble core. The outer stones survived best on the north side of the wall and were only one course deep. This overlay the earlier Phase 3b ditch F483= F922.

*Stone cluster*

- A1.166 In the extreme east part of the area a concentration of large, tightly packed stone was identified in section [F293; 0.86m long, 0.45m wide and 0.36m thick]. The terminal of the feature was identified and the feature continued beneath the baulk. No cut was apparent and the feature may be interpreted as either a dump of rubble or part of a rudimentary wall, possibly relating to F260.

*Compacted stone surface*

- A1.167 Over the stone cluster [F293] was a compact stone surface [F263; 4.72 m long, over 1.71m wide and 0.23m thick], which also overlay the top fill of the Phase 4 sunken feature [F269]. This comprised tightly-packed medium-sized angular stone and extended beyond the eastern baulk. The southern extent of this surface was truncated by the Phase 5b villa enclosure ditch.

*Ditch*

- A1.168 A linear north-south aligned ditch [F267=F974; up to 1.8m wide, 0.66m deep] was identified in the southwest part of the area. This was filled by dark brown silty sands and clays [266=973] which were later cut by the Phase 5b villa enclosure ditch.

**Area C (Figures 28 and 29)**

- A1.169 A compacted earthen surface was established at the western end of the area, and a half-circular timber structure was erected around it. Several pits were excavated within the aisled building. An oven was constructed outside the southwestern corner of the aisled building. The Phase 4 corn dryer was abandoned, with clay deposited in the flue, and rubble spread across the building.

*Surface; half-circular timber structure [F1469] (Figure 28.6)*

- A1.170 The Phase 4 Gully F1475 was overlain by a D-shaped compact earth floor surface [F1474; 7.6m long, 4.1m wide and 0.2m thick]. An alignment of postholes [F430; F432; F434; F436; F438; F1192; F1405; up to 0.6m in diameter, 0.4m deep] cut through and enclosed context F1474, forming a half-circular timber structure [F1469]. The postholes were all filled by stone post-packing, with a greyish-brown sandy silt backfill [429; 431; 433; 435; 437; 1191; 1404].

*Aisled building [F268] (Figure 28.3)*

- A1.171 Two oval pits cut the natural subsoil within the northern part of the building [F1253; 2.4m long, 0.9m wide and 0.36m deep; F1254; 2.11m long, 0.64m wide and 0.52m deep]. Both were filled by sandy-clay containing animal bone [1075; 1046], and mid- to late 4<sup>th</sup> century pottery was also recovered from context 1046. Another pit was identified in the east part of the building [F1252; 0.9m in diameter and 0.13m deep] and was filled with a blackish-brown clayey sand [1251].

*Corn dryer [F814]: abandonment (Figure 29.2)*

- A1.172 After the corn dryer had fallen out of use it was backfilled with a thick layer of clay [363=378; up to 0.29m thick]. This was overlain in the south-east part of the flue by a dump of large cobbles and rubble [306; 0.29m thick]. Above this a further deposit of clay was identified [305; 0.15m thick], filling the top of F814. It is possible that this levelling up of the interior of the structure indicates further re-use of the building. Contexts 363 and 312 were overlain by a layer of sandy silt [362=513]. Above this were layers of yellow sand [311; 0.15m thick; and 372; 0.1m thick]. A layer of clay was also identified overlying context 363 [313; 0.25m thick]. Any potential activity immediately north of F310 was truncated by a modern pit [F1010/1009].

*Oven (Figure 28.3)*

- A1.173 An oven [F1340] was located beyond the southwest corner of the aisled building. It was placed within an elongated oval construction cut [F1342; 1.24m long, 0.93m wide, 0.38m deep], and aligned northwest-southeast. The oven was fed from a circular stoke pit [F1370; diameter of 0.5m] to the

north of the flue. The oven cut had been filled with clayey sand [1341], and the fill stoke pit [1369; 0.12m thick] had a similar fill. The structure of the oven was built over deposit 1341, comprising two parallel lines of large square angular stone slabs set on end [F1340]. These stones showed signs of being heated and formed the oven flue. The flue was filled by heat-affected clay [1339; 0.27m thick] overlain by stones; this deposit is interpreted as being tumble from the collapsed superstructure of the oven.

#### **Area D (Figure 29.3)**

- A1.174 A number of pits were identified in this area. An oven was constructed to the west of the Phase 4 building.

##### *Pits*

- A1.175 Within the north part of the enclosure four intercutting pits were identified. The earliest of these were two sub-circular pits [F872; F929]. Pit F929 [0.6m wide and 0.42m deep] was filled by reddish-brown gravelly-silt [930]. Pit F872 [1.04m wide and 0.43m deep] was filled by two greyish-black burnt silt deposits [928; 0.19m thick; 927; 0.13m thick], overlain by grey sandy-clayey silt [873; 0.26m thick]. Both contexts 930 and 873 were cut by a large sub-oval pit [F874; 2m long, 1.1m wide and 0.58m deep]. This was filled by three deposits of dark grey silt [926; 0.15m thick; 924; 0.33m thick; 923; 0.11m thick] and a deposit of yellow-brown sandy clay silt [925; 0.5m thick] overlain by sandy silty clay [622; 0.08m thick]. Context 930 was also cut by a small sub-oval pit [F867; 0.9m long, 0.61m wide and 0.36m deep]. This was filled by pinkish-brown gravelly silt [869; 0.24m thick], overlain by grey clayey silt [868; 0.14m thick].
- A1.176 A sub-oval pit was identified cutting through the southern part of the Phase 3d stone flagged surface (context 639) [F1058; 1.6m long, 1.35m wide and 0.36m deep]. This was filled by orangey-brown sandy silt [1057; 0.2m thick], overlain by a deposit of jumbled sandstone [1031; 0.49m thick]. Above this the pit was filled by orangey-brown sandy silt [1030; 0.2m thick]. In the southeastern part of the area the fill of the Phase 5c pit F1095 had been cut by an oval pit [F1089; 2.36m long, 1.68m wide and 0.46m deep]. This was shallower than the Phase 3c pit F1093 but otherwise was of similar dimensions. It was filled by three grey silt deposits [1092; 0.2m thick; 1091; 0.36m thick; 1090; 0.31m thick]. A stone quern fragment and three ferrous objects were recovered from these fills. The pit was cut by a smaller oval pit [F1098; 1.85m long, 1.01m wide and 0.37m deep] which was filled with brown clayey silt [1099].

##### *Oven*

- A1.177 The remains of a second oven [F489] were identified attached to the southeast part of the stoke pit F342, replacing the Phase 3a oven F339. It was placed within a cut [F495; over 0.6m long, 0.3m wide and 0.3m deep], which was filled by black silt [496; 0.1m thick]. This deposit contained charcoal inclusions which are likely to derive from the truncation of oven F339. Above this was the structure [F489], comprising coursed stone blocks bonded with orange clay [494]. This formed the flue for an oven and was filled by brown silt [493]. The feature extended beyond the baulk into the



preserved area so its full extent was not determined. The mouth of the flue was filled by greyish-black silty-ash [490; 0.1m thick]. This was overlain by the collapsed superstructure of the oven, comprising pinkish orange burnt clay, with stone inclusions [443].

#### **Area E (Figure 29)**

- A1.178 The southern and eastern sides of an enclosure ditch were identified. An east-west gully was located to the north of these ditches which was probably associated with the enclosure.

##### *Ditches (Figure 29.3)*

- A1.179 Ditch [F486=F688; up to 1.39m, and up to 0.72m deep] formed a boundary in the southeastern part of Area E. It cut the northern side of the Phase 3a ditch F473. This was filled by brownish-grey silty clay [488; 0.15m thick] overlain by brownish-grey silty clay [487=689; 0.31m thick]. The eastern side of the enclosure cut the fill of the Phase 4 pit F706.
- A1.180 A more substantial U-shaped ditch [F470; 1.45m wide and 1.08m deep] truncated the southern side of this ditch [F486=F688]. A narrow, steep sided slot [0.46m wide and 0.28m deep] was identified in the base of the ditch, which was filled by light greyish-brown gritty clayey silt [485]. This was overlain by successive grey-brown silty clay fills [484; 0.24m thick; 472; 0.42m thick; 471=1447; 0.3m thick]. A copper alloy coin of Trajan, dated to 114-117, was recovered by metal detector from here [471=1447]. However, this coin showed evidence of wear, and is therefore likely to have been in use for some time before eventually being deposited.

##### *Gully (Figure 29.6)*

- A1.181 An east-west aligned gully [F391=F792; 31m long], broadly parallel with ditch F470, formed the northern boundary of the enclosure and was filled by brown silty sand gravel [390=791]. The terminus of the gullies was identified in the east part of the area. Context 791 was cut by the Phase 5b gully F393=F790 along its northern side, indicating a redefinition of the boundary.

#### **Area F (Figure 29.5)**

- A1.182 An east-west ditch was identified in the central part of the area. A slightly curvilinear but broadly north-south ditch was excavated perpendicular to this ditch and extending south of it. A spread of material was located to the east of this second ditch, and was partially overlain by a rough stone wall.

##### *Ditches*

- A1.183 The east-west ditch [F1299; over 53m long, 1.3m wide, 0.55m deep] contained late 4<sup>th</sup> century pottery and therefore is presumably later than the Phase 3a ditch F1295, although no stratigraphic relationship was established between the two features. Ditch F1299 was filled by reddy-brown silty sand [1302; 0.12m thick], overlain by yellow-brown silty sand [1301; 0.15m thick]. Above this was brown clayey silty sand [1300; 0.34m thick].

- A1.184 A curvilinear ditch [F1316=F1348=1459; over 32m long, 1.12m wide, 0.65m deep] was identified traversing the west part of the area on a north-south alignment, turning eastward at its northern extremity. This was filled by greyish-brown silty sand [1317=1347=1458].

*Layer*

- A1.185 Ditch F1316 respected a sub-circular spread of dark black-grey sandy silt [976=1242; 9.8m long, 6.7m wide and 0.3m deep]. Finds recovered from the layer included pottery, an iron knife blade and a spindle whorl.

*Walls*

- A1.186 The remnants of two stone walls [F1446] were identified above the western part of context 1242. These comprised a northwest-southeast aligned southern section [2.24m long and 0.6m wide] and a perpendicular northeast-southwest aligned northern wall [2.8m long and 1m wide]. The walls comprised a single course of roughly-hewn and faced sandstone blocks. No evidence of a foundation cut was identified. However it seems likely that these form the corner of a rudimentary building which probably reused masonry from another structure within the villa complex. The walls had no direct physical relationship with the contemporary ditch F1316=F1348=F1459, although tumble from the wall partially overlay the fill of ditch.

**Area G (Figure 30)**

- A1.187 Two inhumations were located to the west of Area H, and a pit was identified to the north. The east and west boundary ditches (F16; F42; F45) excavated in Area A continued into this area.

*Burials*

- A1.188 The only features identified within the enclosure formed by the Phase 3 ditches [F709; F773; F1277] were two graves [F587; F589]. These directly cut the natural subsoil in the northwest part of the enclosure. Very little skeletal material was preserved in the graves. Grave F587 [1.8m long, 0.5m wide and 0.3m deep] was aligned east-west. A small fragment of cranium and several teeth [Burial 3] were recovered from the west part of the feature. The grave was backfilled by dark brown clayey silt [586], becoming sandier toward the base of the cut. Grave F589 [1.5m long, 0.52m wide and 0.25m deep] was aligned north-south. A small fragment of jaw and several teeth were recovered from the north part of the grave and two fragments of femur from the central part [Burial 2]. This grave had a similar fill.

*Pit*

- A1.189 An oval pit [F674; 0.96m long, 0.67m wide and 0.29m deep] was excavated to the north of Area H. It was filled by dark brown silty sand [673].

### **Area H (Figure 30)**

- A1.190 Area H was the focus of intense activity, with a number of gullies, pits and postholes identified. This included a small circular timber structure located towards the southern end of the area.

#### *Gullies*

- A1.191 The fill of the Phase 3c gully F798 (context 797) was cut by another north-south aligned gully [F748; 10.55m long, 0.43m wide and 0.47m deep], which was filled with brown sandy silt [747]. This was V-shaped in profile and continued to traverse the site southward for about 10m before taking a right-angle turn westward.
- A1.192 A north-south gully [F670=F712=F888=F910; 11m long, 0.8m wide and 0.42m deep] was identified 13.5m east of gully F748. This extended northward into Area G where it doubled back on itself to form a three-sided enclosure. It was filled by silty sand [669=711=887=909; 908]. A curvilinear gully [F890; around 13m long, 0.5m wide and 0.25m deep] was located between gullies F670 and F748: both terminals of this feature were identified. The first 5.5m were approximately orientated north-south, and the remainder of the feature curved gradually to the west, terminating in an east-west alignment. This was filled with brownish-orange silty-clay [889].
- A1.193 The curvilinear gully F890 was cut by a small east-west aligned gully [F886; 5.84m long, 0.25m wide and 0.2m deep], filled by orangey-brown silty-clay [885] which joined with the north-south gully to the east. At its east end it joined a similar gully [F884; 0.28m wide and 0.17m deep], filled by orangey-brown silty-clay [883]. Gullies F886 and F884 both cut gully F670=F712=F888=F910.
- A1.194 A short gully was identified within the centre of the area [F1086; up to 2m long, 0.61m wide and 0.31m deep], and was filled by grey and brown sandy silt [1085]. This was truncated by F1082, the cut for a central post of a timber structure (see paragraph A1.196). A gully was identified in the north part of the area [F1290; 3m long, 0.4m wide and 0.3m deep] and was filled with grey silty sand [1289]. This cut the Phase 3c gullies F1131=F1246 and F1125=F775.
- A1.195 The east side of the flue and stoke pit of the Phase 3d oven F1311 was truncated by a curvilinear gully [F1285; 6m long, 0.86m wide, 0.24m deep]. This was filled by greyish-brown sandy silt [1284]. The gully also cut the Phase 3b posthole F1360, the Phase 3d pit F1350 and the Phase 4 gully F1354, and continued below the baulk.

#### *Timber structure*

- A1.196 Two curvilinear gullies were present in the south part of the area [F1394/1395; F1172/1170=F1413/1412; 3.2m long, 0.86m wide and 0.4m deep]. The latter feature cut the pit F1101 and the fill of the Phase 3c gully F1281 (1280). In plan these two gullies appear to be related, forming part of a circular structure [4m in diameter]. The east terminals of both features were packed with stone. In the centre of this structure was a sub-circular pit

[F1082; 1.05m long, 0.8m wide and 0.27m deep], which was filled with sandy silt [1050] which contained a bronze patera handle. This pit may have housed a central post for the roof of the structure.

#### *Hollows*

A1.197 Two hollow areas were identified in the east part of the area. At the southern end of F890 and within the east part of the area was a hollow [F1008; 3.4m long, 3.4m wide and 0.35m deep] filled with brown silty sand [1007]. This feature [F1008] cut the earlier posthole F1021. A second hollow [F1425; 1.4m long, over 0.9m wide and 0.22m deep] was filled by context [1424]. This was later cut by a pit [F1427; 0.5m long, 0.3m wide and 0.36m deep], which was filled with brown sandy silt [1426].

A1.198 A further hollow [719; 4.37m long, 3.29m wide and 0.2m thick, filled with dark brownish-black sandy clay silt] was identified overlying posthole F1019, and also the Phase 3c gully F980, the Phase 3d gully F1493, and the Phase 4 hollow F978.

#### *Pits*

A1.199 Several oval pits were located in the area. Pit F1084 [1.9m long, 1.45m wide and 0.71m deep] was placed immediately west of the timber structure, and was filled by sandy silt [1083]. Two pits [F968; up to 2m long, 1.4m wide and 0.55m deep; F1362; 0.84m long, 0.82m wide and 0.4m deep] were located northwest of the timber structure; the second pit truncated the Phase 4 pit F1080. Pit F968 was filled by sandy silt [967], while pit F1362 was filled by dark brown sandy silt [1361]. Oval pit [F1382; 0.95m long, 0.62m wide and 0.34m deep] was located to the south of the timber structure and filled by clayey silt [1383].

A1.200 A large oval pit was also identified in the south part of the area [F1101; 2.43m long, 1.65m wide, 0.45m deep]. This was filled by brownish-black silt [1229; 0.12m thick], overlain by brown sandy silt [1100; 0.35m thick] and was cut by the northern gully of the timber structure (F1170). A circular pit [F1415; up to 1.2m in diameter and 0.67m deep] was also present. The pit was filled by silty sand [1414]. Pit 1415 cut the fill of the northern gully of the timber structure F1412.

A1.201 A circular or oval pit [F1279; 1.6m long, 1m wide and 0.5m deep] was located in the northern part of the area, and was filled by silty sand [1278]. This was cut by the gully F1290.

#### *Posthole*

A1.202 A posthole [F1019; over 0.49m long, 0.42m wide and 0.38m deep] was identified to the north of the timber structure, and was filled by sandy silt [1018]. It was partially overlain by the layer 719.

### **Phase 5b: late 4<sup>th</sup> to early 5<sup>th</sup> century (Figure 31)**

#### **Summary**

A1.203 An enclosure ditch was established (Areas A, B, C and E), separating the the villa buildings from the enclosure system. Two boundary features in Areas

B and C were contemporary with this. The ditch cut through the uppermost fill of the sunken paved surface feature in Area B; this deposit contained late 4<sup>th</sup> century pottery, providing a *terminus post quem* for the ditch. It also truncated the southern side of the Phase 5a metalled surface in Area B. The enclosure ditch was not in use for long, as later Phase 5 activity took place on its uppermost fill. The half-circular timber structure in Area C was replaced with a large circular stone building. This had an entrance on the eastern side, as well as an internal sunken wall. A number of post-pits for the preceding timber structure were cut by the foundation trench of this wall. An oven was established within the aisled building, towards its northwestern corner (Area C). The remains of a hearth were deposited over the western end of the former corn dryer in Area C. The building within Area D was demolished. A large stone was deposited in a pit to the south of the corn dryer in Area E. The enclosure ditch in Area E was overlain by gullies and pits. A large paved surface was established in Area H.

### **Area A (Figure 29)**

- A1.204 An enclosure ditch was established around the existing villa buildings, dividing them from the enclosure systems. Two ditches were recorded to the west of the preserved area.

#### *Villa enclosure ditch (Figures 32.1, 32.6 and 32.7)*

- A1.205 A large regular ditched enclosure [F62=F107=F231=F242=F252=F265=F580=F593=F972=F1063; over 260m long, up to 3.2m wide, and up to 1.5m deep] was identified. It was traced in Areas A, B, C and E, and formed the boundary of the villa complex. In Area B it was orientated east-west and extended east beyond the limits of excavation. It cut deposit 264, the backfill of the Phase 4 sunken paved surface F324, which contained four sherds of pottery dating from 375-420AD, providing a *terminus post quem* for the ditch. The ditch continued through Area C and into Area A, where it turned north and can be traced crossing the preserved area on the geophysical survey. The ditch continued north within Area E and then turned east again, extending beyond the limits of excavation.
- A1.206 The profile of the ditch varied; sections F62 and F107 revealed steeply sloping sides, with a gently rounded base and a narrow slot in the middle of the base. The remaining sections excavated across the ditch indicated the profile was a wide U-shape with a V-shaped slot along the base of the ditch. The slot was filled by blue-grey silty sand [116; 0.22m thick], overlain by brown sandy silt [61; 0.09m thick]. Some slumping was identified on the west side of the feature, comprising brown-yellow silty sand [117; 0.05m thick]. In the centre part of the line of the ditch some slumping was identified on the north part of the ditch. This comprised orange-greyish-brown sandy silt [245; 0.24m thick], overlain by yellow-brown silty sand [244; 0.06m thick].
- A1.207 These initial deposits within the ditch comprise thin layers of silting and slumping. The later deposits are much thicker, reflecting deliberate infilling. These ditch fills included a greyish-brown clayey silt [73=119; 0.48m thick] and a dark silty-clay in the east part of the site [246=253=734; up to 0.31m

thick]. 73=119 was overlain by greyish-brown sandy silt [63; 0.72m thick]. This was overlain by the main fill of the ditch, which comprised greyish-brown sandy silt in the west of the site, becoming a brownish-grey silty-clay in the east part of the site [243=232=251=294=579=592=971; up to 1.03m thick]. The upper fill of the feature as it ran north-south comprised brown-orange sand sandy-clayey silt [74=108=1273=1461; up to 0.79m thick]. Large stone rubble inclusions were identified throughout this context. The difference in texture of the fills is probably due to the change in natural subsoil across the site. In the west part of the site gravels and sands underlie the site, while to the east the natural subsoil is dominated by boulder clay.

*Ditches (Figures 32.2, 32.4)*

- A1.208 The terminal of a north-south ditch [F24; over 2.5m long, 2.1m wide and 0.62m deep] was identified towards the western edge of the area. It was filled by dark brown silty sand [23]. A further north-south boundary ditch [F1153; approximately 12m long; 1.1m wide and 0.3m deep] was located immediately to the west of the preserved area, cutting gullies F1155, F1157 and F1224. The northern end of the ditch extended into Area G and then turned east, continuing towards Area H.

**Area B (Figure 32.7)**

*Ditch*

- A1.209 A linear north-south aligned ditch was identified [F240; 14m long, 1.61m wide and 0.66m deep] to the south of the villa enclosure ditch. It had a V-shaped profile and was filled with clayey silty sand [239]. This ditch joined the main east-west villa enclosure ditch, forming a subdivision of the area to the south of the villa buildings.

**Area C**

- A1.210 A gully was located to the south of the villa enclosure ditch. A layer of sandy silt material was identified within the aisled building, along with an oven located towards the northwest corner of the building. A circular stone building was constructed to the west of the aisled building. The remains of a hearth were deposited on the abandoned corn dryer.

*Ditch (Figure 32.6)*

- A1.211 A linear north-south aligned gully [F255; 22m long, 1.94m wide] was identified to the south of the villa enclosure ditch. It had a clayey silty sand fill [254]. The profile of the gully indicated that several re-cuts of the feature had been made but it was not possible to distinguish between the fills. Like ditch F240 this gully joined the main east-west villa enclosure ditch, forming a subdivision of the area to the south of the villa buildings.

*Aisled building: layers; oven*

- A1.212 A sandy silt layer [380=381=382; 0.2m thick] was identified overlying the natural subsoil within the building; this was later overlain by a layer of sandy silt [286]. Pottery from one of the pits below this layer indicates that it is likely to date to the late 4<sup>th</sup> or early 5<sup>th</sup> century.

A1.213 An east-west oven [F276; 2.8m long, 1.18m wide,] with a stoke pit [F374/375] on its eastern side, was excavated close to the northern wall of the building. The construction cut of the oven flue [F377; 1.6m long, 1.1m wide and 0.5m deep] was filled by the stone flue F276, comprising up to two courses of stone with clay bonding [453]. The flue was filled by a black charcoal deposit [452=376; 0.12m thick]. Above this was a mixed brown silt and red clay [373; 0.5m thick].

*Circular building [F237] (Figure 32.5; Plate 4)*

*Construction: foundations; wall; internal wall; pits*

A1.214 The foundation of a circular stone building was identified, with an entrance on the east side of the structure. The foundation construction cut [F238; up to 1.08m wide and 0.4m deep, with an internal diameter of 8.4m] was filled by the stone wall footing [F237; 0.6m wide]. This comprised a single course of pitched, end-set sandstone fragments. The stones were angular to sub-angular in form and were placed in rough lines across the construction cut. The stones were tightly packed with no bonding material present. The construction cut was backfilled with orange-brown sandy silt [234].

A1.215 A series of heavily truncated intercutting pits was identified in the eastern part of the structure. Two pits [F989; 0.8m in diameter and 0.23m deep; F1198; 2.54m long, 0.6m wide and 0.27m deep] were identified, both containing grey-brown sandy silt fills [988; 1197]. These were both cut by another pit [F987; 1m in diameter and 0.32m deep], which in turn was cut by pit F949 [2.25m in diameter and 0.31m deep], also both with greyish-brown sandy silt fills [986; 948].

A1.216 The east-west foundation cut [F677=F219; 3.2m long, 1.3m wide and 0.52m deep] for an internal wall was identified in the east part of the building, cutting through the pits F949, F987, F989 and F1198. It was filled by a clay plinth foundation [743; up to 0.6m thick]. A small pit [F760; 0.4m in diameter and 0.35m deep] cut the plinth. The pit was filled by dark reddish-brown clayey silt [759]. This was overlain by a stone wall [F744=F218], comprising a single line of up to five courses of sandstone blocks. The flat dressed faces of the blocks all faced north, with angular or triangular backs projecting southward. The wall bowed southward at the centre. The rear part of the wall was backfilled with rubble packing. The construction cut was backfilled by dark brown clayey silt [220=678]. The construction of the wall indicates it was not free standing and instead functioned as a revetment. However, it is not clear what it was revetting, and so the precise function of this structure is unknown.

*Disused corn dryer (Figure 33.1)*

A1.217 A deposit of charcoal [708; 0.35m long, 0.3m wide and 0.6m thick] was identified overlying the south-east part of the corn dryer. This was overlain by baked clay [309; 0.61m long, 0.34m wide and 0.07m thick], and is interpreted as the inverted deposition of the remains of a hearth.

**Area D (Figure 33.2)**

*Possible wall lines; demolition layers; flagged surface; stone spreads*

- A1.218 In the north part of the area two possible stone wall lines were identified [F612=F629; 3.5m long, 0.7m wide and 0.3m deep; F630/633; 3.8m long and 0.7m wide]. These mirror the east-west/north-south orientation of the Phase 3b posthole alignments. The badly damaged remnants of compact pebble surfaces [F601; F608; F611; F625; F626; F628; up to 0.05m thick] and a large quantity of jumbled sandstone rubble was identified overlying the area. These included stone spreads comprising large roughly-dressed sandstone blocks [597; 609; 644; 654], mixed flat, angular and sub-angular rubble [598; 599; 600; 602; 603; 604; 605; 610; 613; 619; 631; 638; 643; 650; 655] and lime mortar [596]. The deposits also included layers of clay [333; 651=1215; 652], and sandy silty-clay [607; 614; 615; 620; 622; 632; 645; 703]. A possible flagged surface [F648] was also identified, as well as stone spreads comprising mixed flat, angular and sub-angular rubble [649]. These spreads constitute demolition deposits from the Phase 3c building which once stood here.

**Area E**

- A1.219 The villa enclosure ditch was seen extending into this area. Other activity was reflected by the presence of a gully, a pit and a posthole at the southeast corner of the area, and also an east-west gully.

*Villa enclosure ditch: northern part*

- A1.220 The north part of the villa enclosure ditch [F1063; 3.4m wide] was identified continuing north from the preserved area and then turning east before extending beyond the limits of excavation. This was only partly excavated in this area, but some finds were recovered from the grey sandy silt upper fill [1461=1273], including pottery, bone and a copper alloy brooch.

*East-west gully (Figure 33.4)*

- A1.221 A gully [F393=790; 31m long 0.8m wide and 0.27m deep] was cut along the same alignment as the Phase 5a gully F391=F792. The terminus of the gully was identified in the east part of the area, and it was filled by silty sandy gravel [392=789].

*Posthole; pit; gully; (Figure 33.2)*

- A1.222 The area immediately north of Area D was a focus of activity. A posthole [F704; 0.6m long, 0.3m wide and 0.18m deep] was identified west of the Phase 5a gully F688, and was filled by clayey silt [705]. A pit [F681; 1.59m wide, over 0.88m long and 0.72m deep] cut gully F688 and was filled by clayey silts [684; 0.17m deep; 683; 0.33m thick; 682; 0.31m thick]. These two features were both cut by the linear gully [F694; over 11.9m long, 0.41m wide and 0.16m deep] which was filled by dark grey silty-clay [695]. The northern terminal of the gully was identified close to F704 and traversed the area on a north/south orientation before making a right-angled turn east-west. Another branch of this gully [F692=F527; 2.8m long, 0.23m wide, 0.15m deep] was identified running west from the southwest corner of F694. This was filled by grey clayey silt [693=526].



### **Area F (Figure 33.3)**

#### *Ditch*

- A1.223 The upper fills of the Phase 5a ditch F1299 were both cut by an east-west aligned linear ditch [F1293; 1.48m wide, 0.71m deep]. This was filled by reddy-brown clayey sandy silt [1294].

### **Area G (Figure 34)**

- A1.224 The north end of ditch F1153 [F769; 1.2m wide and 0.65m deep] was identified in Area A; this ran north and then turned east. It was traced as far as Area H before terminating, and was filled with a dark brown silty-gravel [776; 0.28m thick] overlain by a dark orangey-brown clayey silt [768; 0.35m thick].

### **Area H (Figure 34)**

- A1.225 A pit was identified in the northern part of the area. Two paved surfaces were established covering many of the earlier features in this area. The surfaces were covered by a deposit containing significant amounts of Roman pottery.

#### *Pit*

- A1.226 A sub-circular pit [F1292; 1.07m wide, 0.51m deep] was filled by silty sand [1418]. Three large stones [F1291] were identified above this, and are likely to be a post-pad.

#### *Layer*

- A1.227 A layer of dark brownish-black clayey silt [1016; 0.2m thick] was identified overlying the central and southern parts of the area which contained large amounts of Roman pottery.

#### *Paved surfaces*

- A1.228 Two paved areas were identified overlying the deposit 1016. One of these was in the southwestern part of the area and continued beneath the southern baulk into the preserved area [F749; 3.3m by 3m]. This comprised large stones, up to 0.38m by 0.41m in size. A second extensive area of stone paving was identified [F879=F1463; 14m long by 10m wide]. This respected the gully F798, which marked the western limit of the stones. The feature comprised large stones measuring up to 0.48m by 0.36m and is likely to be either the floor of a rectangular building, or an open working surface.

#### *Deposit*

- A1.229 A deposit of dark brown silty sand [750; 14.77m long and 14.52m wide] was identified overlying paved surface F749 in the southwest part of the area.

### **Phase 5c: late 4<sup>th</sup> to early 5<sup>th</sup> century (Figure 35)**

#### **Summary**

- A1.230 The main north-south enclosure ditch was re-established in Areas A, F and G. The wall in Area B was demolished, with rubble spread across the back-filled enclosure ditch. Alterations were made to the aisled building, with the construction of an internal division wall. A pit was later excavated over this wall, presumably to rob the stonework. A small number of other pits were

created within the structure. A number of pits were also excavated within the stone circular structure (Area C). A stone corn dryer was constructed in the northeast corner of Area E. This was established directly above the former villa enclosure ditch, cutting a gully that also overlay the top fill of the enclosure ditch. Further gullies and pits were excavated within Area E, and a sub-enclosure was also identified to the south of the corn dryer.

### **Area A (Figure 36.1 and 36.3)**

#### *Ditches*

- A1.231 The main north-south ditch [F51=F79=F88=F186=F194; 3m wide and about 0.8m deep] was re-established, traversing the length of the east part of the area and extending into Areas F and G. This cut the three earlier ditches which were along the same alignment, and had a U-shaped profile. It was filled by a primary deposit of grey clayey silt [41=67=77=87=185; up to 0.55m thick], overlain by dark greyish-black silt [10=50=78=86=195; up to 0.5m thick].

### **Area B (Figure 36.2)**

- A1.232 A deposit of rubble deriving from the demolition of the Phase 5a wall, and four pits, were identified in this area.

#### *Rubble deposits*

- A1.233 Extending north from the Phase 5a wall F260 was a brownish-grey sandy-clay deposit [261=918; over 7.9m long, over 6.5m wide and 0.27m thick]. This material also covered the fills of the Phase 3b ditch F483. Large amounts of stone rubble were present within it. Further rubble [262; over 5.4m long, over 5.4m wide and 0.18m thick], including some squared-off blocks, was identified to the south of wall F260 covering the Phase 5a stone surface 263. Both rubble deposits continued east beyond the limits of excavation.

#### *Pits*

- A1.234 Two pits were identified to the north of the Phase 5a wall F260, cutting the rubble deposit 261. A pit [F478; 0.78m long and 0.38m deep] was identified in section cutting the rubble [261]. This was filled by light yellowish-grey clayey sand [508; 0.12m thick] overlain by dark black-brown sandy-clay [477; 0.3m thick]. This was cut by a steep-sided posthole [F476; 0.53m in diameter and 0.25m deep], filled with dark brownish-grey sandy-clay [475].
- A1.235 Two further pits were identified to the south of wall F260. An oval pit [F571; 1.22m long, 0.88m wide and 0.28m deep] was filled by brownish-grey silty-clay [570]. This cut pit F569 and postholes F573 and F582 from Phase 3a, as well as the villa enclosure ditch from Phase 5b. The sub-oval pit [F595; 1.19m long, 0.32m wide and 0.18m deep] also cut the southern edge of the villa enclosure ditch and was filled by light brownish-grey silty clay [594].

### **Area C**

- A1.236 The aisled building underwent some modifications, with the construction of a division wall towards the western end of the structure. A number of pits

were also dug at the eastern and western ends of the building. Some areas of rubble also belong to this phase. Several pits were excavated within the circular stone building, and two larger pits cut its foundation on its northern side. A rubble spread was located to the south of the circular structure, which may relate to the Phase 3a wall F297. A layer of material [287=352; up to 0.46m thick] was identified to the north of the aisled building, but the precise extent of this deposit was not determined.

*Aisled building: internal wall; postholes; pits; demolition debris; burnt patch; layer (Figure 36.2)*

- A1.237 A layer of yellowish-brown sandy silt [286; 0.1m thick] was identified within the building covering the fills of the Phase 5b oven F377. All subsequent activity identified in the building cut through or overlay this material.
- A1.238 A U-shaped construction slot [F1049; over 6m long, 1.2m wide and 0.18m deep] for an internal partition wall [F1048=F277] was identified in the west part of the building. This was aligned north-south and abutted the north and south walls of the building. Discrete patches of tightly packed stone were identified within the slot, one of which was excavated in the south part of the feature to reveal a posthole [F278; 0.9m long, 0.8m wide and 0.45m deep] filled with orange-brown slightly silty sand [428]; this indicates a wooden internal partition with timber uprights and possibly a wattle and daub wall. The slot had been backfilled by light greyish-brown sandy clay [1047].
- A1.239 Two pits were found in this part of the building [F275; F451; 0.4m in diameter and 0.11m deep]. The former was filled with stone in a silty sand matrix [385], the latter with dark yellowish-brown mixed silty sand with frequent charcoal and clay inclusions [441; 0.11m thick]. A patch of charcoal was also identified, possibly the truncated base of a hearth [442; 0.02m thick].
- A1.240 In the east part of the building two postholes were identified [F280=F446; 1.24m long, 0.91m wide and 0.06m deep; F281; 0.54m long, 0.42m wide and 0.14m deep]. The former comprised tightly-packed stones and was not excavated. The latter two were both filled by grey silty sand [295; 445]; context 295 also contained stone packing.
- A1.241 Adjacent to the west side of posthole F281 a shallow area of heat-affected soil was identified [F279; 0.06m deep, 1.24m long and 0.91m wide], which included patches of reddened sand and charcoal flecks [285]. It is likely this deposit is the base of a hearth.

*Circular building: pits (Figure 36.4)*

- A1.242 In the north-west part of the building, a silty clay layer [717] had been cut by two sub-circular pits [F548; 0.4m long, 0.38m wide and 0.3m deep; F550; 1.26m long, 1.1m wide and 0.26m deep]. Both pits had a similar fill, comprising dark greyish-brown sandy silt [549; 551]. Pit F548 was cut by a large sub-circular pit [F546; 1.1m in diameter and 0.24m deep], also filled by greyish-brown sandy silt [547]. The edge of this pit [F546] and pit F550

were cut by another pit [F543; 1m in diameter and 0.4m deep], filled by dark brown clayey sandy silt [544]. In the south part of the building was an isolated pit [F401; 0.89m long, 0.81m wide and 0.44m deep], with a primary fill of greyish-brown sandy silt [400; 0.38m thick]; this was overlain by dark greyish-black sandy silt [399; 0.09m thick]. Part of the wall of the circular building was truncated to the north-west by two sub-circular pits. The first pit [F1471; 2.1m long, 1.9m wide and 0.4m deep] was filled by dark greyish orangey-brown silty sand [1470]. This was cut by the second pit [F753; 2.45m long, 1.32m wide and 0.5m deep], which was filled by greyish-brown clayey silty sand [752].

*Rubble spread (Figure 36.4)*

- A1.243 To the south of the circular building was a spread of rubble [3.9m long, 2.06, wide and 0.25m thick] which is presumed to derive from the demolition or collapse of the Phase 3a wall F297. This deposit only extended south of the wall and overlay the backfill of the villa enclosure ditch.

*Layer*

- A1.244 Within the northern part of the area a layer of dark brown silty sand [287=352; 0.22m thick] was identified overlying the buildings and features. Later features cut through this material, suggesting that there was a break in activity in this area.

**Area E (Figure 37)**

- A1.245 Activity in this phase was concentrated in the eastern half of the area. A gully, pit and posthole were established at the northeastern corner of the area, with the gully cutting the backfill of the villa enclosure ditch. The gully was then truncated by the cut for a T-shaped corn dryer which is presumed to have replaced the Phase 4 corn dryer in Area C. Southwest of this was an irregular four-sided sub-enclosure, with two further gullies and another pit to the southeast.

*Gully*

- A1.246 Curvilinear gully F991=F1270 [6.8m long, 0.4m wide, 0.22m deep] was identified cutting the villa enclosure ditch fill 1461=1273. It was filled by greyish-brown clayey silt [990=1269]. The southern terminal of this feature was truncated by the pit F992. The northern terminal of the gully was partly truncated by the construction pit [F566] of the corn dryer F761, also of this phase (see paragraph A1.248).

*Pit*

- A1.247 A heavily truncated circular pit [F1421; 0.5m in diameter and 0.49m deep] was also identified cutting the villa enclosure ditch fill 1461=1273 in the northeast corner of the area. This was filled by pinkish-brown silt [1423; 0.28m thick] which contained the partly-articulated remains of a pig. Overlying this was the upper fill of the pit, which comprised brown sandy silt [1422; 0.49m thick]. Three sandstone blocks capped the pit.

*Corn dryer [F761]: construction*

- A1.248 A large oval construction cut [F566; 5m long, 2.4m wide, 0.9m deep] was identified truncating the pit F1421, and also cutting through the gully F991=F1270 and the villa enclosure ditch fill 1461=1273. This was aligned east-west along its long axis. The primary fill of the construction pit comprised greyish-brown clayey silt [1104=1267; 0.65m thick], located on the north [1104] and south [1267] parts of the cut.
- A1.249 Within the pit a corn dryer [F761; 5.3m long, 2.18m wide and 1m deep] was constructed, comprising a T-shaped flue, stoke pit, and drying floor. The flue comprised two parallel east-west stone walls [F1260 (north); 2.59m long, 0.22m wide and 0.9m high; F1259 (south); 2.29 long, 0.36m wide and 0.95m high]. This was fed from a stoke pit on the east side of the flue. At the mouth of the flue the stone foundations were deeper, comprising undressed boulders overlain by roughly dressed blocks. These showed indications of blackening from heat, as did all the stones.
- A1.250 The stone walls F1259 and F1260 were both one course wide, bonded with clay [1066; 1067], and comprising roughly dressed sandstone blocks, up to 3 courses deep. The flue gently sloped down west to east toward the stoke pit, and there was a clay lining [1265=1264] to the north and south walls of the flue.
- A1.251 The boulders identified at the mouth of the flue to F761 also formed the foundations of two north-south aligned walls [F1258 (north); at least 0.5m long, 0.72m wide and 0.62m high; F1257 (south and with clay bonding [1272]); 1.14m long, 0.27m wide and 0.4m high]. These were set perpendicular to the eastern ends of the flue walls F1259 and F1260. The wall F1258 extended northward for 0.5m. The wall F1257 extended southward and sloped upward from the flue, joining an east-west stone-wall [F656; 1.8m long and 0.3m high] set parallel to the east-west flue. This wall was two courses high, laid on clay footings [1266] and bonded by clay [659]. Together F1257 and F656 formed the wall of the drying chamber. It is likely that a similar wall existed north of the flue; however a few patches of stone were all that survived here.
- A1.252 A second flue [F1070] was identified perpendicular to the first at the west end. It was of a different construction to the rest of the structure, incorporating a row of vertically-placed stone slabs [F1069; 1.5m long and 0.35m wide]. This had been truncated by later activity.
- A1.253 A clay layer or surface [1105; 0.15m thick] was identified butting against the southern wall of the corn dryer [F656]. It is likely that this was a working surface associated with the corn dryer. A narrow slot [F1065; 1.8m long, 0.2m wide, 0.15m deep] cut this surface. It was filled with brown gritty silt [1064]. It is likely this was a construction slot for a wooden structure parallel with the corn dryer.

*Pits; gully*

- A1.254 A sub-circular pit [F1419; 1.52m long, 1.14m wide, 0.48m deep] was identified to the south of surface 1105. A huge sub-rounded boulder [0.72m long, 0.64m wide and 0.4m thick] had been deliberately placed within this pit. The majority of the stone protruded above the pit, and it was positioned so that the flattest face was on top. It is therefore likely that this formed a working surface associated with the corn dryer, although there was no evidence of use-wear. The pit was filled by grey sandy silt [1420].
- A1.255 A truncated sub-oval pit [F1434; over 0.33m long, 0.5m wide, and at least 0.28 m deep] was located to the southeast of the corn dryer. It was filled by dark grey clayey silt [1435]. This pit continued beyond the eastern limit of the excavation.

*Sub-enclosure*

- A1.256 A single gully [F555=F559=F662=F663= F794; 46m long, 0.6m wide and 0.16m deep] formed a sub-enclosure. This cut gullies from previous phases [F553 (Phase 3a); F791 (Phase 5a); and F789 (Phase 5b)]. The enclosure formed a rhomboid with internal dimensions of 15.3m by 11.3m at its widest points. Both terminal ends of the gully were to the northeast. The gully was filled with greyish-brown sandy silt [554=558=793].

*Gullies, pit*

- A1.257 At the southeastern corner of Area E a gully [F690=F529; DH1m long, 0.57m wide, 0.19m deep] was identified cutting the western end of the Phase 5b gully F692. This was filled by grey silty-clay [691=528] and was truncated at its northern end. To the east a short section of what appeared to be a curvilinear gully [F679; at least 3.8m long, 0.68m wide and 0.27m deep] was identified truncating the eastern end of the Phase 5b gully F694. It was filled by dark grey gritty clayey silt [680]. Between these two gullies was a pit [F685; 1.52m long, 1.1m wide and 0.59m deep]. This also cut gully F694. This was filled by reddish-brown silt [687; 0.08m thick] overlain by brownish-grey clayey silt [686; 0.52m thick]. The two gullies are on a different orientation to the underlying enclosure system, indicating that they belong to a different phase.

**Phase 5d: late 4<sup>th</sup> to early 5<sup>th</sup> century (Figure 38)**

**Summary**

- A1.258 An oven was constructed at the southeastern corner of the aisled building. Overlying the oven and the interior of the aisled building were several layers, including a demolition layer. A coin dating to AD364-75 was recovered from one of these layers. The circular stone building was abandoned, and the internal area was covered with demolition rubble. This deposit contained coins dating to AD353-8 and AD388-402, and was cut by a pit. An oven was constructed in the centre of Area C, and two pits were dug immediately to the east. A cist burial was inserted into the west end of the corn dryer in Area E. An elongated pit and two postholes were also excavated to the south of this burial, and south and west of these features were two gullies and a pit. A second oven was located in the south of Area

F which had been constructed over the backfill of the Phase 5b villa enclosure ditch.

**Area C (Figure 39)**

- A1.259 An oven was established at the southwestern corner of the aisled building, with layers covering the interior of the building. The circular stone structure was covered with a demolition layer, which was cut by a pit. To the north of the aisled building a further oven was constructed.

*Aisled building: oven, layers (Figure 39.2)*

- A1.260 An east-west oven [F274] butted the eastern face of the west wall of the building. The flue construction cut [F368; 2.65m long, 1.12m wide, 0.47m high] was filled by dark brownish-black silty sand [371; 0.15m thick], over which the flue walls [F462; 1.38m long, 0.3m wide and 0.34m high; and F463; 1.4m long, 0.2m wide 0.43m high] were built. These comprised up to three courses of stone. The construction cut was backfilled with dark orangey-brown silty sand [369; 0.35m], which was behind F462 and overlay a stone rubble backfill [464; 1.8m long, 0.25m wide and 0.2m thick]. Finds recovered from the backfill of the construction cut [369] included bone, pottery, slag, flint, iron and a coin dated to AD 353-58. The flue opened into a deeper cut on the east side [465; 1.06m long, 0.4m wide, 0.3m deep], possibly the remains of a stoke pit. The flue was filled by greyish-brown silty sand with fired clay and charcoal inclusions [370; 0.65m thick].
- A1.261 The entire interior of the building, including the oven, was overlain by a brown sandy silt layer [273; 0.2m thick]. Pottery was recovered from this deposit, as well as a coin dated to AD 364-75. The layer was overlain by dark brown silty sand [272; 0.15m thick] and a mixed light brown soil and rubble demolition layer [271; 0.21 thick]. The latter was identified in the west part of the building adjacent to the walls of the building, whilst a similar layer [386; 0.23m thick] was also identified in the east part of the building along the edges of wall F409.

*Circular building: demolition (Figure 39.3)*

- A1.262 The building was overlain by rubble layers [233; 0.15m thick; 235=236; 0.15m thick]. Two coins were recovered from the rubble [236]. The first dated to AD 353-358; the second to AD 388-402, providing a *terminus ante quem* for the abandonment of the building. Immediately south of the centre of the building the rubble was cut by a circular pit [F395; 1.24m long, 0.67m wide and 0.49m deep]. This was filled by dark greyish-black sandy silt [394]. This pit and the demolition horizon 235=236 were covered by a layer of greyish-brown sandy silt [233].

*Oven F319; pits (Figure 39.1)*

- A1.263 To the north of the aisled building an east-west sub-rectangular construction cut [F367; 2.6m long, 0.9m wide and up to 0.54m deep] was made through the Phase 5c layer 352. This was partially backfilled with sandy silt [336; 0.29m thick], onto which an oven [F319; 1.4m long, 0.55m wide and 0.35m deep] was constructed. This comprised two parallel lines of vertically-placed large sandstone slabs. These had been bonded by red clay [359].

These formed the flue of the oven, blocked at the west end and fed from a sub-rectangular stoke pit to the east of the flue [F389]. Both the flue F319 and stoke pit F389 were filled by reddy-brown silty clay with stone and fired clay inclusions [318; 388; 0.4m wide and 0.46m deep]. An unfinished small portable altar was recovered from the fill. The stones within the top part of the fill may have originally formed a roof to the flue. The stone was surrounded by a layer of red clay [320], most likely derived from the collapsed superstructure of the oven.

*Pits (Figure 39.1)*

- A1.264 Two oval pits were located to the east of the oven F319. The first pit [F450; over 1.2m long, 1.08m wide and 0.85m deep] was filled by brown sandy silt with frequent stone inclusions [449]. The northern side of the pit was cut by the second pit [F448; 1.67m long, 0.87m wide and 0.5m deep]. This was also filled by brown sandy silt with frequent stone inclusions [447].

**Area E (Figure 40)**

- A1.265 The corn dryer was backfilled and covered by deposits of sandy silt, clay and rubble. A cist burial was inserted into the north-south flue at the western end of the structure. To the south of the corn dryer was a spread of material, which was cut by some pits, one of which contained a substantial boulder. A third pit was located at the southwestern corner of the corn dryer. South and west of this area of activity were two further gullies and a small pit.

*Corn dryer: back-fill; layers; (Figure 40.3)*

- A1.266 The primary fill of the main flue of the corn dryer, formed during its last use, was a light brown sandy silt [1110; 0.02m thick]. The remaining deposits within the structure are deliberate backfilling. Above the silt in the flue was a black charcoal-rich silt fill [1109; 0.06m thick]. This was overlain by ashy grey silt [1108; 0.14m thick]. Partially covering this was a mottled silty clay [1263; 0.25m thick], but it was also overlain by a mixed rubble and clay deposit [1107; 0.4m thick]. A similar deposit [1106; 0.5m thick] overlaid the silty-clay 1263. These deposits [1106 and 1107] were covered by a third layer of clay and rubble [658; 0.43m thick], raising the level of the interior of the corn dryer to the existing ground level. A layer of dark brown silty clay sand [660; up to 0.5m thick] was identified overlying much of this part of the site; ploughing had partially mixed this layer with the underlying deposits. This layer [660] was cut by a large pit in the area of the stoke pit [F1261; 2.1m long, over 0.5m wide and 0.67m deep]. This was filled by brown clayey silt with frequent stone rubble inclusions [1262].

*Cist burial [4]*

- A1.267 The north-south aligned flue at the western end of the corn dryer and the southern wall of the Phase 5c drying chamber [F656] had been partially truncated by a grave cut [F1436; 2m long, 0.65m wide to the south, narrowing to 0.4m wide to the north, and 0.6m deep]. This was placed along the length of the mostly intact north-south flue. The sides of the cut and the interior walls of the flue were lined by large, flat sandstone slabs set on end and forming a cist [F1274]. The skeletal remains were badly preserved and included part of the skull, upper arms and left leg. The body was placed in



an extended supine posture with the head to the north. A sample of the cranium was taken for radiocarbon dating, producing a date of cal AD 230-390 (95% certainty). The corn dryer was constructed on the backfill of the villa enclosure ditch. The southern side of this ditch cut two features which contained pottery dating to AD 375-420 (see paragraph A1.205). Together with the radiocarbon date, this suggests that the ditch was excavated and backfilled, and the corn dryer constructed, used and abandoned, between AD 375 and AD 390. The primary fill of the grave comprised grey sandy silt [1437; 0.35m thick]. The grave was capped by horizontally-laid large sandstone slabs [F1275]. These were overlain by an upper grave fill, comprising dark greyish-brown charcoal rich clayey silt [1068; 0.26m thick]. Over this was a deposit of charcoal-rich silty-clay [672; 0.39m thick] which also overlay clay and rubble layer 658 and silty-clayey sand layer 660.

*Layer; pit*

- A1.268 The southern part of the corn dryer was overlain by a layer of dirty-yellow clay [657; 0.4m thick] which overlay context 672 and probably derived from the destruction of the corn dryer. This was cut by a shallow circular pit [F1103; 0.6m in diameter and 0.1m deep] located at the southwest corner of the corn dryer, which was filled by brown sandy silt [1102].

*Layer; pit*

- A1.269 Overlying the silt over much of this part of the site [660] was a layer, possibly a surface, of mottled brown-yellow clayey silt [661=F567; 4m by 3.5m and 0.3m thick]. This contained infrequent stone inclusions throughout. A steep sided sub-oval pit [F995; 2.4m long, 1m wide and 0.55m deep] was identified cutting this. Stone fragments lined part of the base of the pit. The pit fills included a brown silty sand with clay lenses [993=1015; 0.2m thick]. This was overlain by a dark greyish-black silt [994; 0.23m thick]. Above this was a yellow sandy-clay lens [1014; 0.1m thick], overlain by grey clay with yellow and red clay lenses [992; 0.3m thick]. Finds recovered from contexts 1015 and 994 included pottery, iron nails, a copper alloy bracelet, a quern fragment and cremated bone.

*Gully*

- A1.270 The fill of the Phase 5c pit F1434 was truncated by a linear gully [F1432; over 1.4m long, 0.6m wide and 0.38m deep], which also cut the contemporary layer 660 (fill of the corn dryer) and was filled by reddish-brown clayey silt [1433]. The gully extended beyond the baulk.

*Gullies (Figure 40.1)*

- A1.271 Two gullies formed the eastern and western sides of what is presumably a small enclosure, although no northern or southern sides were identified. The Phase 5c rhomboidal sub-enclosure F555 had been cut along its western edge by a gully which was parallel with it [F561; over 15.45m long, 1.25m wide and 0.43m deep]. This formed the eastern side of the enclosure and was filled by dark brown sandy silt [560]. The southern extent of the gully was not excavated due to a concentration of modern sheep burials.

A1.272 To the west of and parallel with gully F561 was a second gully [F405=F460; 27.6m long, 0.89m wide, 0.61m deep]. This cut the west end of the Phase 3a gully F458. It had a V-shape profile and joined the villa enclosure ditch to the north and south but was not traced beyond it. It was filled by brown silty sand [404=459].

*Pit (Figure 40.2)*

A1.273 A sub-circular pit [F698=F563; 0.88m wide and 0.65m deep] cut the Phase 5c gully F529=F690. This was filled by brownish-grey gritty clayey silt [700] overlain by grey clayey silt [699=562]. This upper fill contained a coin dating to AD 330-1.

**Area F**

*Oven (Figure 40.4)*

A1.274 A north-south aligned construction cut [F983; 3.4m long] for an oven [F975] was cut into the uppermost fill of the Phase 5a ditch F982. In the north part of the feature a stoke pit [1.4m in diameter and 0.45m deep] was identified. A stone flue [F1268; 0.9m long, 0.8m wide (0.3 internally) and 0.3m deep], comprising two parallel stone walls (surviving up to two courses in height) and a stone-lined base, linked the stoke pit to the oven [0.8m wide, 1.2m long and 0.4m deep]. At the point where flue and the oven join, the sand had been discoloured by heat. The base of the stoke pit was filled by dark brownish-black sandy-clayey silt [1256; 0.45m thick]. This was overlain by black silt [1271; 0.2m thick], which also filled the mouth of the flue. The black silt was overlain by a large stone slab. The oven was filled by greyish-brown silty sand [1195; 0.34m thick]. Above this was a deposit of solid orange clay with stone inclusions [1196; 0.3m thick], the remains of the oven's superstructure. Above context 1271, within the flue, a deposit of mixed orange-brown clayey silt was identified [1190; 0.2m thick].

**Phase 6: 5<sup>th</sup> to 7<sup>th</sup> century (Figure 41)**

**Summary**

A1.275 As with the Bronze Age and late Iron Age/early Romano-British occupation, evidence of activity in the sub-Romano-British and Anglian periods is spread over a wide area. The number of features that have positively been identified as belonging to this period is small, despite the presence of a substantial amount of Anglian pottery. Two possible *Grubenhäuser* were identified in Areas A and G. Evidence for the re-use of the paved surfaces in Areas C and H was also found. Several sub-oval 'fire-pits' were identified, associated with working surfaces. These pits were filled with large amounts of charcoal and fire-cracked cobbles; they are likely to be Anglian in date and to have been used for cooking. Several intercutting pits were excavated in Area H, including a large deep feature.

**Area A (Figure 42)**

A1.276 A possible *Grubenhäuser* was located towards the centre of the area. To the north of this was a series of curvilinear ditches. Two pits were located east and southwest of the possible *Grubenhäuser*.

*Possible Grubenhaus (Figure 42.1)*

- A1.277 A large hollow was found in the north part of the area [F4=F26; 7.45m long, 6.35m wide and 0.7m deep]. The edges of the hollow were difficult to define due to the similarity of the fills to the surrounding subsoil. Where the edges were identified they were steeply sloping, levelling out to a flat base. The feature was filled by brown silty sand [3; 0.4m thick], overlain by dark brown silty sand [2=25; 0.3m thick]. Finds recovered from these fills included a large amount of pottery, bone and flint, including 143 sherds of Anglian pottery. No postholes or structural features were identified within the cut, but it is possible that this is a *Grubenhaus*.

*Ditches (Figure 42.1)*

- A1.278 Three parallel curvilinear ditches were identified in the north part of the area and appear to enclose an area to the north of Area A. However, as this lies within the preserved area it was not possible to identify what type of activity was being enclosed. The northernmost boundary ditch [F53=F109=F149=F171; up to 1.5m wide and 0.55m deep] was filled by greyish-brown silty sand [52=109=148=172; 0.42m thick]; eight sherds of Anglian pottery were recovered from this deposit. This was overlain by greyish-brown clayey silt [145; 0.18m thick]. Immediately south of this was a second ditch [F55=F151; 2.37m wide and 0.54m deep]. This ditch was filled with orange-brown sandy silt [54=150]. To the south of this a short section of a third ditch [F153; 1.57m wide and up to 0.34m deep] was identified. This was filled by orange-brown sandy silt [152]. Due to the extremely dry conditions it was only possible to identify these ditches in plan for a very short period after the initial machine soil strip. A fourth ditch [at least 13.7m long, and 1.3m wide] parallel with these three was identified through the results of the geophysical survey results but not excavated.

*Gully (Figure 42.3)*

- A1.279 The terminal of an east-west aligned gully [F137; over 1.28m long, 0.78m wide and 0.3m deep] was identified at the southeast of the area. This was filled by brown sandy silt [136], and a single sherd of Anglian pottery was found within this deposit. Two circular post settings were identified within the gully [F138; F143; about 0.4m in diameter], comprising sub-angular and sub-rounded stones.

*Pits (Figures 42.1 and 42.4)*

- A1.280 A sub-oval pit [F85; 1.75m long, 1.07m wide and 0.18m deep] was filled by dark orange-brown sandy silt [84]. Eleven sherds of Anglian pottery were recovered from this deposit.
- A1.281 A pit [F115; 1.5m long, 0.8m wide and 0.1m deep] was filled by mottled dark brown sandy silt [114]. A large quantity of slag was recovered from this context, as well as a single sherd of Anglian pottery.

**Area C**

- A1.282 The Phase 4 paved surface north of the aisled building was re-used, with a thick deposit overlying it. Several fire pits and surfaces were located west and north of this.

*Paved area (Figure 42.2)*

- A1.283 The paving to the north of the aisled building was overlain by a layer of brown sandy silt [323=1331; up to 0.3m thick]. This material contained pottery, bone and ceramic building material, and included two sherds of Anglian pottery.

*Fire pits (Figure 42.2; Plate 5)*

- A1.284 Six sub-oval shaped 'fire pits' were identified [F256; F269; F346; F348; F350; also F1230 in Area D: see paragraph A1.287; up to 2m long, 1m wide, 0.45m deep]. Pits F256, F346, F348, and F350 were grouped to the northeast of the circular building, pit F269 was located to the east of the Phase 5d oven F319, and pit F1230 was located at the northwestern corner of the area. These were all filled with dark brownish-black sandy silts [257; 270; 345; 347; 349]. The fills contained large amounts of charcoal inclusions (up to 20%), and were capped with a layer of heat-affected cobbles and sandstone fragments.

- A1.285 Similar pits have been identified from early medieval sites and are interpreted as cooking pits (Powlesland 1999; Wilson *et al.* 1996). Radiocarbon dating of birch charcoal from a number of pit fills produced sub-Roman and early medieval dates. Context 270 was dated to cal AD 410-580 (95% confidence); context 345 to cal AD 420-610 (95% confidence); and context 257 to cal AD 530-650 (95% confidence). A fourth context was submitted for radiocarbon dating but produced a date of 5060-4840 cal BC (95% confidence), and it is therefore assumed that the material dated was residual.

*Surfaces (42.2)*

- A1.286 Partially overlying pit F346 but broadly contemporary with it and the other fire pits in this area [F256; F348, and F350] was a badly plough-damaged working surface [F344=343], spread over an area of about 55 square metres. This comprised small angular, sub-angular and sub-rounded sandstone fragments and was associated with the pits. The remains of several surfaces were identified, including two to the north of the aisled building. These included a spread of medium-sized sandstone fragments [289; 3m long and 2.5m wide] and several patches of tightly-packed small red sandstone fragments [288; 1.6m long and 0.6m wide]. These were above the pits F269, F448 and F450. Two patches of a surface similar to surface 288 were also identified on the west side of the *caldarium*.

**Area D (Figure 42.5)**

- A1.287 A sixth fire pit (F1230; 1.54m long, 0.96m wide and 0.33m deep) was located in Area D. It was also filled with dark brownish-black sandy silt [1231] and was truncated by an animal burrow along the southern edge.

**Area G**

- A1.288 A possible *Grubenhau*s was located at the southwest corner of the area, with a fire pit and a ditch towards the centre of the area.

*Possible Grubenhäuser (Figure 43.3)*

- A1.289 In the south-west extremity of the area a large, shallow rectangular feature was identified [F846; 4m long, 1.6m wide and 0.2m deep], cutting the Phase 3a ditch F844. The feature was filled by greyish-brown sandy silt [845]. The base of this rectangular feature was level and may have been a sunken-featured building. Four sherds of Saxon pottery were recovered from the fill. No associated postholes were identified and this feature may therefore be consistent with Type D Sunken Feature Buildings as classified by Stanley West (West 1985).

**Area H (Figure 43.1)**

- A1.290 The Phase 5 paved surface was re-used and covered by a deposit containing a large amount of pottery, including Anglian material. A series of intercutting pits were excavated to the east of the former paved surface.

*Possible Grubenhäuser*

- A1.291 To the south of F1417 was a hollow [F730; approximately 8m long, 5m wide and 0.22m deep], which cut 762. This was filled by light brown sandy silt [720=725]. A large quantity of pottery and iron artefacts were recovered from this context, including four sherds of Anglian pottery. In the south part of the feature a spread of stone flags was identified [F731]. The fill of the feature was cut by a posthole [F1485; 0.5m in diameter - not excavated]. This feature may be a *Grubenhäuser*, with the stone flags representing a post-pad.

*Layers*

- A1.292 Several silty sand layers were identified overlying the area of the Phase 5b stone paving. A layer of brownish-grey silty sand [668=671=751=1286; over 0.24m thick] was identified overlying the pits and gullies in the north part of the area; a large quantity of pottery was recovered from this layer, including Anglian material.

*Pits*

- A1.293 The Phase 3d pit F938 was cut by a deep circular pit or shaft [F777; 1.7m long, 1.6m wide and 1.45m deep]. The lower fill of the feature comprised a mixed silt-sand-gravel deposit [830]. This was overlain by dark brown organic sandy-clayey silt [826; up to 0.5m thick]. Well-preserved bone and pottery was recovered from this context, including two sherds of Anglian pottery. Above this was a black organic sandy-clayey silt [763; 1.1m thick]. Artefacts recovered from this deposit include an articulated dog skeleton, cattle, sheep / goat, pig and horse bones, pottery and a brooch. A sample of the dog skeleton was submitted for radiocarbon dating, producing a date range of cal AD 340-540 (95% confidence). The presence of Anglian pottery in the underlying deposit indicates that the date of the feature is either 5<sup>th</sup> or early 6<sup>th</sup> century. A large rectangular pit cut this fill [F940; 2.3m long, 1.7m wide and 0.52m deep]. This was filled with dark brown sandy silt [939]. This was cut by a slightly smaller and shallower pit [F1417; about 2m long, 1.2m wide and 0.37m deep], which was filled by dark brown silt [1416]. The area comprising the complex of four pits was

overlain by a light brown silty sand gravel layer [762; up to 0.3m deep], which contained six sherds of Anglian pottery.

### **Area I**

#### *Fire pit (Figure 43.3)*

- A1.294 An oval-shaped pit [F1467; about 2m, long, 1m wide and 0.4m deep] was filled by black sandy-clayey silt with fire-cracked stone and charcoal inclusions [1466]. This was similar in appearance to the cooking pits identified in Area C (see paragraph A1.284).

### **Phase 7: Medieval to modern (Figure 44)**

#### **Summary**

- A1.295 Plough furrows from later medieval and post-medieval farming practices were present across the site. This is confirmed in the results of the geophysical survey, which indicates that the furrows were placed along a northwest-southeast orientation. None of the furrows was archaeologically excavated.
- A1.296 As the land gently sloped away to the south the natural subsoil was overlain by a brown sandy silt subsoil horizon [35=58=292=332=351=360=461; up to 0.7m thick]. This was overlain by a topsoil horizon [1=492; up to 0.7m thick] which was present across the whole of the site.
- A1.297 A number of modern sheep burials were identified in the north and north-east parts of the site; these had truncated earlier features. Areas where sheep burials were identified were demarcated and left unexcavated.

### **Area C (Figure 45.1)**

#### *Sheep burial*

- A1.298 Pit [F1010/1009; 0.85m long, over 0.74m wide, and 0.22m deep] was located immediately to the north of the *caldarium*. It was heavily truncated by a modern sheep burial, [F407; 3.2m long, 1.2m wide and over 0.3m deep], making identification of any further archaeological deposits relating to the *caldarium* impossible. It is therefore possible that this pit was actually contemporary with the *caldarium*.

### **Area D (Figure 45.1)**

#### *Sheep burials; dog burial; pit; animal burrows*

- A1.299 Modern features identified cutting the topsoil within Area D included five sheep burials [F533; F574; F621; F653; F839], a dog burial [F532/531/530; 0.7m long, 0.5m wide and 0.09m deep], a rectangular pit [F507; 2m long, 0.5m wide and 0.3m deep] and animal burrowing [F1173; 1.2m long, 0.4m wide and 0.18m deep].

### **Area F (Figure 45.2)**

#### *Pit*

- A1.300 The north part of the outer enclosure ditch was truncated by a modern rectangular feature [F538; 3.1m long, 1.3m wide and over 0.5m deep]. The natural sand at the edges of the feature had been burnt [535; 536; 537]. The feature was backfilled by brown silt [534=577] from which modern nails and

pottery was recovered. The feature was not fully excavated and is likely to have been connected with recent agricultural activity on the site, such as the burning of dead livestock.

## Appendix 2: Context data

Summary list of contexts. The • symbols in the columns at the right indicate E environmental samples, and the presence of finds of the following types: C charcoal, R plant remains (abundant), P pottery, B bone, M metals, F flint, S slag, G glass and O other materials (e.g .clay pipe, stone, building materials).

No	Description	E	C	R	P	B	M	F	S	G	O
1	Topsoil				•		•	•	•	•	•
2	Upper fill of hollow F4	•			•	•		•	•		•
3	Lower fill of hollow F4	•			•	•	•	•		•	•
F4	Cut of hollow										
F5	Stone spread										
F6	Ditch cut										
F7	Ditch cut, same as F832										
8	Fill of ditch F6							•			
9	Fill of ditch F7							•			
10	Fill of ditch F88				•	•	•				•
11	Fill of ditch F12	•									•
F12	Ditch cut										
13	Fill of ditch F14	•	•			•					•
F14	Ditch cut										
15	Fill of F16										
F16	Cut of ditch										
17	Same as 8	•					•	•			
F18	Same as F6										
19	Fill of ditch F20	•									
F20	Ditch cut										
21	Fill of ditch F22	•			•						
F22	Ditch cut										
23	Fill of ditch F24	•									
F24	Ditch cut										
25	Same as 2				•	•					
F26	Same as F4										
27	Fill of F28	•									
F28	Ditch cut										
F29	Stone spread										
F30	Same as ditch cut F12										
31	Fill of F32: same as 11										
F32	Same as ditch cut F12										
33	Fill of F34: same as 11	•									
F34	Same as ditch cut F12										
35	Natural subsoil										
36	Natural										
F37	Fill of ditch F37: same as F14										
38	Same as ditch cut 13	•			•						
39	Cancelled										
F40	Stone spread										
41	Fill of ditch F42					•					
F42	Ditch cut										
43	Fill of ditch F42										
44	Fill of ditch F45										
F45	Ditch cut										
46	Fill of ditch F47										
F47	Ditch cut										
48	Fill of ditch F49	•						•			•
F49	Ditch cut										
50	Fill of ditch F51	•	•								



No	Description	E	C	R	P	B	M	F	S	G	O
F51	Ditch cut										
52	Fill of ditch F53				•						
F53	Ditch cut										
54	Fill of ditch F55	•									
F55	Cut of ditch										
56	Fill of ditch F57: same as 19	•									
F57	Same as ditch cut F20										
58	Same as 35										
59	Primary fill of ditch F60										
F60	Same as ditch cut F45										
61	Secondary fill of ditch F62	•									
F62	Ditch cut for villa enclosure ditch										
63	Fill of ditch F62	•			•	•		•			
64	Fill of pit F65	•			•						•
F65	Pit cut										
66	Secondary fill of ditch F60: same as 44	•									
67	Same as 41										
68	Same as 36										
69	Same as 36										
70	Fill of F113	•									
71	Fill of ditch F72: same as 48										
F72	Same as ditch cut F49										
73	Fill of ditch F62					•					
74	Fill of F62										
75	Fill of pit F65										
76	Primary fill of pit F65										
77	Primary fill of ditch F79					•		•			
78	Same as 50					•					
F79	Same as F51										
80	Fill of ditch F81: same as 19				•						
F81	Same as ditch cut F20										
82	Fill of ditch F83										
F83	Cut of ditch										
84	Fill of pit F85	•			•	•		•			
F85	Pit cut										
86	Same as 10				•	•	•	•			
87	Same as 41										
F88	Ditch cut										
89	Fill of ditch F90: same as 46	•									
F90	Same as ditch cut F47										
91	Fill of ditch F92: same as 43				•						
F92	Same as ditch cut F42										
93	Fill of ditch F94: same as 44										
F94	Same as ditch F45										
95	Fill of ditch F96: same as 82	•									
F96	Same as ditch cut F83										
97	Fill of ditch F98	•									
F98	Ditch cut										
99	Fill of ditch F100: same as 48	•									
F100	Same as ditch cut F49										
101	Fill of gully F102	•									
F102	Gully cut										
103	Fill of gully F104										
F104	Gully cut										
105	Fill of ditch F106: same as 11										
F106	Same as ditch cut F12										
F107	Same as ditch cut F62										

No	Description	E	C	R	P	B	M	F	S	G	O
108	Fill of ditch F107: same as 74	•									
F109	Ditch cut										
110	Fill of ditch F109	•									
111	Fill of ditch F112: same as 13	•	•								
F112	Same as ditch cut F14										
F113	Ditch cut										
114	Fill of pit F115				•				•		•
F115	Pit cut										
116	Primary fill of ditch F62	•									
117	Primary fill of ditch F62										
118	Same as 36										
119	Fill of ditch F107: same as 73	•			•						
120	Matrix around stone spread F40	•			•						
121	Secondary fill of F122: same as 15	•					•				
F122	Same as ditch cut F16										
123	Primary fill of F122	•									
F124	Same as ditch cut F16										
125	Fill of ditch F126: same as 13	•	•								
F126	Same as ditch cut F14										
127	Fill of ditch F49: same as 48	•			•						
F128	Same as ditch cut F49										
129	Fill of ditch F130: same as 19				•						
F130	Same as ditch cut F20										
131	Fill of ditch F132: same as 48				•						
F132	Same as ditch cut F49										
133	Fill of ditch F134: same as 82										
F134	Same as ditch cut F83										
135	Fill of pit F142	•									
136	Fill of gully F137	•			•	•					•
F137	Gully cut										
138	Stone packing in F137										
139	Secondary fill of F141: same as 15	•									
140	Primary fill of F141: same as 123										
F141	Same as ditch cut F16										
F142	Pit cut										
F143	Post-packing										
F144	Hollow cut										
145	Secondary fill of hollow F144	•			•	•					
146	Primary fill of hollow F144										
F147	Same as hollow cut F144										
148	Same as 110				•	•					
F149	Same as F109										
150	Fill of ditch F151							•			
F151	Ditch cut										
152	Fill of ditch F153							•			
F153	Ditch cut										
154	Fill of ditch F156: same as 19				•	•		•			
155	Fill of ditch F163: same as 82										
F156	Same as ditch cut F20										
157	Fill of ditch F158	•									
F158	Ditch cut										
159	Fill of gully F160										
F160	Gully cut										
161	Fill of gully F162										
F162	Gully cut										
F163	Same as ditch cut F83										
164	Fill of gully F165	•									

No	Description	E	C	R	P	B	M	F	S	G	O
F165	Gully cut										
166	Fill of ditch F167: same as 8	•									
F167	Same a ditch cut F6										
168	Fill of pit F169	•									
F169	Pit cut										
170	Fill of ditch F158										
F171	Same as F109										
172	Same as 110										
173	Fill of ditch F47: same as 46										
F174	Same as ditch cut F47										
175	Same as 43										
F176	Same as F42										
177	Fill of ditch F178: same as 44								•		
F178	Same as ditch cut F45										
F179	Stone spread										
180	Fill of ditch F181: same as 11										
F181	Same as ditch cut F12										
182	Cancelled										
183	Fill of gully F184	•									
F184	Gully cut										
185	Same as 41				•						
186	Same as F88	•									
F187	Final fill of ditch F60										
188	Cancelled	•									
F189	Cancelled										
190	Fill of ditch F191	•									
F191	Ditch cut										
192	Fill of ditch F193	•									
F193	Ditch cut										
F194	Same as F88										
195	Same as 10										
196	Fill of posthole F197										
F197	Posthole cut										
198	Fill of stakehole F199										
F199	Stakehole cut										
200	Fill of stakehole F201										
F201	Stakehole cut										
202	Fill of stakehole F203										
F203	Cut of stakehole										
204	Fill of stakehole F205										
F205	Stakehole cut										
206	Fill of stakehole F207										
F207	Stakehole cut										
208	Fill of posthole F209										
F209	Posthole cut										
210	Fill of F211					•					
F211	Cut of ditch										
212	Fill of ditch F213: same as 19										
F213	Same as ditch F20										
214	Natural										
215	Upper fill of pit F217	•		•							
216	Lower fill of pit F217	•	•	•							
F217	Pit cut										
F218	Stone wall										
F219	Stone feature cut										
220	Soil matrix within F219						•				•
221	Fill of posthole F222	•		•	•						

No	Description	E	C	R	P	B	M	F	S	G	O
F222	Cut of posthole										
223	Fill of pit F224				•	•	•	•			•
F224	Cut of pit										
225	Fill of ditch F113										
226	Fill of ditch F113										
227	Fill of ditch F113										
228	Fill of ditch F113										
229	Fill of ditch F113										
230	Fill of ditch F113										
F231	Same as ditch cut F62										
232	Fill of ditch F231	•	•		•	•					
233	Layer – sand silt	•			•	•	•		•	•	•
234	Backfill of construction cut F238										
235	Same as 236				•			•			
236	Layer – mixed soil + sandstone fragments				•	•	•	•			•
F237	Stone wall foundation within cut F238				•						
F238	Wall foundation cut										
239	Fill of ditch F240	•				•					
F240	Ditch cut										
F241	Stone wall				•					•	•
F242	Same as ditch cut F62										
243	Fill of ditch F242: same as 232	•									
244	Fill of ditch F242										
245	Fill of ditch F242										
246	Fill of ditch F242	•		•	•	•		•			
247	Fill of gully F248				•						
F248	Gully cut										
249	Fill of posthole F250										
250	Posthole cut										
251	Fill of ditch F252: same as 232				•			•			
F252	Same as ditch cut F62										
253	Fill of F252: same as 246				•						
254	Fill of gully F255					•					•
F255	Gully cut					•					
F256	Pit cut										
257	Fill of pit F256	•	•		•	•					
258	Fill of pit F259					•		•			
F259	Pit cut										
F260	Stone wall										
261	Layer - stone rubble	•			•						
262	Layer - stone rubble										
F263	Stone surface										
264	Backfill of F325				•	•					
F265	Same as ditch F62				•						
266	Fill of ditch F267				•	•					
F267	Ditch cut										
F268	Rectangular stone building wall footings						•			•	•
F269	Pit cut										
270	Fill of pit F269	•	•								•
271	Layer - mixed soil and rubble				•	•		•	•		•
272	Layer - silt sand				•	•			•		•
273	Layer - silt sand				•		•				
F274	Stone drain/flue										
F275	Posthole cut										
F276	Stone spread										

No	Description	E	C	R	P	B	M	F	S	G	O
F277	Stone spread										
F278	Pit cut										
F279	Pit cut										
F280	Pit cut										
F281	Posthole cut										
F282	Cancelled										
283	Fill of pit F284	•			•						
F284	Pit cut										
285	Fill of pit F279										
286	Layer – sand silt				•		•	•	•		
287	Layer – silt sand				•	•	•	•			•
288	Surface										
289	Surface										
F290	Stone cluster										
F291	Stone cluster										
292	Same as 35										
F293	Stone wall										
294	Rubble fill of F265: same as 232				•	•	•				
295	Fill of posthole F281										
F296	Stone wall										
F297	Stone wall										
F298	Stone slab										
F299	Stone spread										
F300	Stone spread										
F301	Rectangular stone building										
302	Floor										•
303	Floor base										•
304	Edge-set stone wall lining										
305	Layer – clay										•
306	Layer - rubble				•						
307	Soil matrix within wall base F296										
F308	Cut for wall foundation F296										
309	Hearth										
F310	Rectangular stone structure						•				
311	Fill of F310	•					•				•
312	Fill of F366				•	•	•				
313	Layer – clay: same as 305	•									
F314	Stone steps: same as F310										
F315	Culvert										
316	Fill of F315; F317	•	•								
F317	Culvert										
318	Fill of F319	•	•			•	•	•	•		•
F319	Oven										
320	Layer – clay							•			
F321	Paved stone surface										
F322	Stone spread										
323	Layer – clay sand				•	•			•		•
F324	Stone slab surface										
F325	Cut for stone slab surface										
326	Fill of pit F327				•						
F327	Pit cut										
328	Fill of gully					•					•
F329	Gully cut										
330	Fill of flue F366: same as 312	•	•	•	•	•	•			•	•
F331	Stone wall										
332	Same as 35										
333	Layer - clay	•			•	•		•			•

No	Description	E	C	R	P	B	M	F	S	G	O
334	Fill of pit F335						•				
F335	Pit cut										
336	Fill of oven F319										
337	Fill of oven F339; F342				•	•		•			
338	Fill of F339	•						•			•
F339	Stone oven flue										
F340	Oven construction cut										
341	Clay patches										
F342	Stoke pit cut										
343	Same as F344										
F344	Surface										
345	Fill of pit F346	•	•								•
F346	Pit cut										
347	Fill of pit F348	•									
F348	Pit cut										
349	Fill of pit F350	•									
F350	Pit cut										
351	Same as 35										
352	Layer – sand silt: same as 287				•		•				
353	Fill of stakehole F354										
F354	Stakehole cut										
355	Fill of stakehole F356										
F356	Stakehole cut										
357	Fill of stakehole F358	•									
F358	Stakehole cut										
359	Clay packing of oven F319										
360	Same as 35							•			
361	Layer – sand silt	•			•		•				
362	Fill of F310										
363	Fill of F310										
364	Fill of F310										
365	Clay base of F310							•			
F366	Cut of pit at base of F310										
F367	Construction cut of oven flue F319										
F368	Construction cut of F274										
369	Backfill of F368				•	•	•	•			
370	Fill of stone drain F274	•				•					•
371	Fill of 368										
372	Same as 311				•						
373	Fill of flue F276										
F374	Stoke pit of F276										
375	Fill of flue F276	•	•			•		•			•
376	Fill of flue F276: same as 375										
F377	Cut for oven flue F276: same as F374										
378	Upper fill of flue F301	•									•
379	Lower fill of flue F301	•		•	•						•
380	Layer – sand silt										
381	Layer – sand silt: same as 380										
382	Layer – sand silt: same as 380										
383	Primary fill of flue F301				•						
384	Clay lining of flue F301							•			
385	Fill of posthole F275										
386	Layer – mixed demolition rubble					•					•
F387	Rubble foundation filling F456										
388	Fill of F319; F389										
F389	Stoke pit cut										

No	Description	E	C	R	P	B	M	F	S	G	O
390	Fill of gully F391				•						
F391	Gully cut										
392	Fill of gully F393	•									
F393	Gully cut										
394	Fill of pit F395	•	•								
F395	Pit cut										
396	Layer – sand clay										
397	Fill of ditch F398				•						
F398	Ditch cut										
399	Upper fill of F401	•									
400	Lower fill of F401				•						
F401	Pit cut										
402	Fill of pit F403	•									
F403	Pit cut										
404	Fill of gully F405										
F405	Gully cut										
F406	Slot cut										
F407	Modern sheep burial										
F408	Foundation cut				•						
F409	Stone wall										•
410	Fill of F408										•
411	Fill of F408										
412	Fill of F408										
413	Fill of pit F414							•			•
F414	Pit cut										
415	Fill of pit F416	•		•							
F416	Pit cut										
417	Fill of pit F418	•		•	•						
F418	Pit cut										
419	Fill of F420	•			•	•					•
F420	Oven										
421	Fill of posthole F422										
F422	Posthole cut										
423	Fill of posthole F424										
F424	Posthole cut										
425	Fill of posthole F426										
F426	Posthole cut										
427	Rubble foundation filling F456: same as 387										
428	Fill of pit F278					•					
429	Fill of posthole F430				•	•		•			
F430	Posthole cut										
431	Fill of posthole F432				•						
F432	Posthole cut										
433	Fill of posthole F434										
F434	Posthole cut										
435	Fill of posthole F436										
F436	Posthole cut										
437	Fill of posthole F438				•						
F438	Posthole cut										
439	Cancelled										
440	Cancelled										
441	Fill of F451										
F442	Possible hearth base										
443	Layer - clay										
444	Fill of F340	•									
445	Fill of pit F446										

No	Description	E	C	R	P	B	M	F	S	G	O
F446	Same as pit cut F280										
447	Fill of pit F448	•	•					•			
F448	Pit cut										
449	Fill of pit F450										
F450	Pit cut										
F451	Pit cut										
452	Fill of flue construction cut F377										
453	Fill of F276										
454	North stone wall of building F268				•						•
455	Stone wall										
F456	Cut of pit										
457	Fill of gully F458	•									
F458	Gully cut										
459	Same as 404				•						
F460	Same as F405										
461	Same as 35										
F462	North facing wall of F274										
F463	South facing wall of F274										
464	Fill of F274										
465	Fill of F274										
466	Fill of oven F420	•	•		•	•					•
F467	Foundation of west wall of Building F268				•			•			
F468	Foundation cut of 467										
469	Red sandstone floor of F301										
F470	Ditch cut										
471	Final fill of ditch F470				•						
472	Fill of ditch F470				•						
F473	Ditch cut										
474	Fill of ditch F473										
475	Fill of posthole F476										
F476	Posthole cut										
477	Fill of pit F478					•					
F478	Pit cut										
479	Fill of ditch F483										
480	Fill of ditch F483							•			
481	Fill of ditch F483										
482	Fill of ditch F483										
F483	Ditch cut										
484	Secondary fill of ditch F470										
485	Primary fill of ditch F470										
F486	Ditch cut										
487	Secondary fill of ditch F486										
488	Primary fill of ditch F486										
F489	Stone and clay oven flue										
490	Fill of flue F339 at mouth of stoke pit	•	•	•							•
491	Fill of posthole F950						•				
492	Topsoil		•		•	•	•	•	•	•	•
493	Fill of flue F489: same as 490	•			•						
494	Fill of flue F489	•			•	•	•				
F495	Oven construction cut: same as F342										
496	Fill of flue F489										
497	Fill of posthole F498									•	
F498	Posthole cut										
499	Fill of pit F500										
F500	Pit cut										
501	Fill of posthole F502										



No	Description	E	C	R	P	B	M	F	S	G	O
F502	Posthole cut										
503	Fill of posthole F504										
F504	Posthole cut										
F505	Pit cut										
506	Fill of pit F505	•		•							
F507	Modern pit										
508	Fill of pit F478										
509	Fill of ditch F483										
510	Fill of ditch F483										
511	Fill of pit F512					•		•			
F512	Pit cut										
513	Fill of flue in F301/F310: same as 362										
514	Fill of flue in F301/F310				•						
515	Fill of flue in F301/F310	•									•
516	Fill of flue in F301/F310	•		•		•				•	•
F517	Stone flooring of flue within F301										
F518	Stone wall										
F519	Stone wall										
F520	Stone flooring of flue between F301/F310										
521	Fill of pit F522							•			
522	Pit cut										
F523	Posthole										
F524	Posthole										
F525	Posthole										
526	Same as 693										
F527	Same as F692										
528	Fill of gully F529										
F529	Gully cut										
530	Fill of dog burial F532				•		•			•	•
531	Modern dog skeleton										
F532	Cut of dog burial										
F533	Modern sheep burial				•					•	
534	Fill of F538						•				
535	Fill of F538										
536	Fill of F538										
537	Fill of F538										
F538	Modern rectangular burnt structure										
539	Fill of gully F540										
F540	Gully cut										
F541	Grave cut										
542	Grave fill	•				•					
F543	Pit cut						•				
544	Fill of pit F543	•									
F545	Stone wall										
F546	Pit cut										
547	Fill of F546										
F548	Pit cut										
549	Fill of pit F548										
F550	Pit cut										
551	Fill of pit F550										
552	Fill of gully F553	•									
F553	Gully cut										
554	Fill of gully F555	•									
F555	Gully cut										
556	Fill of gully F557										
F557	Gully cut										

No	Description	E	C	R	P	B	M	F	S	G	O
558	Fill of gully F559: same as 554										
F559	Same as gully cut F555										
560	Fill of gully F561										
F561	Gully cut										
562	Same as 699						•				
F563	Same as F698										
F564	Gully cut										
565	Fill of gully F564										
F566	Construction cut				•			•			•
F567	Clay surface										
568	Fill of pit F569										
F569	Pit cut										
570	Fill of pit F571				•	•					
F571	Pit cut										
572	Fill of posthole F573										
F573	Posthole cut										
F574	Modern sheep burial										
575	Cancelled										
576	West wall of F268										
577	Fill of F538						•				
F578	Human skeleton 1										
579	Fill of ditch F580: same as 232				•	•					
F580	Same as ditch cut F62										
581	Fill of posthole F582										
F582	Posthole cut										
F583	East wall of F268: same as F411										
584	Fill of pit F585										•
F585	Pit cut										
586	Fill of grave F587	•			•						
F587	Grave cut										
588	Fill of grave F589	•			•						
F589	Grave cut										
590	Fill of construction cut F591										
F591	Construction cut for oven F420										
592	Fill of ditch F593: same as 232						•				
F593	Same as ditch cut F62										
594	Fill of pit F595										
F595	Pit cut										
596	Layer – lime mortar										
597	Layer – sandstone blocks										
598	Layer – demolition rubble										
599	Layer – demolition rubble										•
600	Layer – demolition rubble				•						
F601	Surface										
602	Layer – demolition rubble										
603	Layer – demolition rubble										•
604	Layer – demolition rubble										
605	Layer – demolition rubble					•					•
F606	Flagged surface				•				•	•	
607	Layer - sand silt clay										
F608	Surface										
609	Layer – sandstone blocks										
610	Layer – demolition rubble										
F611	Surface										
F612	Stone wall										
613	Layer – demolition rubble										
614	Layer – sand silt clay										

No	Description	E	C	R	P	B	M	F	S	G	O
615	Layer – sand silt clay										
616	Hearth	•									
617	Hearth										
F618	Stone wall										
619	Layer – demolition rubble										
620	Layer – sand silt clay	•									
F621	Modern sheep burial										
622	Layer – sand silt clay										
623	Fill of F624	•									
F624	Posthole cut										
F625	Surface										
F626	Surface										
627	Stone wall: same as F612										
F628	Surface										
F629	Stone wall: same as F612										
F630	Stone wall?										
631	Layer – demolition rubble										
632	Layer – sand silt clay										
F633	Stone wall										
634	Stone packing fill of posthole F1045										
F635	Posthole										
F636	Posthole										
F637	Posthole										
638	Layer – demolition rubble										
F639	Flagged surface										
F640	Posthole										
641	Fill of ditch F1199	•		•	•	•	•				•
642	Fill of ditch F1199										
643	Layer – demolition rubble										
644	Layer – sandstone blocks										
645	Layer – sand silt clay										
646	Fill of ditch F1011										
647	Layer – sand silt clay										
F648	Flagged surface										
649	Layer – demolition rubble										
650	Layer – demolition rubble										
651	Layer – clay										
652	Layer – clay										
F653	Modern sheep burial										
654	Layer – demolition rubble										
655	Layer – demolition rubble										
656	Stone wall										
657	Layer – clay										
658	Fill of F566										
659	Clay bonding of F656	•									
660	Layer – silt clay loam					•	•	•	•		•
661	Layer – clay silt				•			•			
F662	Same as gully cut F555										
F663	Same as gully cut F555										
F664	Oven										
F665	Oven flue						•				
666	Cancelled										
667	Cancelled										
668	Layer – silt sand				•	•	•	•			•
669	Fill of gully F670				•						
F670	Gully cut										
671	Layer – silt sand				•	•			•		

No	Description	E	C	R	P	B	M	F	S	G	O
672	Fill of F566	•		•	•						
673	Fill of pit F674				•						
F674	Pit cut										
675	Same as 669				•						
F676	Same as F670										
F677	Construction cut: same as F219										
678	Fill of F677: same as 220				•				•		
F679	Gully cut										
680	Fill of gully F679	•									
F681	Pit cut										
682	Fill of pit F681	•									
683	Fill of pit F681				•	•		•			
684	Fill of pit F681										
F685	Pit cut										
686	Fill of pit F685	•									
687	Fill of pit F685										
F688	Same as ditch cut F486										
689	Fill of ditch F688: same as 487							•			
F690	Same as gully cut F529										
691	Fill of gully F690: same as 528				•						
F692	Same as gully cut F527										
693	Fill of gully F692: same as 526										
F694	Gully cut										
695	Fill of gully F694				•		•				
F696	Posthole cut										
697	Fill of posthole F696										
F698	Pit cut										
699	Fill of pit F698										
700	Fill of pit F698										
701	Cancelled										
702	Cancelled										
703	Layer – sand silt clay				•	•					
F704	Posthole cut										
705	Fill of posthole F704										
F706	Pit cut										
707	Fill of pit F706				•						
708	Hearth		•								•
F709	Ditch cut										
710	Fill of ditch F709										
711	Fill of gully F712: same as 669				•	•					
F712	Same as gully cut F670										
713	Fill of gully F714				•				•		
F714	Gully cut										
715	Stone wall: same as F618										
716	Cancelled										
717	Layer – clay silt	•			•						
F718	Ditch cut										
719	Layer – silt loam				•	•	•	•	•		
720	Fill of F730				•	•	•	•	•		•
721	BA vessel (south) within F724				•						
722	BA vessel (north) within F724				•						
723	Fill of pit F724	•			•		•	•			•
F724	Pit cut										
725	Same as 720				•	•			•		
726	Fill of F727							•			
F727	Posthole cut										
728	Fill of gully F729										

No	Description	E	C	R	P	B	M	F	S	G	O
F729	Gully cut										
F730	Shallow cut										
F731	Stones within F730										
732	Fill of ditch cut F718				•		•				
733	Fill of ditch cut F718: same as F732										
734	Fill of ditch F265: same as 246										
F735	Posthole cut										
736	Fill of posthole F735					•					
F737	Posthole cut										
738	Fill of posthole F737										
F739	Posthole cut										
740	Fill of posthole F739										•
741	Fill of pit F742										
F742	Pit cut										
743	Foundation of wall F744										
F744	Stone wall: same as F218										
745	Fill of pit F746				•						
F746	Pit cut										
747	Fill of gully F748				•	•	•	•			
F748	Gully cut										
F749	Stone spread										
750	Layer – silt	•			•						
751	Layer – silt				•		•	•		•	
752	Fill of pit F753				•		•	•			
F753	Pit cut										
754	Fill of stone lined drain F756	•						•			
755	Fill of drain construction cut F758										
F756	Stone lined drain										
F757	Stone rubble drain										
F758	Drain construction cut										
759	Fill of F760					•					
F760	Pit cut										
F761	Flue within F566										
762	Layer – silt sand gravel	•			•	•		•	•		
763	Fill of pit F777	•	•		•	•	•		•		
764	Fill of ditch F765										
F765	Ditch cut										
766	Fill of ditch F767				•						
F767	Ditch cut										
768	Fill of ditch F769	•			•						
F769	Ditch cut										
770	Fill of ditch F771	•									
F771	Ditch cut										
772	Fill of ditch F773	•									
F773	Ditch cut										
774	Fill of ditch F775	•				•					
F775	Ditch cut										
776	Fill of ditch F769										
F777	Pit cut										
778	Pit cut										
779	Fill of pit F778										
780	Fill of pit F778				•	•					
F781	Construction cut of oven										
782	Fill of F781				•						
783	Oven lining	•									
784	Fill of F781										
785	Fill of pit F786										

No	Description	E	C	R	P	B	M	F	S	G	O
F786	Pit cut										
787	Fill of pit F788										•
F788	Pit cut										
789	Fill of gully F789: same as 392	•									
F790	Same as gully cut F393										
791	Fill of gully F792: same as 390										
F792	Same as gully cut F391										
793	Fill of gully F794: same as 554	•									
F794	Same as gully cut F555										
795	Fill of pit F796	•									
F796	Pit cut										
797	Fill of gully F798										•
F798	Gully cut										
799	Fill of posthole F800										
F800	Posthole cut										
F801	Construction cut										
F802	Stones within F801										
803	Fill of F801				•						
804	Fill of oven F781										
805	Fill of oven F781	•			•		•				
806	Fill of pit F778				•	•		•			
807	Fill of ditch F809	•				•					
808	Stone slab										
F809	Ditch cut										
810	Fill of ditch F811										
F811	Ditch cut										
812	Fill of gully F813										
F813	Gully cut										
F814	T-shaped flue										
F815	Cut for F814										
816	Fill of pit F817										
F817	Pit cut										
818	Fill of posthole pit F819					•					
F819	Pit cut										
F820	Posthole cut										
821	Fill of F325										
F822	Posthole cut				•						
823	Fill of posthole F822										
824	Fill of pit F778										
825	Fill of soak-away F828				•			•			
826	Fill of pit F777	•			•	•			•		•
827	Fill of oven F781										
F828	Soak-away cut										
829	Fill of F801=F891	•			•	•	•		•		
830	Fill of pit F777										
831	Fill of ditch F832: same as 9					•					
F832	Same as ditch cut F7										
F833	Pit cut										
834	Fill of pit F833	•			•						
F835	Cut of posthole										
836	Fill of posthole F835	•									
837	Fill of posthole F820										
838	Fill of ditch F1011=F1053										
F839	Modern sheep burial										
840	Fill of oven F664	•		•	•	•		•	•		
841	Fill of pit F842	•			•				•		
842	Pit cut										

No	Description	E	C	R	P	B	M	F	S	G	O
843	Fill of gully F844										
F844	Gully cut										
845	Fill of F846	•			•	•		•			
F846	Rectangular pit cut										
F847	Posthole cut										
848	Fill of posthole F847										
F849	Posthole cut										
850	Fill of posthole F849	•									
F851	Posthole cut										
852	Fill of posthole F851										
F853	Posthole cut										
854	Fill of posthole F853	•									
F855	Slot cut										
856	Fill of slot F855	•									•
F857	Pit cut										
858	Fill of pit F857	•			•		•				
859	Fill of pit F857										
F860	Posthole cut										
861	Fill of posthole F860	•									
F862	Pit cut										
863	Fill of pit F862	•									
F864	Same as posthole cut F624										
865	Secondary fill of posthole F864: same as 623	•			•						
866	Primary fill of posthole F864										
F867	Pit cut										
868	Fill of pit F867	•									
869	Fill of pit F867										
F870	Posthole cut										
871	Fill of posthole F870	•		•							
F872	Pit cut										
873	Fill of pit F872	•		•	•						
F874	Pit cut										
875	Fill of re-cut F876										
F876	Re-cut of soak-away F828										
877	Fill of posthole F878						•				
F878	Posthole cut										
F879	Stone spread: same as F749										•
880	Fill of flue F815										
F881	Pit cut				•						
882	Fill of pit F881				•	•	•			•	
883	Fill of gully F884										
F884	Gully cut										
885	Fill of gully F886	•									
F886	Gully cut										
887	Fill of gully F888: same as 669				•				•		
F888	Same as gully cut F670										
889	Fill of F890				•	•					
F890	Gully cut										
F891	Cut of oven: same as F801										
892	Fill of oven: same as 803				•	•			•		
893	Fill of pit F891										
894	Fill of pit F891: same as 893				•	•		•			•
895	Fill of pit F891						•				
896	Upper fill of hypocaust										
897	Lower fill of hypocaust										
898	Fill of gully F1002	•			•			•			

No	Description	E	C	R	P	B	M	F	S	G	O
F899	Pit cut										
900	Fill of pit F899										
901	Fill of posthole F902										
F902	Posthole cut										
903	Fill of ditch F904										
F904	Ditch cut										
905	Fill of oven F664				•	•					•
906	Fill of oven F664	•		•							
F907	Oven construction cut										
908	Fill of ditch F910										
909	Fill of gully F910: same as 669										
F910	Same as gully cut F670										
911	Fill of Pit F914					•					
912	Fill of pit F915	•		•							
913	Fill of pit F915					•					
F914	Pit cut										
F915	Pit cut										
916	Fill of posthole F917										
F917	Posthole cut										
918	Rubble layer: same as 261										
919	Fill of ditch F922: same as 509							•			
920	Secondary fill of ditch F922										
921	Primary fill of ditch F922										
F922	Same as ditch cut F483										
923	Fill of pit F874					•					
924	Fill of pit F874	•		•							
925	Fill of pit F874										
926	Fill of pit F874										
927	Fill of pit F872	•		•	•	•					
928	Fill of pit F872										
F929	Pit cut										
930	Fill of pit F929										
F931	Posthole cut										
932	Fill of posthole F931										
F933	Posthole cut										
934	Fill of posthole F933										
935	Fill of posthole F936										
F936	Posthole cut										
937	Fill of pit F938	•				•					
F938	Pit cut										
939	Fill of pit F940					•			•		
F940	Pit cut										
F941	Posthole cut										
942	Fill of posthole F941										
943	Fill of posthole F944										
F944	Posthole cut										
945	Fill of posthole F946										
F946	Posthole cut										
947	Fill of Hypocaust										•
948	Fill of pit F949										
F949	Pit cut										
F950	Posthole cut										
951	Fill of posthole F950: same as 491	•									
F952	Post pit cut										
953	Fill of post pit F952	•			•						
954	Fill of posthole F956 and gully F957										
955	Fill of posthole F956										



No	Description	E	C	R	P	B	M	F	S	G	O
F956	Posthole cut										
F957	Gully cut										
F958	Posthole cut										
959	Fill of posthole F958	•									
F960	Posthole cut										
961	Fill of posthole F960										
F962	Posthole cut										
963	Fill of posthole F962	•									
964	Fill of F891=F801	•		•			•		•		•
965	Fill of pit F966										
966	Pit cut										
967	Fill of pit F968	•			•						
F968	Pit cut										
969	Fill of posthole F970										
F970	Posthole cut										
971	Fill of ditch F972: same as 232					•					
F972	Same as ditch cut F62										
973	Fill of ditch F974: same as 266										
F974	Same as ditch cut F267										
F975	Kiln/oven										
F976	Layer – sand silt				•						
977	Fill of hollow F978				•						•
F978	Hollow cut										
979	Fill of gully F980	•									
F980	Gully cut										
981	Fill of hypocaust				•					•	•
F982	Same as ditch cut F45	•									
F983	Oven cut	•		•							•
984	Fill of F802										
985	Fill of F802										
986	Fill of pit F987										
F987	Pit cut										
988	Fill of pit F989										
F989	Pit cut										
990	Fill of gully F991										
F991	Gully fill										
992	Fill of pit F995										
993	Fill of pit F995										
994	Fill of pit F995	•		•	•		•				•
F995	Pit cut										
996	Fill of posthole F997										
F997	Posthole cut										
998	Fill of ditch F999	•						•			
F999	Ditch cut										
1000	Fill of pit/hearth F1001	•									
F1001	Pit/hearth cut										
F1002	Gully cut										
F1003	Posthole cut										
1004	Fill of posthole F1003										
F1005	Posthole cut										
1006	Fill of posthole F1005										
1007	Fill of pit F1008				•	•	•		•		•
F1008	Pit cut										
1009	Fill of pit F1010										
F1010	Pit cut										
F1011	Ditch cut										
1012	Secondary fill of ditch F1011										

No	Description	E	C	R	P	B	M	F	S	G	O
1013	Primary fill of ditch F1011										
1014	Fill of pit F995										
1015	Same as 993										
1016	Layer – clay silt				•	•	•	•	•	•	•
F1017	Hypocaust										
1018	Fill of posthole F1019				•						
F1019	Posthole cut										
1020	Fill of posthole F1021										
F1021	Posthole cut										
F1022	Pit cut										
1023	Fill of pit F1022	•									
F1024	Pit cut										
1025	Fill of posthole F1024	•									•
F1026	Posthole cut										
1027	Fill of posthole F1026										
F1028	Posthole cut										
1029	Fill of posthole F1028										
1030	Fill of pit F1058	•			•	•		•			
1031	Fill of pit F1058										
1032	Fill of posthole F1033										
F1033	Posthole cut										
1034	Fill of posthole F1036										
1035	Stone packing in F1036										
F1036	Posthole cut										
1037	Fill of posthole F1039										
1038	Stone packing in F1039										
F1039	Posthole cut										
1040	Fill of posthole F1042										
1041	Stone packing in F1042										
F042	Posthole cut										
1043	Secondary fill of posthole F1045										
1044	Stone packing fill of posthole F1045: same as 634										
F045	Posthole cut										
1046	Fill of pit F1254				•	•					•
1047	Fill of construction cut F1049					•					
F1048	Stone wall: same as F277										
F1049	Construction cut for wall F1048										
1050	Fill of pit F1082						•				
F1051	<i>Pilae</i> bases within hypocaust										
1052	Deposit below <i>pilae</i> bases										
F1053	Same as ditch cut F1011										
1054	Fill of ditch 1053: same as 1013	•									
F1055	Pit cut										
1056	Fill of pit F1055					•					
1057	Fill of pit F1058					•					
F1058	Pit cut										
F1059	Foundation cut for F310										
1060	Backfill of F301										
1061	Fill of pit F1062										
F1062	Pit cut										
F1063	Ditch cut: same as F62										
1064	Fill of construction slot										
F1065	Construction slot cut										
1066	Clay fill around flue stones										
1067	Clay fill around flue stones										
1068	Grave fill				•						

No	Description	E	C	R	P	B	M	F	S	G	O
F1069	Stone wall										
F1070	Flue in F566										
1071	Fill of posthole F1072										
F1072	Posthole cut				•						
1073	Fill of posthole F1074										
F1074	Posthole cut										
1075	Fill of pit F1253					•			•		
F1076	Wall of T-flue F814										
F1077	Wall of T-flue F814										
F1078	Wall of T-flue F814										
1079	Fill of pit F1080				•						
F1080	Pit cut										
1081	Layer – gravelly sand										
F1082	Pit cut					•					
1083	Fill of pit F1084				•	•	•				
F1084	Pit cut				•						
1085	Fill of gully F1086				•						
F1086	Gully cut										
1087	Fill of gully F1088										
F1088	Gully cut										
F1089	Pit cut				•						
1090	Fill of pit F1089				•	•	•	•			
1091	Fill of pit F1089										
1092	Fill of pit F1089					•	•				•
F1093	Pit cut										
1094	Fill of pit F1093	•			•	•		•			
1095	Fill of pit F1093										
F1096	Pit cut										
1097	Fill of pit F1096										
F1098	Pit cut										
1099	Fill of pit F1098	•									
1100	Fill of pit F1101				•	•	•	•	•		
F1101	Pit cut										
1102	Fill of pit F1103										
F1103	Pit cut										
1104	Fill of F566										
1105	Layer/surface – sandy clay										
1106	Fill of flue F761										
1107	Fill of flue F761				•		•			•	•
1108	Fill of flue F761	•		•	•						•
1109	Fill of flue F761	•		•							
1110	Fill of flue F761										
1111	Cancelled										
1112	Cancelled										
F1113	Posthole cut										
1114	Cancelled										
F1115	Posthole cut										
1116	Cancelled										
F1117	Posthole cut										
1118	Fill of pit										
F1119	Pit cut										
1120	Fill of ditch F1121: same as 21							•			
F1121	Same as ditch cut F22										
F1122	Posthole cut										
1123	Fill of posthole F1122										
1124	Fill of ditch F1125: same as 774										
F1125	Same as ditch cut F775										

No	Description	E	C	R	P	B	M	F	S	G	O
1126	Fill of ditch F1127: same as 774										
F1127	Same as ditch cut F775										
1128	Fill of ditch F1129										
F1129	Ditch cut										
1130	Fill of gully F1131				•						
F1131	Gully cut										
1132	Fill of gully F1133										
F1133	Gully cut										
1134	Fill of gully F1135										
F1135	Gully cut										
1136	Post hole setting										
1137	Fill of ditch F1138: same as 8					•					
F1138	Same as ditch cut F6										
1139	Fill of ditch F1140: same as 9										
F1140	Same as ditch cut F7										
1141	Same as 214										
1142	Fill of ditch F1143: same as 9										
F1143	Same as ditch cut F7										
1144	Fill of gully F1145										
F1145	Gully cut										
1146	Fill of pit F1147					•					
F1147	Pit cut										
1148	Pit of pit F1149										
F1149	Pit cut										
1150	Fill of posthole										
F1151	Cut of posthole										
1152	Fill of ditch F1153										
F1153	Ditch cut										
1154	Fill of gully F1155				•						
F1155	Gully cut										
1156	Fill of gully F1157				•						
F1157	Gully cut										
1158	Cancelled										
F1159	Cancelled										
F1160	Pit cut										
1161	Fill of pit F1160				•	•					
1162	Fill of ditch F1163: same as 8							•			
F1163	Same as ditch cut F6										
1164	Fill of pit F1165							•			
F1165	Pit cut										
1166	Fill of pit F1167										
F1167	Pit cut										
1168	Fill of pit F1169						•				
F1169	Pit cut										
1170	Fill of gully F1172										
1171	Cancelled										
F1172	Gully cut										
F1173	Animal burrow										
1174	Fill of posthole F1175										
F1175	Posthole cut										
1176	Fill of posthole F1177										
F1177	Posthole cut										
1178	Fill of posthole F1179										
F1179	Posthole cut										
1180	Fill of posthole F1181										
F1181	Posthole cut										
1182	Fill of posthole F1183										

No	Description	E	C	R	P	B	M	F	S	G	O
F1183	Posthole cut										
F1184	Post alignment										
1185	Cancelled										
1186	Cancelled										
1187	Cancelled										
1188	Cancelled										
1189	Cancelled										
1190	Fill of oven flue F1248						•				
1191	Fill of posthole F1192										
F1192	Posthole cut										
1193	Fill of ditch F11194										
F1194	Ditch cut										
1195	Fill of oven F975				•						
1196	Fill of oven F975										
1197	Fill of pit F1198										
F1198	Pit cut										
F1199	Ditch cut										
1200	Fill of ditch F1199				•						
1201	Fill of ditch F1199				•	•					
1202	Fill of ditch F1199						•				
1203	Fill of ditch F1199										
F1204	Ditch cut										
1205	Fill of ditch F1204										
F1206	Pit cut										
1207	Fill of pit F1206										
1208	Fill of pit F1206										
F1209	Posthole cut										
1210	Fill of posthole F1209										
F1211	Cut of oven										
F1212	Stones in F1211										
1213	Fill of F1211										
1214	Fill of F1211										
1215	Layer: same as 651										
1216	Fill of gully										
F1217	Gully cut										
1218	Fill of pit F1219				•		•				
F1219	Pit cut										
1220	Fill of pit F1221				•						•
F1221	Pit cut										
1222	Posthole setting										
1223	Fill of gully F1224: same as 1154	•									
F1224	Same as gully cut F1155										
1225	Fill of gully F1226										
F1226	Gully cut										
1227	Fill of pit F1228				•						•
F1228	Pit cut										
1229	Fill of pit F1101	•									
F1230	Pit cut										
1231	Fill of pit F1230										
1232	Fill of pit F1233				•						
F1233	Pit cut										
1234	Fill of posthole F1235					•					
F1235	Posthole cut										
1236	Fill of pit F1237	•			•						
F1237	Pit cut										
1238	Fill of gully F1239: same as 1132				•						
F1239	Same as gully cut F1133										

No	Description	E	C	R	P	B	M	F	S	G	O
1240	Fill of gully										
F1241	Gully cut										
1242	Layer – sand silt: same as 976				•	•	•	•			•
1243	Fill of pit F1244							•			
F1244	Pit cut										
1245	Fill of gully F12246: same as 1130						•				
F1246	Same as gully cut F1131										
F1247	Ditch cut										
1248	Fill of ditch F1247				•						
1249	Fill of posthole F1250										
F1250	Posthole cut										
1251	Fill of posthole F1252										
F1252	Posthole cut										
F1253	Pit cut										
F1254	Pit cut										
1255	Fill of ditch F982: same as 44										
1256	Fill of F983										
F1257	Wall of flue F761										
F1258	Wall of flue F761										
F1259	Wall of flue F761										
F1260	Wall of flue F761										
F1261	Pit cut										
1262	Fill of pit F1263										
F1263	Pit cut										
1264	Fill of pit F1265										
F1265	Pit cut										
1266	Wall foundation					•					
1267	Same as 1104										
F1268	Stone flue of oven F975										
1269	Same as 990				•						
1270	Same as F991										
1271	Fill of stoke pit and flue F975										
1272	Clay bonding of wall F1257										
1273	Fill of ditch F1063										
F1274	Cist										
F1275	Stone cist capping										
1276	Fill of ditch F1277							•	•		
F1277	Ditch fill										
1278	Fill of pit F1279				•		•				•
F1279	Pit cut										
1280	Fill of pit F1281										
F1281	Pit cut										
1282	Fill of posthole F1283										
F1283	Posthole cut										
1284	Fill of gully F1285				•	•		•			
F1285	Gully cut										
1286	Layer – silt sand				•	•					
1287	Fill of gully F1288										
F1288	Gully cut										
1289	Fill of gully F1290						•				
F1290	Gully cut										
F1291	Post-pad										
F1292	Pit cut										
F1293	Ditch cut										
1294	Fill of ditch F1293				•						
F1295	Ditch cut										
1296	Fill of ditch F1295				•						

No	Description	E	C	R	P	B	M	F	S	G	O
1297	Fill of ditch F1295										
1298	Fill of ditch F1295				•						
F1299	Ditch cut										
1300	Fill of ditch F1299				•			•			
1301	Fill of ditch F1299										
1302	Fill of ditch F1299										
1303	Fill of gully F1304										
F1304	Gully cut										
1305	Fill of gully F1306										
F1306	Gully cut										
1307	Fill of gully F1308										
F1308	Gully cut										
1309	Fill of posthole F1310										
F1310	Posthole cut										
F1311	Oven flue										
1312	Fill of oven flue F1311										
1313	Fill of oven flue F1311										•
1314	Fill of ditch F1315: same as 766				•		•				•
F1315	Same as ditch cut F767										
F1316	Ditch cut							•			
1317	Fill of ditch F1316				•	•					
1318	Fill of oven flue F1311	•							•		
1319	Fill of posthole F1320										
F1320	Posthole cut										
1321	Fill of pit F1322										
F1322	Pit cut										
1323	Fill of posthole F1324				•	•					
F1324	Posthole cut										
1325	Fill of posthole F1326										
F1326	Posthole cut										
1327	Backfill of east wall F310										
1328	Backfill of west wall F310										
1329	Fill of stoke pit F1330: same as 1311					•					
F1330	Cut of stoke pit										
1331	Same as 323				•						•
F1332	Cut of ditch										
1333	Fill of ditch F1332										
1334	Fill of ditch F1332										
F1335	Cut of ditch										
1336	Fill of ditch F1335										
1337	Fill of pit F1338				•						•
F1338	Cut of pit										
1339	Fill of F1340					•					
F1340	Oven										
1341	Fill of F1342				•						
F1342	Oven construction cut										
1343	Fill of posthole F11344				•						
F1344	Cut of posthole										
1345	Fill of gully F1346				•						
F1346	Cut of gully										
1347	Fill of ditch F1348: same as 1317										
F1348	Same as ditch cut F1316										
1349	Fill of pit F1350				•						
F1350	Cut of pit										
1351	Fill of gully F1352										
F1352	Cut of gully										
1353	Fill of gully F1354										

No	Description	E	C	R	P	B	M	F	S	G	O
F1354	Cut of gully										
1355	Fill of pit F1356										
F1356	Cut of pit										
1357	Fill of posthole F1358										
F1358	Cut of posthole										
1359	Fill of posthole F1360										
F1360	Cut of posthole										
1361	Fill of stoke pit F1362				•						
F1362	Cut of stoke pit										
1363	Fill of post-hole F1364										
F1364	Cut of posthole										
1365	Fill of posthole F1366										
F1366	Cut of posthole										
1367	Fill of posthole F1368				•		•	•			
F1368	Cut of posthole										
1369	Fill of oven cut F1370: same as 1341										
F1370	Same as oven cut F1342										
1371	Clay foundation F301										
1372	Fill of posthole F1373										
F1373	Cut of posthole										
1374	Fill of posthole F1375										
F1375	Cut of posthole										
F1376	Cut of posthole										
1377	Fill of posthole F1376				•						
F1378	Cut of posthole										
1379	Fill of posthole F1378										
F1380	Cut of posthole										
1381	Fill of posthole F1380				•						
F1382	Cut of pit										
1383	Fill of pit F1382				•						
F1384	Same as F1277										
1385	Same as 1276				•	•					
1386	Backfill of oven F1387										
F1387	Cut of oven: same as F1330										
F1388	Cut of posthole										
1389	Fill of posthole F1388										
F1390	Cut of posthole										
1391	Fill of posthole F1390										
F1392	Cut of posthole										
1393	Fill of posthole F1392				•						
F1394	Gully cut										
1395	Fill of gully F1394				•	•					
F1396	Pit cut										
1397	Fill of pit F1396										
1398	Fill of pit F1401										
1399	Fill of pit F1401				•		•				
1400	Fill of pit F1401										
F1401	Pit cut										
1402	Fill of posthole F1403										
F1403	Cut of posthole										
1404	Fill of posthole F1405										
F1405	Cut of posthole										
1406	Fill of slot F1407										
F1407	Slot cut										
1408	Fill of slot F1409										
F1409	Slot cut										•
1410	Fill of posthole F1411				•						



No	Description	E	C	R	P	B	M	F	S	G	O
F1411	Cut of posthole										
1412	Fill of gully F1413: same as 1170				•						
F1413	Same as gully cut F1172										
1414	Fill of pit F1415				•	•					•
F1415	Pit cut										
1416	Fill of pit F1417				•	•					
F1417	Pit cut										
1418	Fill of pit F1292					•					
F1419	Pit cut										
1420	Fill of pit F1419										
F1421	Pit cut										
1422	Fill of pit F1421										
1423	Fill of pit F1421					•					
1424	Fill of hollow F1425				•	•					
F1425	Hollow cut										
1426	Fill of pit F1427										
F1427	Pit cut										
1428	Fill of pit F1431										
1429	Fill of pit F1431				•			•			
1430	Fill of pit F1431										
F1431	Pit cut										
F1432	Cut of gully										
1433	Fill of gully F1432										
F1434	Pit cut										
1435	Fill of pit F1434										
F1436	Cut of cist burial										
1437	Fill of grave F1436										
1438	Fill of pit F1244										
1439	Fill of pit F1441										
1440	Fill of pit F1441										
F1441	Pit cut										
1442	Fill of ditch F1443: same as 1336										
F1443	Same as ditch cut F1335										
1444	Fill of ditch F1445										
F1445	Ditch cut										
F1446	Stone walls										
1447	Fill of ditch F470: same as 471										
1448	Fill of pit F1450										
1449	Fill of pit F1450	•									
F1450	Pit cut										
1451	Fill of ditch F1452				•						•
F1452	Ditch cut										
1453	Fill of grave cut F1455	•									
1454	Skeleton within F1455										
F1455	Cut of grave										
1456	Fill of ditch F1457: same as 1336										
F1457	Same as ditch F1335										
1458	Fill of ditch F1459: same as 1317										
F1459	Same as ditch cut F1316										
1460	Fill of ditch F982: same as 44				•						
1461	Fill of villa enclosure ditch				•	•					
1462	Same as 1464							•			
F1463	Stone spread: same as F749										•
1464	Fill of pit F1465 (NE field)				•						
F1465	Cut of pit (NE field)										
1466	Fill of pit F1467 (NE field)		•		•	•					•
F1467	Cut of pit (NE field)										

No	Description	E	C	R	P	B	M	F	S	G	O
F1468	Oven (NE field)										
F1469	Post-hole structure										
1470	Fill of pit F1471										
F1471	Cut of pit										
1472	Fill of pit F1473				•						
F1473	Cut of pit										
F1474	Compacted earth surface				•					•	
F1475	Group number for structure										
F1476	Posthole										
F1477	Posthole										
F1478	Posthole										
F1479	Posthole										
F1480	Posthole										
F1481	Posthole										
F1482	Posthole										
F1483	Posthole										
F1484	Posthole										
F1485	Posthole										
F1486	Pit										
F1487	Pit cut										
1488	Fill of pit F1487										
1489	Fill of pit F1490										
F1490	Pit cut										
1491	Fill of posthole F1492										
F1492	Posthole cut										
F1493	Cut of gully?										
F1494	Stone spread										
F1495	Cut of posthole										
U/S					•	•	•	•	•	•	•

### **Appendix 3: catalogues and technical results**

#### **Prehistoric pottery**

- A3.1 **Vessel 1 (Figure 56a)** *Context 283, Phase 1: Rim Diam 340mm, Base Diam 170mm, Wall Thickness up to 21mm.* Some 87 sherds, supposedly from this vessel, were recorded. All showed little sign of abrasion. The writer saw the material after conservation.
- A3.2 This is a large, thick-walled vessel (up to 21mm) with a T shaped, square-sectioned, everted, and internally bevelled rim. It has a well-defined, curving, undecorated neck and a pronounced, almost carinated shoulder. The vessel had a flat base. The fabric shows oxidised inner and outer surfaces. These range in colour from buff to red/brown to dark brown on the external face, and from grey/buff to black on the inner face. The vessel core is grey/buff in colour. Large fragments of broken and crushed rock are included in the fabric. These are probably igneous, fine-grained, dolerite particles and range in size up to 10mm. Vertical smoothing lines are visible on the interior of the vessel. Carbonised residues survived on the inner and outer faces, and a sample from the inner face of the vessel was taken for radiocarbon dating. The resulting date is discussed below.
- A3.3 Apart from the curving neck area, the vessel has been decorated with bands of cord impressions in a herringbone design. This technique has been used on the whole rim of the vessel, above the neck and into the internal bevel. On the rim and the upper part of the body, the decoration has been executed with great care, but the impressions themselves and the arrangement of the banding become less regular on the lower half of the vessel. The possibility must be entertained that we may have the remains of more than one vessel, decorated in a similar style. The herringbone motif continues right down to the base of the vessel, where it appears to have been executed in as controlled a way as the bands visible around the rim.
- A3.4 It has not been possible to reconstruct the height of the vessel.
- Parallels and dating*
- A3.5 This vessel was initially identified at assessment as a Food Vessel or Food Vessel Urn. Extensive research has failed to turn up any parallels within these two traditions for the concave, highly developed neck, devoid of decoration, and the markedly carinated shoulder visible on the vessel. The rim diameter of around 340mm would also place it outside the general range of Food Vessel sizes and towards the upper limit for Food Vessel Urns (Cowie 1978, 23). Rather, it is thought that the best parallels for overall vessel shape, decoration, the T-shaped, square-sectioned rim and flat base, lie within the northern Later Neolithic Peterborough Ware Tradition, particularly the Rudston Ware and Ford variants (Manby 1975; Manby, King and Vyner 2003; Longworth 1969).
- A3.6 The sherds from Red Scar Bridge, Crookhaven, near Ford in Northumberland, show decorated rims and plain, markedly concave necks (Longworth 1969, Fig. 1, 1-5; see also Kinnes and Longworth 1985, 135 and Northumberland UN 18). Broadly similar rim forms are visible in the series of finds now termed Rudston Ware, reported by Manby (1975) from various locations on the Yorkshire Wolds. Special mention should be made of those vessels from the following find spots:

Site name	Reference
Rudston Wold, West Reservoir, Site 5	Manby 1975, 34, 37, Fig 10, Nos 2 and 3
Rudston Wold, Corner Field, Site 7	Manby 1975, 34, 36, Fig 8, No 1
Boynnton, Carnaby Top, Site 11	Manby 1975, 41, Fig 8, No 17
North Carnaby Temple, Field 3, Site 5	Manby 1975, 44, Fig 11, Nos 1 and 2

- A3.7 These finds were made in pit deposits, isolated by ploughing, and all show similar rim forms to Vessel 1 from Quarry Farm. The decoration is differently applied, however, with all examples, except Vessel 2 from Rudston Wold West Reservoir Site 5, being decorated with incised line motifs and lines of impressed decoration made with bird bones. Vessel 2 from this site exhibits comb like impressions on the rim bevel and below the shoulder, with diagonal cord impressions on the outside of the everted rim.
- A3.8 A large sherd assemblage from Boltby Scar Camp in eastern Yorkshire should also be noted here. These vessels are illustrated by Manby, King and Vyner (2003, 50, Fig. 18, Nos 1-11) and exhibit a range of rim forms, all with a marked concave neck and shoulder and decorative traits that include herringbone motifs and the use of twisted cord.
- A3.9 Manby, King and Vyner (2003, 53) points out that medium sized bowls and jar forms within the Northern Peterborough Tradition often have traces of external sooting and internal carbonised residues. This certainly occurred on Vessel 1 from Quarry Farm and material from the deposits was sampled for radiocarbon assay. The resulting date is 2290-2020 cal BC (95% confidence; GrA-33524; 3745+/- 45 BP). This is a very interesting date and may place the vessel's manufacture and subsequent use towards the end of the Later Neolithic, almost at the Neolithic/Bronze Age transition.
- A3.10 Peterborough Ware styles have a general radiocarbon range in the south of England of 4700-3900BP, 3400-2500 cal BC (Garwood 1999, 159). Pit-associated Rudston style material from Burton Agnes Pit 1234 (RCD -2101) has been radiocarbon dated to 4320+/-80 BP; 3320-2695 cal BC, and associated Rudston and Fengate jars among the Marton-le-Moor pit groups have a date range of 3650-2700 cal BC (Manby, King and Vyner 2003, 55).
- A3.11 Thus the date from Quarry Farm would appear to be very late in the sequence and may give some enhanced credence to the notion that late Rudston Ware might be regarded as being a 'proto-food vessel' form (Gibson and Woods 1997, 165).
- A3.12 **Vessel 2 (Figure 56b)** *Context 283, Phase 1: maximum dimensions 74mm x 49mm, Rim Diam 240mm, Wall Thickness 15mm.* This is represented by a single sherd, weighing 66gms.
- A3.13 The vessel has a slack, almost jar-like profile with a marked but rounded internal rim bevel.
- A3.14 The fabric shows oxidised inner and outer surfaces and both are red-brown/buff in colour. The core is dark grey. The fabric appears hard fired with some infrequent hard, igneous rock inclusions, and it has a soapy feel to the touch.

A3.15 The sherd is decorated on the inside of the rim with a band of twisted cord impressed herringbone motifs. This decoration extends some 30mm below the rounded internal bevel of the lip of the rim. On the external face, a band of similar herringbone decoration is also visible. Each individual cord impression, making up the herringbone design, is around 10-11mm in length.

A3.16 This may be part of a Food Vessel or a Food Vessel Urn (*see* Gibson 1978; Cowie 1978), and is possibly of Early Bronze Age date.

*Parallels and dating*

A3.17 The rim does not show a marked bevel but is more rounded, and the vessel has a 'slack' almost jar-like feel to it. Parallels for the rim can be found in north-eastern English Food Vessels from Amble, Northumberland (Gibson 1978, 56, vessel 65, 116), Simonside, Northumberland (*ibid*, 75, vessel 68, 117) and Hasting Hill, Tyne and Wear (*ibid*, 65, vessel 65, 116).

A3.18 Kinnes and Longworth have also recorded a Food Vessel with a similar rim from Warkworth, Northumberland (1985, 130, Barrow 296, burial 9).

A3.19 The decorative motifs and techniques on the Quarry Farm Vessel 2 sherd would be comparable to those on many Food Vessels from the northern region. Direct radiocarbon dates for Food Vessels are still scarce, although nationally Needham (1996) has suggested that this ceramic type did not occur before 2050 cal BC. Dates for vessels from Yorkshire suggest a range from around 2020 cal BC-1435 cal BC (*see* dates from Garton Slack 7, and Gnipe Howe, cited by Manby, King and Vyner 2003, 62).

A3.20 **Vessel 3 (Figure 56c)** *Context 283, Phase 1: Wall Thickness up to 25mm.* This is represented by 18 body sherds of various sizes, of which 4 have been conjoined. A fifth possible conjoining sherd was identified by the writer. It has proved impossible to estimate vessel diameter, but the walls are very thick. The curvature of the conjoined pieces suggests that the vessel was a very thick walled bowl.

A3.21 The fabric exhibits an oxidised exterior surface, ranging from light buff to red-brown in colour, while the inner face is buff-grey. The core is distinctly red-reddish brown in colour. Large fragments of crushed igneous rock, possibly dolerite, and quartz have been included in the fabric as opening agents. These are up to 10mm in size.

A3.22 The vessel has been decorated, seemingly over the whole of the outer surface, by rows of circular and oval bird bone impressions. The circular impressions are up to 4mm in diameter, but on at least one sherd the impressions are roughly 'L' shaped and some horizontal incised lines are also visible on one piece.

A3.23 In the initial assessment of the prehistoric pottery from the site, it was suggested that this vessel was of Food Vessel or Food Vessel Urn type (Gibson 1978; Cowie 1978). This suggestion seems unlikely on the basis of wall thickness and the suggested curvature of the vessel. It may be that Vessel 3 should be seen as Later Neolithic in date and part of the Northern Peterborough Ware Tradition. This point is discussed further below.

*Parallels and dating*

- A3.24 The decoration on this fragmentary vessel can be paralleled on a range of finds from Peterborough Ware contexts on the Yorkshire Wolds, e.g. Rudston Wold Corner Field Site 2, Vessel No 7. This is a portion of a round-bottomed bowl with a slight shoulder (Manby 1975, 33 and 35, Fig. 7, No 7).
- A3.25 A further example comes from Boynton, Carnaby Top Site 11 (Manby 1975, 41, Fig. 8, No 17). This is a bowl in a reddish brown fabric with a grey core and flint tempering. It is decorated with horizontal lines of bird bone impressions.
- A3.26 Similar decoration occurs on a large Peterborough Ware bowl (around 290mm in diam.) recovered from excavations along the line of the Caythorpe gas pipeline in North Humberside. The vessel has a broad out-turned rim with a deep neck above a sharp shoulder angle, and a hemispherical body. It carries rows of bird bone impressions along the rim interior and lip, with further impressions arranged in horizontal rows below the neck (Manby 1996, 35, vessel 3; 36, Fig. 15, No 3).
- A3.27 It has proved impossible to find closer parallels to these sherds, as detailed information on rim or base forms was not available.
- A3.28 **Vessel 4 (Figure 56d)** *Context 721, Phase 1: Rim Diam 130mm, Base Diam 40-50mm, Vessel Height around 204mm, Wall Thickness around 5mm thickening to 11mm at base which is slightly dished.* The initial assessment of the prehistoric pottery from the site recorded some 122 sherds from this vessel. The present writer saw it in a semi-reconstructed state. Around two thirds of the rim of this All-Over Cord Decorated Beaker survives (Clarke 1970, 52-68).
- A3.29 This is an excellent example of Clarke's All-over Cord Decorated style of Beaker (AOC), with a classic bell shape, a rounded carination at around 100mm below the rim and a slightly everted, rounded rim.
- A3.30 The fabric exhibits oxidised, red-brown interior and exterior surfaces, with a black core which might indicate a short firing time. The fabric is hard and well-fired, with fragments of crushed, fine grained igneous rock, ranging from 2-4mm dimension, included as opening agents. Under a hand lens it is obvious that small grog pellets have also been included in the fabric, a point returned to in the discussion below.
- A3.31 The decoration consists of seemingly continuous cord impressed lines around the body of the vessel. The spacing is regular, with around 4 lines per cm of body, and the cord itself is very fine, around 1-2mm thick with around 6 twists per cm.

*Parallels and dating*

- A3.32 Recent studies of Beaker pottery have produced three most currently used systems of classification and phasing:
- i) Stylistic group typologies; early styles of Continental origin followed by later indigenous developments (Clarke 1970)
  - ii) Indigenous stepped development (Lanting and van der Waals 1972)
  - iii) Summary stylistic regional groupings related to wider north west European traditions (Case 1993) (after Manby, King and Vyner 2003, 58-59)

- A3.33 The earliest Beakers are Clarke's AOC cord impressed Beakers (1970, 52-68) and his European Beakers (E-Beakers). Both forms are assigned to a combined Step 1/2 for their Yorkshire focus area by Lanting and van der Waals (1972, 39-40, Fig. 3). AOC Beakers form the major component in Case's Group C, which has a core distribution from the Wash to northern Scotland and a general chronological range around 2500-2000 cal BC.
- A3.34 AOC Beakers are rare north of the Tees, in Durham and Northumberland, and in 1970 Clarke could only document 24 locations in Durham, Cumbria, Northumberland and Yorkshire which had produced one or more of these Beaker types (1970, 528-529). He distinguished three forms of AOC Beaker (*ibid*, 52):
- i) The typical bell beaker shape, a low bell shaped vessel, almost as wide as its own height, with a balanced curvilinear or slightly carinated profile. The lip of the everted rim is usually almost the same diameter as the belly, and the neck diameter about the same as the base. The base is normally nicely dished, scarcely thickening at the centre.
  - ii) The second form differs from the first only in so far as the diameter across the mouth is less than the belly diameter.
  - iii) The third variant can have the shape of either of the other forms but in addition has a cordoned or collared rim.
- A3.35 Vessel 4 from Quarry Farm would appear to be of type ii. Clarke also notes that AOC vessels are usually below 200mm in height.
- A3.36 Tait (1965, 12-13 and 35, Nos 1-11) notes that during the period 1924-1927 some 200 beaker sherds were recovered from an old land surface in the dune area of Ross Links in Northumberland. His re-examination of this material has shown the presence of at least 25 separate Beaker vessels. Of these, eleven examples are probably from AOC Beakers similar to Quarry Farm Vessel 4. The Ross Links site may well be one of the rare examples of a 'Beaker domestic context' in the north east of England.
- A3.37 Manby has shown that AOC Beakers from Rudston Wold, Cottam Warren, Heselton and Barnaby Howes, all in Yorkshire, have all come from domestic contexts (Manby, King and Vyner 2003, 59), and that a small number of single grave, crouched inhumations, associated with AOC Beakers, have been recorded on the Yorkshire Wolds and at Grassington (Gilks 1973, 175).
- A3.38 The Quarry Farm pit, Context 721, may qualify here as a domestic context of deposition.
- A3.39 An AOC Beaker with close parallels, in terms of vessel morphology, would seem to be the much crushed, but restored, example from Kirkhaugh in Northumberland. This was excavated from a cairn in the 1930s and was associated with a sheet gold earring, barbed and tanged arrowhead, flint scraper, flint flakes and a whetstone (Maryon, 1936; Tait, 1965, 16, No. 31; Cowen, 1966; Clarke, 1970, 281, Fig. 3, AOC 65).
- A3.40 A smaller vessel from Rudston 67 in Yorkshire (Clarke 1970, 282, Fig. 10, AOC 1376) and an elegant beaker of seemingly similar proportions to QF Vessel 4, from Grassington, (*ibid*, 284, Fig. 30, AOC 1317) would also offer close parallels.

- A3.41 Smith records a beaker of similar shape to QF Vessel 4, but slightly smaller at 150mm high, from a barrow site at Barnby Howes East in north-east Yorkshire, excavated in 1956 (1994, 89, NYM 60, Fig. 48, 2). The vessel is decorated with twisted cord and was classified as an AOC Beaker by Clarke (1970, Corpus 1235, 506). The decoration, however, continues over the lip of the rim and into the vessel interior.
- A3.42 In terms of general dating we have already remarked on the fact that AOC Beakers form part of Case's Regional Beaker Group C (Case 1993, 260, Fig. 15). Manby highlights the fact that the Group C ceramic range is best represented by a debris spread beneath the extension to the Callis Wold Barrow 275 excavated by Coombs (1976). This has associated radiocarbon dates of 3800±70 (BM-1169) 3680±70 (BM-1448) and 3480±80 (BM-1169) BP (Manby, King and Vyner 2003, 59).
- A3.43 **Vessel 5 (Figure 56e)** *Context 722/723, Phase 1: Rim Diam 140mm, Base Diam around 89mm and flat, Wall Thickness 3-3.5mm.* Some 119 sherds of this vessel were identified during the conservation of the prehistoric pottery from the site. The present writer saw the vessel in a semi-reconstructed state. It is a rare example of one of Clarke's All Over Comb Decorated, European Bell Beakers (Clarke 1970).
- A3.44 An estimate of total vessel height was not possible, but the body can be part-reconstructed to show that the vessel stood to at least 122mm. There is also a slightly rounded carination visible some 60mm above the base.
- A3.45 The vessel exhibits buff-red brown interior and exterior surfaces with a dark grey core. Inclusions are not prominent, but some small crushed, igneous rock fragments and mica are present. The external face in the lower portion of the body and the base show signs of abrasion, but not the edge of the base itself.
- A3.46 The decoration is in the All Over Comb impressed style typical of Clarke's European Bell Beakers. It has been executed with a small toothed comb, in sections which overlap across the body of the vessel. The comb length would seem to be around 34mm, but it is difficult to get an accurate measurement because of the breakage pattern of the vessel. The teeth (and impressions) vary from rectangular to square in shape with maximum dimensions of 1.5mm x 1mm and the teeth are spaced around 1mm apart. The comb type used would be classified as fine to medium (Clarke, 1970, 433).
- A3.47 If the measurement of comb length-based on the overlapping sections of impressed decoration on the vessel-is correct, then the Quarry Farm comb would fall within the general range of comb lengths identified by Clarke (1970, 433). He shows that British Beaker combs vary between 10-54mm in length, with about 70% falling between 30-42mm (*ibid*, 9). The end of a polished rib bone impressing a nine-toothed line 17mm long, from Gwithian in Cornwall (Megaw, 1976, 61), is an example of a comb from a Beaker context which may have been used for pottery decoration. Other possible examples come from Northton on Harris (Simpson 1976, 230, Fig. 12.6), and Bishops Canning Down and Dean Bottom, both in Wiltshire (Gingell 1980, 217).

*Parallels and dating*

- A3.48 European Bell Beakers (E-Beakers) are extremely rare in northern Britain (Clarke, 1970, 69-83). Together with Wessex/Middle Rhine Beakers, Northern/Middle



- Rhine Beakers, and Northern/North Rhine Beakers, they make up Case's Regional Beaker Group D (Case, 1993).
- A3.49 Clarke showed that their overall distribution was very similar to that of AOC Beakers (1970, 75), but with some interesting differences in concentration. Sixty percent of find spots were within 50 miles of eastern and southern coastal tidal waters (*ibid*, 75), and he identified a specific Yorkshire group within the general distribution pattern.
- A3.50 Clarke was at pains to stress the connections between AOC and All-Over Comb Decorated Beakers (*ibid*, 70). The firing and fabric of vessels in the latter group, he thought, was very similar to the AOC fabrics and firing techniques (*ibid*, 70), and he pointed out the fact that a great variety of toothed combs or *spatulae* were used for impressing the designs, mainly with rectangular teeth on a medium to fine spatula. Compared with later comb-impressed beaker groups that he identified, the European Bell Beakers had a higher proportion of fine combs used, with square as opposed to rectangular teeth dominating the designs (*ibid*, 70).
- A3.51 Direct parallels within the northern region for All-Over Comb Decorated Vessels are rare. One of the few known examples comes from Raindale in Yorkshire, near Pickering, on No Man's Land Riggs, Barrow 36. The rim on this vessel is slightly different to that on QF Vessel 5 (*ibid*, 229, Fig. 88; Corpus 1362).
- A3.52 The general date range would seem to be similar to that for AOC Beakers discussed above.
- A3.53 **Vessel 6 (Figure 56f)** *Context 722, Phase 1: Rim Diam around 140mm (only one rim sherd was identified), Base Diam around 76-80mm and flat, Wall Thickness 3-5mm, thickening to around 10mm towards the base. The base itself is around 15-16.5mm in thickness.* 112 sherds from this vessel were identified when the prehistoric pottery from the site was conserved. It is an All-Over Cord Decorated Beaker.
- A3.54 The rim has a slightly flattened top with rounded, bevelled interior.
- A3.55 The vessel exhibits oxidised, red-brown, interior and exterior surfaces, with a black, reduced core. Grog pellets up to 1mm in length are visible within the fabric matrix, along with some quartz, igneous rock and mica.
- A3.56 Decoration consists of seemingly continuous cord-impressed lines around the body of the vessel. The spacing is regular as in Vessel 4 with around 4 lines per cm of vessel body, and the cord is fine around 1mm thick with around 5 twists per cm.
- Parallels and dating*
- A3.57 See discussion of Vessel 4 above.
- A3.58 **Vessel 7** *Context 898, Phase 1: Base Diam around 90mm, Wall Thickness 3-5mm, thickening towards the base to 6-7mm.* A possible Beaker of indeterminate form, 25 sherds of this vessel survive, seven from the base and the remainder from the body. Total weight: 76gms.

A3.59 The fabric is very vesicular and exhibits yellow brown oxidised interior and exterior surfaces. The core of the vessel is dark grey. Some fine mica is visible, but crushed rock additions to the fabric (up to 2.5mm in longest dimension) occur only sparingly. As Willis noted in the initial assessment of this vessel, the sherds do show continuous, probably twisted cord decoration over their exterior surfaces, but this was indistinct due to poor definition and the application of insufficient pressure to leave a clear mark when the decoration was executed. Around the base, however, it does seem that there were at least four lines of twisted cord decoration present. These were spaced at three lines per 10mm, and the cord was around 1mm thick. It was impossible, however, to discern how many twists per centimetre were visible.

*Parallels and dating*

A3.60 No parallels obvious. Dating difficult

**Roman pottery**

**Class A, Amphorae, 0.7%**

A3.61 Some 15 sherds of amphorae were recovered from the site, all from Baetican Dressel 20 oil amphorae. Amphora sherds are rare from basic level rural sites, generally below 0.3% by sherd count. They are usually of Dressel 20 form. Levels here are relatively high for a basic level rural site, at 0.7%, perhaps reflecting a slightly greater use of amphorae on this villa site. In terms of occurrence by phase Dressel 20 sherds are common, at 4.2% by count, in Phase 3a, generally declining after that, although they peak at 7.6% in Phase 5c. The general decline after Phase 3a might be expected given the cessation of importation of the type early in the 3<sup>rd</sup> century.

**Class B, Black Burnished wares, 2.2% (Figure 57; Table 4.10)**

A3.62 BB1 and BB2 are both present on the site in small quantities. BB1 is by far the commoner at 42 sherds to just four of BB2, despite the site being in the north-east, combined BB1 and BB2 amount to just 2.2% of the entire assemblage. BB1 is much commoner on military sites in the region, as is BB2 in the vicinity of South

*Form catalogue*

No	Fabric	Form	Period	Description	MV	RE	RD Avg	Fig.
1	B01	J1.1	LC3-MC4	A jar with an everted beaded rim. Gillam (1976) nos 9-12.	1	19	18	57b
2	B01	J1.2	230-270	A jar with a strongly everted rim not as wide as body.	1	67	18	57d
3	B01	J1.3	220-250	A jar with a cavetto rim.	1	8	20	
4	B01	D2.1	MC2	A flanged rimmed dish with pointed arc decoration.	1	16	16	
5	B01	D1.2	Hadrianic - Antonine	A curving walled dish with a grooved rim.	1	5	20	
6	B01	D1.1	180+	A dish with a simple rim decorated with intersecting arcs.	1	5	21	
7	B10	J1.1	LC2-eC3	A jar with a horizontal grooved rim. Gillam (1970) type 151, Mucking.	1	4	20	57a
8	B10	B1.1	160-200	A BB2 grooved rim bowl, with wavy line on wall.	1	8	21	
9	B10	B2.1	150-200	A bead rim bowl.	1	7	23	
10	B10	D1.1	150-200	A curving walled dish with a triangularly sectioned rim.	1	10	20	57c

Shields and the east end of Hadrian's Wall. In terms of date distribution the BB1 is evenly balanced between 2<sup>nd</sup> century vessels and 3<sup>rd</sup>-early 4<sup>th</sup> century ones, whilst the BB2 forms are Antonine types. The one unusual vessel is No 7 [J1.1] a BB2 associated type, probably from Mucking (Bidwell and Speak 1994, 228), of later 2<sup>nd</sup>-early 3<sup>rd</sup> century date.

A3.63 BB2 first appears in Phase 3b at 1.1% by count, but BB1 does not appear stratified until Phase 3c, although several of the types present are much earlier than this and it is commonest in Phase 4, at 21.3% by count. BB1 forms consist of four dishes and seven jars, whilst the BB2 comprises four bowls and two dishes. The emphasis on tablewares amongst the BB2 is usual, amongst the BB1 bowls/dishes and jars generally are fairly evenly balanced.

**Class C, shell-tempered wares 0.8% (Figure 57)**

A3.64 Shell-tempered wares are another minor element in the supply to the site, none-the-less they are highly unusual.

A3.65 The most expected is C12, Dalesware, (Loughlin 1977, cf. Evans 1985) of which there are five sherds. However, the three rimsherds in this fabric are in the late 4<sup>th</sup> century lid-seated form rather than the classic Dalesware (C12 J1.1; No 12). This form is uncommon outside Lincolnshire, although there are examples from Binchester (Evans and Rátkai forthcoming type G10.1), South Shields (Bidwell and Speak 1994), and at Wellington Row, York (Monaghan 1997). They occur in phases 5a and 5b which is consistent with their dating.

A3.66 The origin of the wheelmade C11 group is uncertain, although it may well be as C13. The C13 group is of Southern-Shell tempered ware and is fairly certainly attributable to Harrold in Bedfordshire (Brown 1994). All the forms are of late Roman date and the evidence from Binchester suggests it arrived there after AD 360. These fabrics have been recorded in small quantities at York (Wellington Row: Monaghan 1997, nos 3243-4), Piercebridge (pers inspection; Evans 1985), Catterick (Wilson 2002) and South Shields (Bidwell and Speak 1994, no 98) but are unexpected on a rural site, although there is an example from the villa at Beadlam (Evans 1996a, type G11.1). The proximity of the Tees and access to markets at Piercebridge may explain the presence of this fabric here, for this material is certainly evidence of the later 4<sup>th</sup> century continuation of the East Coast trade (as are most of the northern examples of Hadham ware). Fabric C13 only occurs in the late 4<sup>th</sup> century phases, peaking in Phase 5a at 1.1% as might be expected. Fabric C11 also occurs in Phase 5a at 0.22% by count and peaks in 5d at 1.4% suggesting it may well belong with the Southern Shell-Tempered ware (C13).

A3.67 Forms represented in fabric C13 are two typical Harrold flange rim bowls and three jars. In fabric C11 there is a single lid.

*Form catalogue*

No	Fabric	Form	Period	Description	MV	RE	RD Avg	Fig.
11	C11	L1.1	Romano-British	A lid with a slightly everted rim.	1	32	16	
12	C12	J1.1	350-420	A late Dalesware form. An everted rimmed jar with a lid-seating groove on the top of the rim.	3	55	14.33	

No	Fabric	Form	Period	Description	MV	RE	RD Avg	Fig.
13	C13	J1.1	360+	A necked jar with an everted, slightly undercut rim.	1	19	19	57g
14	C13	J1.2	360+	A shouldered jar with a triangularly-sectioned undercut beaded rim.	2	23	19	
15	C13	B1.1	350-420	A concave flanged curving wall bowl, a Harrold form (Brown 1994).	2	18	20.5	

**Class F, Colour-coated wares, 1.5% (Figure 57)**

- A3.68 Colour-coated wares are not at all well represented in the assemblage comprising only 1.5% of it by count. By far the commonest fabrics are Nene Valley colour-coats (F01 and F02) at 59% by count and 88% by weight of the finewares. Both the forms in these fabrics are of late 4<sup>th</sup> century date, as probably are most of the sherds. Fabric F01 first appears in Phase 3a at 4.2% by count and the other peak of the Nene Valley colour-coats is in Phase 5d at 4.2% by count. The second commonest group is sherds of Central Gaulish ‘Rhenish’ ware (F06) dating to the later 2<sup>nd</sup> century, amounting to 15.6% by count and 3.3% by weight. In the sequence the fabric first appears residually in Phase 5b at 0.9% by count and peaks in Phase 5d at 2.8%.
- A3.69 Surprisingly the third commonest colour-coated ware is Oxfordshire red colour-coated with four sherds, at 12.5% by count and 3.3% by weight. These include two rim fragment from Young (1977) type C51 bowls, dated AD 240-400+. These sherds are most unlikely to have reached the site before the late 4<sup>th</sup> century; they appear at Binchester from phase 8a onwards (Evans and Rátkai forthcoming). Oxfordshire colour-coats are far from unknown in the north-east but they are rare and it is unexpected to find them in so small an assemblage from a rural site. It is of note that they are associated with Southern-Shell Tempered ware at other sites, as here, and are presumably arriving on the East Coast trade. Oxfordshire sherds first appear in Phase 4.
- A3.70 There are two early oxidised colour-coated fabrics, F05, at 3.1% and F11, a clay pellet roughcast fabric at 9.4% of colour-coats. These both probably date to the later 1<sup>st</sup>-mid 2<sup>nd</sup> century. They first appear residually in phases 5b and 5a respectively.
- A3.71 Crambeck parchment ware (fabric W03) is also rare on the site, with only four sherds in non-mortaria forms.

*Form catalogue*

No	Fabric	Form	Period	Description	MV	RE	RD Avg	Fig.
16	F01	F1.1	350-420	A ring necked flagon, cf. Howe <i>et al.</i> (1980) No 67, 4 <sup>th</sup> century.	1	100	2	57i
17	F01	D1.1	C3-4, prob LC4	A curved wall dish with a simple rim	1	9	13	
18	F11	BK1.1	LC1-MC2	An oxidised clay pellet roughcast beaker with a slightly everted, thickened rim	1	10	15	57k
19	F21	B1.1	240+	A Dr38 bowl, Young (1977) type C51, AD 240+	2	9	19.5	

**Class G, Gritted wares, 64.3% (Figure 58 and 59)**

- A3.72 Gritted wares form the bulk of the Quarry Farm assemblage, over 64% by count.

- A3.73 The commonest group are East Yorkshire calcite gritted wares, fabric G01, amounting to 23.5% of the entire assemblage by count and 40.7% of all the gritted wares. The earliest type in the assemblage is No 20 (J4.1), probably a Knapton type and of 3<sup>rd</sup> century date of which there are two examples residual from phases 4 and 6. There are only two examples of this form. Early 4<sup>th</sup> century S-bend type rims are absent, but there are six examples of mid 4<sup>th</sup> century Proto-Huntcliff types, No 22, (J1.1). As usual calcite gritted wares are a major part of the late 4<sup>th</sup> century assemblage with 19 examples of Huntcliff type jars No 21 (J3.1) and five of a variant No 23 (J3.2) along with a double grooved Huntcliff type storage jar (No 25 (SJ1.1)), three storage jars of Huntcliff type rim form (No 24 (SJ1.2)) and six examples of the wide-mouthed jar or bowl of Huntcliff form (No 26 (WMJ1.1)). The beaded and flanged bowl (No 27 (B1.1)) and the simple rimmed dish (No 28 (D1.1)) are also probably of later 4<sup>th</sup> century date, although the latter type particularly can be earlier. As usual the vast majority of the types are jars (table 4.11), used as cooking pots as the sooting evidence demonstrates (Evans 1993), with an occasional dish or bowl and, more commonly, some storage jars and wide-mouthed jars.
- A3.74 In terms of the distribution of calcite gritted ware by phase Table 4.8 shows the occurrence of the commonest types. Calcite gritted wares occur throughout the sequence at the 20-30% level, before peaking in the later 4<sup>th</sup> century; the latter is usual on northern sites. The former is rather less usual on rural sites outside East Yorkshire. If these sherds are not intrusive it suggests strong links with East Yorkshire throughout the site's history.
- A3.75 The dominance of calcite gritted wares in the supply to sites in the north, north of the Humber-Mersey line, has been discussed by Evans elsewhere (1985). The distribution patterns sketched out then and their explanation would still seem to hold now after the accumulation of much more data.
- A3.76 Fabric G02 is a sandy handmade fabric with some calcite tempering (Evans (1985) fabric 007/168), also of East Yorkshire origin. It amounts to 2.7% of the whole assemblage by count and 4.6% of the gritted wares. It seems to first emerge in East Yorkshire around the middle of the 4<sup>th</sup> century. Forms consist of five proto-Huntcliff type jars (No 30 (J1.1)), two Huntcliff types (No 31 (J2.1)) and a barrel jar (No 33 (J3.1) Gillam (1970) type 155), the latter being a very typical form in this fabric. All of this material is likely to have reached the site in the later 4<sup>th</sup> century. Table 4.8 shows it occurs first in Phase 4 and expands in Phase 5 here.
- A3.77 Fabric G03 is a handmade fine calcite gritted ware, probably also of East Yorkshire origin, represented by a single rimsherd of Dales type form (No 33 (J1.1)). It is likely to be of 4<sup>th</sup> century date.
- A3.78 Fabric G11 is a handmade gritty fabric with common sub-rounded quartz c. 0.3-0.5mm and some very fine gold mica. It is probably of very local origin, not apparently appearing at other sites in the region except Piercebridge (see Vince below A3.116). It amounts to 25.0% of the entire assemblage and 43.3% of all the gritted wares. This fabric is probably similar to a series of local gritted wares, generally of 1<sup>st</sup>-2<sup>nd</sup> century date seen on rural sites in the northern Vale of York (Evans forthcoming b, c and d), probably made very near to the site and not used much beyond it.

- A3.79 Forms consist largely of jars with everted rims; there are a few dishes and two possible crucible fragments. Forms are in an 'Iron Age tradition' although probably of earlier Roman date. Table 4.12 shows a functional analysis of this fabric.
- A3.80 Most of the forms are jars as is general with gritted wares, although there are rather more dishes than might be expected, and some other forms.
- A3.81 Table 4.13 shows the occurrence of the fabric by phase. It emerges at around 37.5% by count in Phase 3a and peaks at 58% in Phase 3c and then falls consistently until Phase 5c, suggesting it was probably residual by Phase 5.
- A3.82 Fabric G41 is probably closely related to fabric G11. It is a wheelmade fabric with common angular quartz c. 0.5-1mm and some fine gold mica. It is probably very local to the site and would appear to be essentially a wheelthrown version of G11. It amounts to 5.9% of the entire assemblage and 10.2% of the gritted wares.
- A3.83 All the eleven rimsherds in this fabric are from jars. Forms consist of everted rimmed jars, shouldered jars and lid-seated shouldered jars. The latter are of later 3<sup>rd</sup>-4<sup>th</sup> century date, probably ending by around the mid 4<sup>th</sup> century if they follow the many other vessels of similar form from the region. It is tempting, therefore to suggest that this fabric is the 3<sup>rd</sup>-4<sup>th</sup> century continuation of fabric G11, which seems to be of earlier Roman date.
- A3.84 Table 4.14 shows occurrence by phase. The fabric seems to appear at a low level from Phase 3a; although it is not clear if the Phase 3 examples are not intrusive, it certainly seems to have emerged by Phase 4 and peaks in Phase 5c at 10.1%.
- A3.85 Fabric G13 is another handmade fabric with some coarse angular quartz c. 1-2mm in a 'clean' matrix and some fine gold mica. It is probably a variant on G11 and local. It amounts to 0.3% of the site assemblage by count and 0.6% of the gritted wares.
- A3.86 Fabric G15 is a handmade fabric with abundant organic temper voids especially on the surface with carbonised organic voids c. 0.5-1mm in length in a matrix with common fine sand c. 0.1mm. It is represented by a single rimsherd in the form of an everted rimmed jar, No 48. It is presumably of earlier Roman date.
- A3.87 Fabric G31 is a handmade fabric with some quartz c. 0.2-0.5mm and some black and white granitic inclusions c. 2mm and some fine gold mica. There are only four sherds in this fabric, 0.2% of the site assemblage and 0.3% of the gritted wares. It is presumably fairly local.

*Form catalogue*

No	Fabric	Form	Period	Description	MV	RE	RD Avg	Fig.
20	G01	J4.1	C3	A Knapton type jar rim.	2	42	13.5	
21	G01	J3.1	350-420	A Huntcliff type lid seated jar with a hooked rim.	19	269	18.58	
22	G01	J1.1	340-360	A proto-Huntcliff type jar rim.	6	40	19	
23	G01	J3.2	350-420	A Huntcliff type jar variant with a rising rim and internal groove.	5	49	20	58q
24	G01	SJ1.2	350-420	A storage jar with Huntcliff type rim with internal groove	3	56	28.67	
25	G01	SJ1.1	350-420	A storage jar with internal double groove	1	9	32	58m

No	Fabric	Form	Period	Description	MV	RE	RD Avg	Fig.
26	G01	WMJ1.1	350-420	A wide mouth jar with an internal groove/ lid seating	6	75	27.83	
27	G01	B1.1	C4	A developed beaded and flanged bowl.	1	9	23	59i
28	G01	D1.1	C3-C4	A straight sided dish with a simple rim	1	11	21	
29	G02	J1.1	M-LC4	A proto Huntcliff type jar with hooked rim and pronounced shoulder.	5	93	14.6	
30	G02	J2.1	350-420	A Huntcliff type rim.	2	41	17.5	
31	G02	J3.1	350-420	A barrel jar. Gillam (1970) type 155.	2	13	18.5	58n
32	G03	J1.1	C3-C4	A necked jar with a thickened everted lid-seated rim of Dales type form.	1	12	20	58a&b
33	G11	J1.2	Romano-British	A jar with an insloping neck with a triangularly sectioned beaded rim.	3	18	18.33	58g
34	G11	J3.2	Romano-British	A jar with a straight, everted, rising rim beaded on the tip.	4	63	18.75	58d
35	G11	J3.1	Romano-British	A jar with an everted thickened triangular rim	8	51	18.88	
36	G11	J2.1	Romano-British	A jar with an everted rim, straight and squared at the tip.	2	21	20.5	58s
37	G11	J1.1	Romano-British	A handmade jar with an everted, rising, straight rim.	3	109	22.33	
38	G11	D1.1	Romano-British	A dish with a simple, squared rim.	6	39	18	
39	G11	D1.2	Romano-British	A simple rimmed dish.	1	5	15	59c
40	G11	O1.1	Romano-British	A crucible?	1	12	20	58k
41	G11	O2.1	Romano-British	A lamp or more likely crucible.	1	30	6	58l
42	G41	J2.1	LC3-EC4	A shouldered jar with an everted, lid-seated rim.	5	104	14.2	
43	G41	J2.2	LC3-EC4	A necked jar with lid-seated rim everted with internal groove beneath.	2	11	15	59b
44	G41	J1.1	LC3-EC4	A shouldered jar with a groove above the shoulder and everted rim.	2	97	17	58r
45	G41	J5.1	Romano-British	A jar with an everted, squared rim.	1	4	20	58i
46	G41	D1.1	Romano-British	A simple rimmed dish.	1	9	18	59a

**Class M, Mortaria, 0.8%** (Figure 60; Table 4.15)

A3.88 Mortaria are also relatively poorly represented in the Quarry Farm assemblage at 0.8% by count, which compares with an urban level of perhaps 3-5%. The principal fabrics represented are Crambeck wares (M01 and M02) representing 46.3% of the mortaria by count. It is of note that the late parchment ware mortaria fabric (M01) outnumbers the late 3<sup>rd</sup> to early 4<sup>th</sup> century sandy fabric (M02) by 2.5 times.

A3.89 The second commonest mortarium fabric is fabric M04 from Mancetter-Hartshill at 25.9% of the mortaria by count. The six rimsherds date from the late 2<sup>nd</sup> century up to the mid 4<sup>th</sup>, with four dating to the late 2<sup>nd</sup>-early 3<sup>rd</sup> century. Mancetter vessels do

not become common in the region until c. AD160, after which they are probably the commonest type until the end of the 3<sup>rd</sup> century, these and the Crambeck material suggesting possibly some diminution in mortaria use on the site in the later 3<sup>rd</sup> to mid 4<sup>th</sup> century.

A3.90 The third commonest mortarium fabric on the site was M12, a Cantley tradition fabric of later 3<sup>rd</sup> to mid 4<sup>th</sup> century date from Piercebridge or Catterick, possibly the former as the brown fabric does not match the Catterick products well. Fabric M21 in contrast is fairly certainly a Catterick product of the Catterick Cantley tradition industry, although the rim form of this sherd is quite similar to a Crambeck (Corder 1936) type 6 mortarium. This latter is not surprising as the Cantley tradition industry at Catterick seems to have worked close-by another producing vessels in the Crambeck tradition (Wilson 2002).

A3.91 Other fabrics represented by single sherds include M03, a whiteware with common moderate sand probably of 2<sup>nd</sup> century date; M05, an imported beaded and flanged mortarium of later 1<sup>st</sup> or early 2<sup>nd</sup> century date from Noyon, Oise (No 58); M22, an oxidised white-slipped mortarium with some sand c. 0.3-0.5mm in a 'clean' matrix, probably of later 1<sup>st</sup> or 2<sup>nd</sup> century date; M23 a white slipped 2<sup>nd</sup> century oxidised beaded and flanged mortarium (No 62) with some common sand c. 0.3-0.5mm and occasional brown ironstone c. 0.5mm in a 'clean' matrix with angular white quartz trituration grits of north-eastern origin, possibly Catterick; and M11, an oxidised mortarium fabric with some fine vegetable(?) temper voids c. 0.3-1mm, occasional brown ironstone inclusions c. 0.5-0.7mm, trituration grits of angular white quartz and feldspar 2-4mm, and some large gold mica, which was probably made very locally.

*Form catalogue*

No	Fabric	Form	Period	Description	MV	RE	RD Avg	Fig.
47	M01	M1.3	350-400+	A parrot beak mortaria, Corder (1936) type 8.	1	7	18	60i
48	M01	M2.1	350-60	A bead and flange mortarium, Corder (1936) type 6 variant.	1	8	20	
49	M01	M1.1	350-400+	A wall-sided mortarium with a groove at top. Corder (1936) type 7	6	104	20.5	
50	M02	M1.1	285-350/60	A Corder (1936) type 6 flanged mortarium.	5	46	25.8	
51	M04	M1.2	200-220	A hammerhead mortaria with cordons on rim and distal end.	1	33	23	60h
52	M04	M1.1	220-350	A reeded hammerhead mortarium.	1	16	25	60f
53	M04	M1.3	160-200	A mortarium with a beaded rim and straight, downsloping flange.	2	20	25	60l
54	M04	M1.4	200-250	A beaded hammerhead mortarium with reeded flange.	1	8	30	60b
55	M05	M1.1	LC1-EC2	A mortarium flange from a hook flanged beaded and flanged mortarium.	1	9	15	60k
56	M12	M1.1	LC3-EC4	A beaded and flanged mortarium	1	32	25	60d
57	M12	M2.1	250-350	A concave reeded hammerhead mortarium in the Cantley tradition.	1	9	28	60c



No	Fabric	Form	Period	Description	MV	RE	RD Avg	Fig.
58	M21	M1.1	LC3-EC4	A beaded and flanged mortarium in the Catterick Cantley tradition, similar to Corder (1936) type 6.	1	12	20	60j
59	M23	M1.1	C2	A white slipped mortarium with a bead and flange rim.	1	14	17	60a

**Class O, Oxidised wares, 0.8%** (Figure 60)

A3.92 Oxidised wares are rare in the Quarry Farm assemblage at only 0.8% by count. All are likely to be of 1<sup>st</sup>-2<sup>nd</sup> century date, although most only occur residually in later phases. Oxidised wares are not common in the region except on early military and military associated sites. Levels here are particularly low as gritted wares clearly provided most of the early Roman assemblage. Forms consist of a few tablewares.

*Form catalogue*

No	Fabric	Form	Period	Description	MV	RE	RD Avg	Fig.
60	O01	B1.1	Romano-British	A bowl with a lid-seated rim	1	7	19	
61	O12	F1.1	LC1-MC2	A bead rimmed flagon rim	1	21	6	60m
62	O13	D1.1	Romano-British	A simple rim dish.	1	15	1	

**Class Q, White slip wares, less than 0.1%**

A3.93 White-slipped oxidised flagon fabrics are very rare here, at less than 0.1%. Only two fabrics are represented, Q01 and Q02. They will almost certainly date to the 1<sup>st</sup> or 2<sup>nd</sup> century.

**Class R, Greywares, 18.0%** (Figures 61 and 62)

A3.94 Greywares form a reasonably substantial proportion of the entire assemblage at 18.0% by count. The largest single group within these is the Crambeck greywares that account for 30.6% of greywares and 5.4% of the entire assemblage. Table 4.16 shows a functional analysis of the Crambeck greywares.

A3.95 As usual the Crambeck greywares are predominantly in tableware forms, unlike most other greywares where jars are the dominant forms. This is a typical pattern for Crambeck greywares (cf. Evans 1989).

A3.96 The second commonest greywares is R11, a greyware with common sand c. 0.2-0.3mm, comprising 2.7% of the whole assemblage and 14% of the greywares by count. The majority of the forms date to the 2<sup>nd</sup> century. Table 4.17 shows a functional analysis in this fabric, unusually, as with Crambeck greyware, the majority of vessels, in this admittedly small sample, are tablewares.

A3.97 Fabric R12 is a greyware with a 'crisp' fracture; with common angular quartz sand c. 0.3-0.4mm and some black ironstone c. 0.2-0.4mm. Forms in this fabric, a bowl a beaker, two jars and two storage jars, are of later 1<sup>st</sup>-2<sup>nd</sup> century date and include some rustic decorated bodysherds. It amounts to 2.2% of the entire assemblage and 12.2% of the greywares.

A3.98 Fabric R13 is a greyware with abundant fine sand c. 0.1mm and occasional black rounded ironstone up to 0.3mm. It amounts to 2.6% of the entire assemblage and 14.8% of the greyware assemblage. Forms include a developed beaded and flanged bowl that must date to the later 3<sup>rd</sup> or early 4<sup>th</sup> century. The forms are

predominantly tablewares with a bowl, a beaker, two constricted-necked jars and four dishes.

- A3.99 Fabric R21 is a gritted greyware with some sand c. 0.3-0.5mm in a 'clean' matrix and occasional large angular quartz up to 2mm, also some fine silver mica. It comprises 2.0% of the entire assemblage and 11.1% of the greywares. Forms (Nos 91 and 92) consist of lid-seated and sub Dales-type jars that must be of later 3<sup>rd</sup>-early 4<sup>th</sup> century date.
- A3.100 Fabric R22 is a hard greyware with common fine sand c. 0.1mm. It amounts to 1.6% of the entire assemblage and 9.1% of the greywares. Forms include a trefoil mouthed jug (No 93), a constricted-necked jar and three jars.
- A3.101 Fabric R23 is a 'soapy' and 'clean' greyware with common fine silver mica. It amounts to 1.0% of the entire assemblage and 5.4% of the greywares. Forms include a Dr 38 copy bowl of 2<sup>nd</sup> century (or later) date (No 101).

*Form catalogue*

No	Fabric	Form	Period	Description	MV	RE	RD Avg	Fig.
63	R09	J1.1	285+	A small jar with stubby everted rim, Corder (1936) type 11.	1	17	7	61c
64	R09	B3.1	285+	A Dr 38 copy, Corder (1936) type 5a.	2	20	20	
65	R09	B1.1	285-400+	A developed beaded and flanged bowl, Corder (1936) type 1.	14	222	20.79	
66	R09	B1.3	285-400+	Flanged bowl with internal burnished wavy line. Corder (1936) type 1b.	1	24	25	62k
67	R09	D1.1	285+	A beaded and flanged dish, Corder (1936) type 1a.	1	16	19	61b
68	R09	D2.1	285+	A straight-sided dish with groove below rim, Corder (1936) type 2a.	2	23	20.5	61o
69	R09	D2.2	285+	A dish with a plain rim with external burnished wavy line, Corder (1936) type 2.	2	10	20.5	
70	R09	D3.1	350-400	A straight-sided dish, Corder (1936) type 10a.	1	11	31	61p
71	R11	J2.1	Romano-British	A shouldered jar with an everted hooked rim MISSING	1	24	14	62g
72	R11	B1.2	Hadrianic - Antonine	A flange rimmed bowl.	1	15	20	61l
73	R11	B1.1	150-200	A bowl with a bead rim, a BB2 copy.	2	18	24	61h
74	R11	D1.1	Romano-British	A dish with a simple rim	2	8	18.5	
75	R11	D2.1	Romano-British	A flange rim from a segmental or beaded and flanged bowl.	1	6	20	
76	R11	D1.2	Romano-British	A groove rimmed dish with a chamfered base.	1	2	21	61n
77	R11	D3.1	C2+	A dish with a triangularly flanged rim and chamfered base	1	12	21	61e
78	R12	J1.1	LC1-MC2	A globular jar with an everted stubby rim.	1	65	7	62i

No	Fabric	Form	Period	Description	MV	RE	RD Avg	Fig.
79	R12	J1.2	C2+	A jar with an everted thickened rim	1	17	14	61k
80	R12	SJ1.1	Romano-British	A shouldered storage jar with a thickening everted rim with a picrust cordon below rim.	2	70	19	62b
81	R12	BK1.1	Romano-British	A small globular beaker with a sub-cornice rim with acute lattice decoration	1	11	12	62h
82	R12	B1.1	LC1-EC2	Segmental bowl	1	7	25	61r
83	R13	CJ1.1	Romano-British	A constricted neck jar with a thickened square rim with groove on upper part of the rim.	2	45	12	
84	R13	J1.1	LC2-EC3?	A necked jar with an everted rim, perhaps A BB copy jar.	2	50	15	
85	R13	BK1.1	Romano-British	A beaker with an insloping wall and beaded rim.	1	9	15	62d
86	R13	B1.1	270+	A developed beaded and flanged bowl.	1	12	20	61a
87	R13	D2.1	Romano-British	A simple rimmed dish cut from a jar base.	1	15	11	62n
88	R13	D1.1	C2+	A curving walled dish rim with beaded rim.	2	17	17	61f
89	R13	D2.2	Romano-British	A simple rim dish.	1	3	20	
90	R15	J1.1	Romano-British	A necked jar with an everted triangularly-sectioned undercut rim.	1	12	15	61g
91	R21	J1.1	Romano-British	A necked jar with a strongly everted thickened rim with lid seating.	1	48	14	62c
92	R21	J1.3	LC3-C4	A sub Dales jar.	1	42	14	62p
93	R22	F1.1	C1-C2	A trefoil flagon rim.	1	100	9	61m
94	R22	CJ1.1	Romano-British	A constricted neck jar with a thickening, rising rim.	1	100	10	61d
95	R22	J1.2	Romano-British	A jar or constricted-necked jar with a stubby horizontal rim with a cordon below.	1	24	11	62q
96	R22	J2.3	Romano-British	A jar with an everted rim	2	26	11.5	61i
97	R22	J3.1	Romano-British	A necked jar with an everted thickened rim with cordon on rim.	1	15	17	62m
98	R23	CJ1.1	Romano-British	A necked constricted-necked jar with a sub-beaded rim.	1	9	10	62j
99	R23	J2.2	Romano-British	A necked jar with a beaded rim.	1	11	12	62e
100	R23	B1.1	Romano-British	A curving walled carinated bowl with a small everted rim.	1	35	12	61q
101	R23	B2.1	C2+	A Dr 38 copy bowl.	1	25	15	62s
102	R25	D1.1	Hadrianic-Antonine	A groove rimmed dish with a chamfered base.	1	7	19	62f
103	R26	B1.1	Hadrianic-Antonine	A flange rimmed bowl.	1	26	24	61j

**Class S, Samian wares, 1.6%**

A3.102 The samian assemblage is discussed separately (A3.137 - 165).

**Class W, whitewares, 0.7%** (Figure 63)

- A3.103 Whitewares amount to only 0.7% of the whole assemblage by count. Three fabrics are represented. W01 and W02 are probably of 1<sup>st</sup> or 2<sup>nd</sup> century date. W03 is Crambeck parchment ware (Evans 1989) in which a single form is represented, a bowl of Corder's (1936) type 9.

*Form catalogue*

No	Fabric	Form	Period	Description	MV	RE	RD Avg	Fig.
104	W03	B1.1	350-420	A reeded collared bowl, Corder (1936) type 9.	1	15	20	63a

**Class Z, Anglian pottery** (Figure 63)

- A3.104 *Form catalogue*

No	Fabric	Form	Period	Description	MV	RE	RD Avg	Fig.
105	Z11	J5.2	C5-C7	A jar/ bowl with a vertical rim and carinated sides	1	22	12	63g
106	Z11	J5.1	C5-C7	A barrel jar with a simple rim	10	54	17.1	
107	Z11	J3.2	C5-C7	A jar with an everted stubby straight rim.	4	27	18.5	
108	Z11	J1.1	C5-C7	A jar with an insloping wall and rising near vertical rim.	7	40	18.71	
109	Z11	J2.1	C5-C7	A jar with an everted outturning rim	7	33	18.86	
110	Z11	J3.1	C5-C7	A jar with an everted cordoned rim	1	4	19	
111	Z11	J6.1	C5-C7	A jar with a simple fairly vertical tapering rim	1	4	20	63i
112	Z11	J4.1	C5-C7	A jar/bowl with a hooked rim	1	9	24	63d
113	Z11	B1.1	C5-C7	A simple rimmed bowl or dish	1	7	18	63e

**Anglian pottery stamps**

- A3.105 'Die' means the actual piece of carved bone, wood, (possibly) chalk or metal used to make the impression. Where stamps are described as 'like', it means they have been made with the same die. A closing bracket after size and pot type definition indicates the presence of more than one stamp motif.
- A3.106 The site has produced sherds displaying nine different motifs as listed in the catalogue.
- A3.107 **Category A** includes all circular stamps. These are by far the most common stamps from the Early Medieval Period, representing well over half the total identified motifs.

**A 1bi** describes a negative ring. This is a very common stamp with a very wide distribution and, as such, is completely undiagnostic. There are two local examples: one from Scorton (7 x 6mm) and one of the two sub-variations of this stamp has been found at Catterick.

**A 1ci** describes a simple positive circle. This is a common stamp with over a hundred examples in the Archive, and with a very wide distribution. As such, it is of little use for diagnostic purposes. Locally, Myers illustrates a pot from Catterick with an A 1ci stamp (estimated 7.5 x 7.5mm), but the Archive has not managed to obtain a cast of it. Otherwise, there are no local examples.

**A 2bi** describes a positive dot-in-circle where the dot is smaller than in the A 2ai category. This is a very common stamp, with a very wide distribution. As such, it is of little use for diagnostic purposes. Locally there appears to be an example on a pot (IB04 / 268A) from High Leven, which lies to the south of Ingleby Barwick, but only photos of this pot have been examined and no cast of the stamps has been made.

**A 3ai** describes a negative grid of 3 x 3 squares. It is common (102 examples in the Archive), and is widely distributed, including examples from the continent. As such, it is of little use for diagnostic purposes. However, in my opinion, both these stamps were made by the same die – it is unusual to be able to identify dies for this motif, but this one has sufficiently clear characteristics for me to be prepared to identify them as the same.

**A 4ai** describes the ‘hot-cross-bun’ stamp, which is the most common of all Anglo-Saxon motifs. This is an extremely common stamp and has an extremely wide distribution. As such, it is of very little use for diagnostic purposes. Locally there appears to be two different examples on a pot (IB04 / 268A) from High Leven, which lies to the south of Ingleby Barwick proper, but only photos of this pot have been examined and no cast of the stamps has been made. There are also examples from Scorton and Catterick.

A3.108 The **A 5a** type comprises the rosette stamps which are one of the most common groups.

**A 5aiii** describes a circular positive rosette stamp. There are 36 examples in the Archive, making it an uncommon stamp. Most of these come from East Anglia or around Cambridge, but they are found as far north as Sancton, Yorks, and also on the continent. There are no local examples.

A3.109 **Category D** covers the oval stamps. This is a small category and comparatively unusual.

**D 1bi** describes a negative oval divided down the centre by a positive bar. It is an uncommon stamp with only 27 examples recorded in the Archive, but with a wide distribution. The motif has a definite connection to Lincolnshire and the Trent Valley with 14 examples recorded from four sites, including eight from Loveden Hill, Lincs. There appear to be four examples from South Elkington, Lincs, but this is based on identification from publications, not from casts. Other examples come from Sancton, Yorks (3); Spong Hill, Norfolk (4); West Stow, Suffolk (2); Girton, Cambs (1); Manor Farm, Harmondsworth, Middlesex (1); Long Wittenham, Berks (1); and Lechlade, Glos. (1).

A3.110 **Category H** covers the ‘S’, ‘Z’ and figure-of-eight stamps (left-facing refers to what can be seen on the pot, so the die would be right-facing, and vice versa). It should be noted that left- and right-facing stamps must be made by different dies; they cannot be made by turning the die upside-down.

The **H 1b** type comprises the outlined ‘S’ and ‘Z’ shapes. **H 1biii** describes an open-ended, left-facing S-shape, characterised by somewhat more curved angles on the bends. There are only 20 stamps recorded in this variety, making it a rare stamp. The closest in style come from Newark, Notts (9 x 6mm) and two from Spong Hill

(9 x 5mm). There are also two stamps from different sites in Northamptonshire (Kettering and Barton Seagrave) that show similar characteristics. The closest in location comes from The Mount in York, but is a quite different design to this stamp. The High Leven pot (see A 4ai above) has an H stamp, but it is an H 1bii% and is quite different to this stamp.

- A3.111 **Category O** covers all indecipherable stamps, which are, of their nature, undiagnostic. It is sometimes possible to make a guess at what the stamp might have been, but not with this example.

*Catalogue of stamp types indentified from the Quarry Farm assemblage*

<b>Briscoe Type</b>	<b>Size in mm</b>	<b>Pot Type</b>	<b>Archive Number</b>	<b>Fig.</b>
A 1bi	5.5 x 5	Sherd	001	64l
A 1bi	10 x 9.5?	Sherds x 2	002	64j
A 1ci	5 x 5.5	Sherds x 2	003	64c
A 2bi	13? x 12	Sherd	004	64h
A 3ai	7 x 7.5	Rim sherd	005	64k
A 3ai	7 x 7.5	Sherd	006	64a
A 4ai	10 x 10	Sherd/small biconical?	007	
A 5aiii	6.5 x 6	Sherd	008	64d
D 1bi	8 x 5.5	Sherd	009	64b
H 1biii	6 x 11	Sherd	010	64e
O	6 x 5.5	Sherd	011	64f

**Characterisation Studies of some Romano-British and Anglo-Saxon Pottery**

**Thin Section Analysis**

- A3.112 Thin sections of each sample were produced by Steve Caldwell, University of Manchester, and stained using Dickson's method (Dickson 1965).

**Fabric G11 (V4008 and V4009)**

- A3.113 The two sections show a fabric containing ill-sorted inclusions varying in type, size and roundness. The following inclusion types were noted:

**Quartz** Abundant grains ranging from about 0.2mm to 1.0mm across. The majority are between about 0.2mm and 0.3mm across and are subangular. Sparse well-rounded grains ranging from about 0.2mm to 1.0mm across are present and the majority of these have a high sphericity. Grains with one or more straight faces, indicative of overgrowth are also present but sparse and range from about 0.3mm to 1.0mm across.

**Sandstone** Moderate angular and subangular fragments, ranging from about 0.3mm to 4.0mm across. The inclusions are well-sorted, about 0.2mm to 0.3mm, and consist of quartz with a small quantity of fresh plagioclase feldspar and muscovite laths up to 0.3mm long and about 0.05mm wide. The grains are mostly interlocking with no visible cement but pores within the rock are partially filled with kaolinite. The remainder of the pore is either a void or filled with brown clay minerals, possibly after burial.

**Muscovite** Sparse laths up to 0.3mm long and 0.05mm wide.

**Clay/iron** Sparse rounded dark brown to opaque inclusionless grains up to 1.0mm long.

**Chert** Sparse rounded grains up to 0.5mm across.

**Igneous rock** Moderate rounded grains varying in composition but mostly of basic igneous character. One consists of a dark brown amorphous groundmass and

euhedral plagioclase laths up to 0.2mm long. Another consists of interlocking altered plagioclase feldspar and sparse quartz grains and several consist of a groundmass of plagioclase laths up to 0.1mm long and altered glass.  
Plagioclase feldspar Sparse fresh angular grains up to 0.5mm long.  
Siltstone Sparse rounded grains up to 1.0mm across consisting of quartz and amorphous brown grains in a silica cement.  
Organics Sparse carbonised inclusions up to 1.5mm long and 0.2mm wide.

A3.114 The groundmass consists of optically anisotropic baked clay minerals, sparse angular quartz up to 0.1mm across and sparse muscovite laths up to 0.1mm long.

A3.115 The inclusions clearly include detrital grains, such as the coarser overgrown quartz and chert (both probably from Carboniferous sources), rounded quartz (Permo-Triassic) and igneous rock (Erratics of glacial origin). However, the majority of the inclusions are probably derived from the sandstone. The lack of rounding of some of the sandstone fragments and the frequency of these inclusions suggests that this rock was closest to the source of the fabric. A fluvio-glacial source is evident and this places the source of the sand or boulder clay to the south or west of the Permian outcrop. All of these features could be found in the local boulder clay.

A3.116 A similar fabric has been recorded in the Roman period at Piercebridge, where it was used in the 3<sup>rd</sup> century to produce coarse handmade jars (Cooper and Vince forthcoming, Nos. 7 and 12, Samples V1459 and V1461).

**Fabric G41 (V4010 and V4011)**

A3.117 The two samples of Fabric G41 have the same ill-sorted texture as Fabric G11 but the inclusions are clear different. The following inclusion types were noted:

Quartz Abundant subangular grains, ranging from about 0.1mm to 1.0mm across. The finer grains are extremely angular.

Feldspar Sparse microcline and perthite ranging from about 0.2mm to 0.5mm across.

Chert Sparse rounded grains ranging from about 0.1mm to 1.0mm across.

Sandstone Sparse subangular fragments of sandstone, ranging from about 0.3mm to 1.5mm across. The sandstones vary in texture but including some with a similar texture to the dominant type in G11 as well as coarser-grained sandstones with an ill-sorted sand and a mixture of amorphous brown cement and kaolinite.

Muscovite Sparse laths up to 0.2mm long.

Siltstone Sparse rounded fragments varying in texture and having a brown fine-grained groundmass and abundant angular quartz silt. Examples with mean grain sizes of about 0.05mm and about 0.1mm are present.

Voids Sparse subangular voids, probably originally holding calcareous inclusions.

Organics Sparse carbonised inclusions up to 1.0mm long and about 0.2mm wide.

A3.118 The groundmass consists of optically anisotropic baked clay minerals, mostly masked by carbon except at the oxidized margins, sparse angular quartz and sparse dark brown clay/iron grains up to 0.1mm across. Isotropic pale brown phosphate fills some laminae and voids (including probably pores within some of the sandstone fragments) and is probably a post-burial concretion.

A3.119 As with Fabric G11, the inclusions in this fabric are probably from a detrital sand of fluvio-glacial origin. There are numerous differences in the suite of rocks and minerals present and in particular no rounded igneous erratic grains. The sandstone

and siltstones include examples which are probably of Coal Measures origin but the coarser quartz grains and feldspars are probably from the Millstone Grit. The lack of obvious Permo-Triassic quartz means that a source north or west of the Permian outcrop is possible, although many of the coarse gravel-tempered samples found in the Vale of York, and probably made in that area, also contain no Permo-Triassic quartz, or at best rare grains.

- A3.120 The petrographic composition of the fabric therefore distinguishes it from Fabric G11 and is less clearly tied to the Tees valley area. Nevertheless, a local source is still possible.

**Fabric Z11 (V4012-15)**

- A3.121 Two fabrics are present in the four thin sections. The first (V4012, V4013 and V4015) contains abundant angular quartzose sand with the majority of grains ranging from about 1.0mm to about 3.0mm across whilst the other, V4014, contains a fine quartz sand with sparse larger subangular and rounded inclusions.

*Subfabric 1 (V4012, V4013 and V4015)*

- A3.122 The following inclusion types were noted:

Quartz/Sandstone. Moderate subangular grains ranging from about 0.3mm to 2.0mm across. Several are polycrystalline and strained. Most have one or more straight facets and several have kaolinite cement adhering.

Feldspar. Sparse altered feldspar, similar in size and character to the quartz grains described above.

Acid igneous rock A single angular fragment 0.5mm across composed of an opaque accessory mineral, biotite and quartz. Also some rock fragments consisting of quartz and altered feldspar, of similar size and shape to the quartz/sandstone grains described above.

Quartz Moderate subangular to rounded grains about 0.1mm to 0.2mm across.

Chert Sparse light brown angular grains up to 1.0mm across.

Muscovite Sparse laths up to 0.3mm long.

Biotite Sparse laths up to 0.3mm long, partially altered to a dark brown/opaque material around the edges.

Organics Sparse carbonised inclusions up to 1.0mm long and 0.2mm wide.

- A3.123 The groundmass consists of optically anisotropic baked clay, mostly obscured by carbon except at the oxidised surfaces, abundant angular quartz up to 0.1mm across, moderate muscovite laths up to 0.1mm long.
- A3.124 These three sections have a very similar composition to early Anglo-Saxon vessels from various sites in the Vale of York, ranging from Piercebridge in the north to Heslington Hill, near York, in the south. It is suggested that the texture is due to the use of a late glacial/post-glacial lacustrine silt with coarse fluvio-glacial gravel added. The larger inclusions probably all originated to the north and west of the Vale of York: the sandstone is probably an arkose (feldspathic sandstone) whilst the biotite and acid igneous rock fragment is probably from southwest Scotland or the Lake District, brought south by ice crossing the Stainmore gap.
- A3.125 Very similar fabrics occur from sites at the northern and southern extremes of this distribution and thin sectioning cannot determine whether they come from a single source or were made in several centres.



*Subfabric 2 (V4014)*

- A3.126 The following inclusions were noted:  
Basic igneous rock Moderate subangular fragments ranging from about 0.3mm to 2.0mm across. The fragments all have a similar texture and lithology and include light green, slightly pleiochroic pyroxene crystals up to 1.0mm long in a groundmass of laths of plagioclase feldspar, euhedral opaque grains and amorphous brown material.  
Quartz Abundant angular to subangular grains ranging from about 0.05mm to 0.2mm across.  
Clay/iron Sparse rounded dark brown grains up to 1.0mm across.
- A3.127 The groundmass consists of optically anisotropic dark brown baked clay minerals and sparse angular quartz up to 0.1mm across.
- A3.128 Unlike basic igneous rock-tempered vessels of prehistoric and early Roman date, the basic rock inclusions in this fabric are clearly weathered, albeit only slightly, and are therefore detrital grains. Such rocks occur as erratics in boulder clays throughout the Vale of York and even occur in isolated patches of boulder clay in the Trent valley. Nevertheless, they are more common on sites in the Tees valley, Vale of Pickering and East Yorkshire and have not been noted on early Anglo-Saxon sites in the Vale of York south of Catterick where fabrics similar to Subfabric 1 predominate.

**Chemical analysis**

- A3.129 Off-cuts of about 1-2gm were taken from each submitted vessel and the outer surfaces mechanically removed. The remainder of the sample was crushed to a fine powder and submitted to Royal Holloway College, London, where the chemical composition was determined using Inductively-Coupled Plasma Spectroscopy (ICPS). A range of major elements was measured and expressed in percent oxides (Table 4.48) and a range of minor and trace elements was measured and expressed as parts per million (Table 4.49). Silica was estimated by subtracting the total percent oxides from 100%. The various fabric groups have mean silica contents ranging from 72.9% (Z11 subfabric 2) to 74.8% (Z11 subfabric 1) but all are within the 95% confidence level of the mean value, 73.78 $\pm$  0.98%.
- A3.130 The elemental data was then normalised to aluminium and the various fabric groups compared. The normalised data were then examined visually and in eleven cases there are differences in the ranges of the elements between fabric groups. However, with no more than 3 samples in any group, and only one in one group, such differences would be expected if the samples all came from the same statistical population with element values having a normal distribution within that group. It may be for this reason that Z11 subfabric 2, with only one sample, has the greatest number of differences between its composition and the remainder.
- A3.131 The data were then examined using factor analysis, omitting calcium, phosphorous and strontium, all of which are affected by leaching and post-burial concretion. The analysis was carried out using WinStat for Excel (Fitch 2001) and five factors with eigenvalues over 1.0 were found. A bi-plot of the first two factors (Table 4.41) indicates that the F2 score of Z11 subfabric 2 distinguishes it from the remainder whilst there is no difference in either F1 or F2 scores between the other fabrics. A bi-plot of the F3 and F4 scores (not illustrated) shows no differences between the various groups. Factor 5 separates Z11 subfabric 1 from Z11 subfabric 2 and both

of these groups from G11 and G41. Table 4.43 shows the weightings of the various elements contributing to the F2 and F5 scores. This factor analysis therefore confirms the distinctive character of the Z11 subfabric 1 sample and suggests that Z11 subfabric 1, Z11 subfabric 2 and G11/G41 were made from different raw materials.

- A3.132 The Ingleby Barwick samples were then compared with the two Piercebridge Roman “native ware” samples that contain similar sandstone inclusions to those in G11. Again, factor analysis found 5 significant factors, but bi-plots of F1 against F2, and F3 against F4 showed no obvious patterning. Factor 5, however, distinguished the Z11 subfabric 2 sample from the remainder. This analysis is consistent with the Piercebridge and Ingleby Barwick G11 samples coming from the same source (or at least exploiting chemically indistinguishable raw materials).
- A3.133 The Ingleby Barwick data were finally compared with a series of analyses of sandstone-sand tempered early Anglo-Saxon vessels of similar character to Z11 subfabric 1 (Table 4.40). Factor analysis found five significant factors and a bi-plot of the first two factors (Table 4.46) indicates that the F2 scores separate a group of Piercebridge vessels from the remainder and that three of the Ingleby Barwick samples also have high F2 scores. However, in general the Piercebridge samples are so variable in composition that they mask any other detail. Consequently the analysis was repeated omitting the Piercebridge data.
- A3.134 Factor analysis again found five significant factors, none of which clearly separated any of the groups apart from Z11 subfabric 2, which has a higher F3 score than any of the remainder. In bi-plots of F1 against F2, and F3 against F4 and F3 against F5 (of which the latter is published here, Table 4.46), the Ingleby Barwick samples mainly occupy the same areas of the plot, indicating that the Roman and Anglo-Saxon Ingleby Barwick sherds are more similar to each other than to the early Anglo-Saxon sandstone-tempered sherds from other sites. Examination of Table 4.46, suggests that the West Lilling, Catterick and Scorton samples have discrete sources whilst the Norton samples have similar scores to Scorton. However, in this graph the various Ingleby Barwick samples fall centrally, an area of the graph occupied by samples from York and Scorton.

### **Ceramic artefacts**

- A3.135 **SF 225 (Figure 64m)** *Context 977, Phase 3b: D 53, T 24mm.* Irregular bi-conical ceramic spindle whorl, D-shaped in section. The upper surface is thicker and more conical than the lower, with finger impressions remaining from manufacture particularly on the lower surface. The central perforation may have been produced by forming the object around a cylindrical rod (D 11.5mm).
- A3.136 **SF 226 (Figure 64n)** *Unstratified: D 45, T 7.5mm.* Flat disc-shaped spindle whorl made from a reused Roman potsherd; white gritty fabric with blue-grey surfaces. Central biconical perforation (7-12mm D).

### **Samian**

*Catalogue (Figure 65)*

- A3.137 The catalogue lists all samian sherds from the excavations. The catalogue adheres to a consistent format. Sherds are listed in context number order, then the following data are given: the number of sherds and their type (ie. whether a sherd is from the rim, base (footring) or body of a vessel), the source of the item (Central Gaulish is

abbreviated to CG and East Gaulish to EG), the vessel form (where identifiable), the weight of the sherds in grams, the percentage of any extant rim (ie. the RE figure, where 1.00 would represent a complete circumference) or base (ie. the BE figure) and the rim and base diameters, and an estimate of the date of the sherd in terms of calendar years (this being the date range of deposits with which like pieces are normally associated). Any decoration is then described. The presence of other features such as burning, repair, trimming and wear was also looked for and is noted where observed.

- A3.138 In order to arrive at reliable dates for samian sherds it is necessary to record and consider all aspects of their typology (eg. fabric, form, vessel size, decoration, gloss surface, etc.). Since these aspects are essential elements, and were recorded in ascertaining the dates of individual sherds, these data are recorded fully here in the catalogue.

**Context 2 (Figure 65b)**

- A3.139 Body, EG Rheinzabern, Drag. 31, 16g, about AD 165-240. The underside of the vessel floor, within the area of the now absent footring is worn suggesting that this vessel had had a second use, inverted, following an original breakage. A stamp occurs reading 'QVARTINVSF' being a stamp of Quartinus of Rheinzabern, specifically an example of his Die 1a in the Leeds Corpus. Two examples of this stamp occur amongst the late samian from New Fresh Wharf (St Magnus House), both on Drag. 31 (Dickinson 1986, 194).

**Context 3**

- A3.140 Body, CG Lezoux, form not identifiable, 1g, about AD 120-200.

**Context 63**

- A3.141 Base, CG Lezoux, Curle 23, 29g, BE: 0.20, Diam. 100mm, about AD 140-200. The footring is worn, while the interior floor of the vessel also appears somewhat worn.

**Context 129**

- A3.142 Base, CG Lezoux, Drag. 31, 20g, BE: 0.20, Diam. 90mm, about AD 150-200. Worn base. This item has been trimmed round at the junction of the vessel floor and the (outer) footring with the circumference of the break having been smoothed.

**Context 221**

- A3.143 Body, CG Lezoux, form not identifiable, 1g, about AD 120-200. A part of an abraded and unidentifiable stamp is represented apparently reading: 'V[']'.

**Context 233 (Figure 65a)**

- A3.144 Body, EG Rheinzabern, Drag. 37, 2g, about AD 180-250. A small area of decoration occurs. Three sherds from the same vessel were present in context 236 and further description is given under context 236 heading.

**Context 236 (Figure 65a)**

- A3.145 Body, CG Lezoux, Drag. 37, 6g, about AD 120-200. A small area of undiagnostic decoration is present from low down on the decorated band; above a plain band border defining the decorated zone are the tail and hind legs of an apparent dog running to the left (cf. O.1914B (Oswald 1936-7) but to left) to the right of the dog a part of an abraded leaf occurs, seemingly a fragment from a larger motif of Rogers' H series (Rogers 1974).

Body, CG Lezoux, from a dish or bowl, 9g, about AD 120-200.

Three body sherds, all same vessel, EG Rheinzabern, Drag. 37, 28g, about AD 180-250. A further sherd from the same vessel occurs in context 233. The decoration (along with that occurring on the sherd from context 233) indicates a bowl of the 'Ware mit Eirstab E.25.26' style (Ricken and Fisher 1963; cf. Ricken and Ludowici 1948, Taf. 114, Nos 13-7); part of the ovolo band occurs and although not particularly distinct appears to be LRF. E26; the decorative scheme includes vertical arrangements of the poppy-head LRF.P116 with a cuneiform leaf as lower terminal and of the bifid leaf LRF.P145; the latter is also employed to define a basal wreath.

**Context 264**

A3.146 Body, CG Lezoux, form not identifiable, 1g, about AD 120-200.

**Context 271**

A3.147 Body, CG Lezoux, Drag. 31, 2g, about AD 150-200.

**Context 287**

A3.148 Rim, CG Lezoux, Drag. 33, 1g, RE: 0.08, Diam. 130mm, about AD 120-200.  
Body, CG Lezoux, probably Drag. 31R, 8g, about AD 160-200.

**Context 294**

A3.149 Rim, CG Lezoux, Drag. 37, 15g, RE: 0.07, Diam. 210mm, about AD 120-200. No decoration is represented.

**Context 419**

A3.150 Rim, CG Lezoux, Drag. 31, 17g, RE: 0.07, Diam. 190mm, about AD 150-200. The rim is worn.

**Context 492**

A3.151 Rim, CG Lezoux, Drag. 33, 14g, RE: 0.20, Diam. 110mm, about AD 120-200. (The rim has a bevelled exterior edge as occasionally occurs with this form, in contrast with the standard plain rounded terminal).  
Rim, CG Lezoux, Drag. 37, 13g, RE: 0.07, Diam. 180mm, about AD 140-200. Part of the ovolo band occurs; this is poorly defined but resembles Rogers B162 (Rogers 1974) or perhaps Cinnamus II's ovolo type 3 (Stanfield and Simpson 1958, Fig. 47 No. 3) with a double border, central projection, and straight, square ended tongue.  
Body, CG Lezoux, Drag. 31, 1g, about AD 150-200.  
Base, CG Lezoux, Drag. 31R, 32g, BE: 0.21, Diam. 100mm, about AD 160-200.  
Worn base. Has evidently been clipped round at the junction of the footring and the vessel floor.  
Rim, EG Rheinzabern, Ludowici Ti', 12g, RE: about 0.04, Diam. ? about 210mm; about AD 220-260.

**Context 570**

A3.152 Body, CG Lezoux, Drag. 31, 1g, about AD 150-200.

**Context 668**

A3.153 Rim, CG Lezoux, probably Drag. 31R, 4g, RE: about 0.03, Diam. uncertain, about AD 160-200. The rim is worn.

**Context 703**

- A3.154 Base, CG Lezoux, Drag. 37, 27g, BE: 0.18, Diam. 100mm, about AD 120-200. The footring is worn. No decoration is represented.  
Body, CG Lezoux, Drag. 31, 8g, about AD 150-200.  
Body, probably EG Rheinzabern, Drag. 33, 7g, about AD 160-230.

**Context 763**

- A3.155 Body, CG Lezoux, Drag. 18/31, 5g, about AD 120-150. Has been trimmed round at the junction of the vessel floor and wall, with the break consistently smoothed.

**Context 806**

- A3.156 Body, CG Lezoux, probably Drag. 31, 1g, about AD 150-200.

**Context 822**

- A3.157 Base, CG Lezoux, Drag. 33, 2g, BE: about 0.01, Diam. uncertain, about AD 120-200.

**Context 841**

- A3.158 Body, CG Lezoux, Drag. 18/31, 5g, about AD 120-140.

**Context 882**

- A3.159 Rim, CG Lezoux, Drag. 31, 6g, RE: about 0.03, Diam. uncertain, about AD 150-200.

**Context 927**

- A3.160 Rim, EG Rheinzabern, Drag. 31, 10g, RE: 0.06, Diam. 190mm; about AD 160-230.

**Context 977**

- A3.161 Body, CG Lezoux, Drag. 31, 11g, about AD 170-200.

**Context 1195**

- A3.162 Body, CG Lezoux, Drag. 31R, 25g, about AD 160-200.

**Context 1314**

- A3.163 Body, CG Lezoux, from a bowl or dish, 4g, about AD 120-200.

**Context 1416**

- A3.164 Body, CG Lezoux, Drag. 37, 27g, about AD 120-200. A small area of decoration is represented; the lower margin of the decorated band is defined by a plain ridge and above occurs a large double ring medallion; no other details are extant.

**Unstratified**

- A3.165 Body, CG Lezoux, large Drag. 33, 5g, about AD 120-200.  
Body (flange fragment), CG Lezoux, Drag. 38, 7g, about AD 130-200.  
Base, CG Lezoux, Drag. 30, 81g, BE: 0.43, Diam. 90mm, about AD 140-200. Not stamped; no decoration is represented. The footring is worn.  
Rim, CG Lezoux, Drag. 33, 2g, RE: about 0.06, Diam. about 110mm, about AD 140-200.  
Body (essentially a chip from a comparatively large vessel), CG Lezoux, form not identifiable, 1g, about AD 140-200.  
Base, CG Lezoux, Drag. 31, 71g, BE: 0.36, Diam. 90mm, about AD 150-200. Part of a retrograde stamp occurs reading 'JVS' (but retrograde). The footring is worn.

Body, EG Rheinzabern, Drag. 31, 4g, about AD 160-230.

### **Coins**

- A3.166 **Coin 1 (SF 40)** *Context 1447, Phase 5a, MDF, XR 5134*  
Ruler: Trajan  
Denomination: Sestertius  
Catalogue ref: RIC 663  
Obverse: IMP CAES NER TRAIANO OPTIMO AVG GER DAC PARTHICO PM  
TRP COS VI PP  
Reverse: [PROVIDENTIA AVGVSTI] SC  
Date of issue: AD 114-17  
Mint: Rome  
Condition: W/VW  
Diameter: 34 mm  
Weight: 21.6 g  
Die-axis: 6
- A3.167 **Coin 2** *unstrat, MDF N, XR 5134*  
Ruler: Septimius Severus  
Denomination: Denarius  
Catalogue ref: RIC 86  
Obverse: L SEPT SEV PE-RT [AVG IMPVIII]  
Reverse: [PM TRP] IIII COS II PP Victory advancing l.  
Date of issue: AD 196-97  
Mint: Rome  
Condition: SW/W  
Diameter: 17.5 mm  
Weight: 2.4 g  
Die-axis: 12
- A3.168 **Coin 3** *unstrat, MDF P, XR 5134*  
Ruler: Claudius II  
Denomination: 'Antoninianus'  
Catalogue ref: RIC 14/15  
Obverse: [IMP(C) CLAV]DIVS AVG  
Reverse: [AEQVITAS] AVG  
Date of issue: AD 268-70  
Mint: Rome  
Condition: W/SW  
Diameter: 18 mm  
Weight: 1.6 g  
Die-axis: 6
- A3.169 **Coin 4** *unstrat, MDF K, XR 5134*  
Ruler: Victorinus  
Denomination: 'Antoninianus'  
Catalogue ref: RIC 71  
Obverse: [IMP C VICTO]RINVS PF AVG  
Reverse: SALVS [AVG]  
Date of issue: 268-70  
Condition: SW/W  
Diameter: 17 mm

Weight: 2.7 g  
Die-axis: 7

- A3.170 **Coin 5** *Context 492, Phase 7, XR 5135*  
Ruler: 'Tetricus I'  
Denomination: 'Antoninianus'  
Catalogue ref: c. as RIC 68 etc.  
Obverse: [I]MP C T[ETRICVS..AVG]  
Reverse: -  
Date of issue: AD '270-73'  
Condition: SW/C  
Diameter: 17.5 mm  
Weight: 1.6 g  
Die-axis: ?
- A3.171 **Coin 6** *unstrat, MDF M, XR 5134*  
Ruler: Constantine I  
Denomination: 'Follis'  
Catalogue ref: RIC 6 LN 265  
Obverse: CONSTANTINVS [PF AVG]  
Reverse: PRINCIPI IVVENTVTIS  
Mint-mark: [\*]/[PLN]  
Date of issue: AD late 312/313  
Mint: London  
Condition: VW/VW  
Diameter: 23 mm  
Weight: 4.3 g  
Die-axis: 6
- A3.172 **Coin 7** *Context 1461, Phase 5b, MDF R, XR 5134*  
Ruler: Constantine I  
Denomination: -  
Catalogue ref: RIC 7 LN 156  
Obverse: IMP CONSTANTI-NVS AVG  
Reverse: VICTORIAE LAETAE PRINC PERP VOT/PR  
Mint-mark: PLN  
Date of issue: AD 319  
Mint: London  
Condition: W/SW  
Diameter: 18 mm  
Weight: 2.1g  
Die-axis: 6
- A3.173 **Coin 8** *Context 562 (fill of pit F698), Phase 5d, XR 5134*  
Ruler: Constantine I  
Denomination: -  
Catalogue ref: RIC 7 LG 242, HK 184  
Obverse: VRB[S ROMA]  
Reverse: Wolf and Twins  
Mint-mark: PLG  
Date of issue: AD 330-31  
Mint: Lyon

Condition: ?W/W  
Diameter: 15.5 mm  
Weight: 0.9 g  
Die-axis: 12

A3.174 **Coin 9** *unstrat, MDF Q, XR 5134*

Ruler: Constantine I  
Denomination: -  
Catalogue ref: RIC 7 TR 548, HK 71  
Obverse: CONSTAN-[T]INOPOLIS  
Reverse: Victory on prow  
Mint-mark: TRP\*  
Date of issue: AD 332-33  
Mint: Trier  
Condition: W/W  
Diameter: 18 mm  
Weight: 1.6g  
Die-axis: 12

A3.175 **Coin 10** *unstrat, MDF J, XR 5134*

Ruler: Magnentius  
Denomination: -  
Catalogue ref: as RIC 8 AM 41, CK 20  
Obverse: [DN MAGNENT-TIVS PF AVG] (legends and edges abraded away)  
Reverse: [SALVS DD NN AVG ET CAES]  
Mint-mark: -  
Date of issue: AD 353  
Mint: -  
Condition: SW/SW  
Diameter: 25.5 mm  
Weight: 2.9 g  
Die-axis: 12

A3.176 **Coin 11:** *Context 238, Phase 5b, SF 2, XR 5135*

Ruler: 'Constantius II'  
Denomination: -  
Catalogue ref: c. as RIC 8 TR 359, CK 76  
Obverse: [DN CONSTANTIVS PF AVG]  
Reverse: [FEL TEMP REPARATIO] FH3  
Date of issue: AD '353-58'  
Condition: SW/SW  
Diameter: 13 mm  
Weight: 0.6 g  
Die-axis: 6

A3.177 **Coin 12** *Context 369, Phase 5a, XR 5135*

Ruler: 'Constantius II'  
Denomination: -  
Catalogue ref: c. as RIC 8 TR 359, CK 76  
Obverse: [DN CONSTANTIVS PFAVG]  
Reverse: [FEL TEMP REPARATIO] FH3  
Date of issue: AD '353-58'



- Condition: SW/C  
Diameter: 9.5 mm  
Weight: 0.5 g  
Die-axis: 6?
- A3.178 **Coin 13** *unstrat, MDF T, XR 5134*  
Ruler: probably 'Constantius II'  
Denomination: -  
Catalogue ref: c. as RIC 8 TR 359, CK 76  
Obverse: [DN CONSTANTIVS PF AVG]  
Reverse: [FEL TEMP REPARATIO] FH3  
Date of issue: 4<sup>th</sup> century AD, probably '353-58'  
Condition: C/C  
Diameter: 13.5 mm  
Weight: 0.7 g  
Die-axis: 12?
- A3.179 **Coin 14** *Context 273, Phase 5a, XR 5135*  
Ruler: Valentinian I  
Denomination: -  
Catalogue ref: as CK 484  
Obverse: [DN VALENTINI]-ANVS PFAVG  
Reverse: [GL]ORIA RO-MANORVM  
Mint-mark: OF/III//[CON-]  
Date of issue: AD 364-75  
Mint: Arles  
Condition: SW/SW  
Diameter: 17.5 mm  
Weight: 1.8 g  
Die-axis: 11
- A3.180 **Coin 15** *unstrat, MDF U, XR 5134*  
Ruler: Gratian  
Denomination: -  
Catalogue ref: CK 505/529  
Obverse: [DN GRATIANVS AVGG AVG]  
Reverse: [GLORIA NO-VI SAECVLI]  
Mint-mark: [PCON-]  
Date of issue: AD 367-75  
Mint: Arles  
Condition: W/W and edges abraded  
Diameter: 14.5 mm  
Weight: 1.5 g  
Die-axis: 12
- A3.181 **Coin 16** *unstrat, MDF S, XR 5134*  
Ruler: Theodosius I  
Denomination: -  
Catalogue ref: as CK 565  
Obverse: [DN THE]ODO-[SIVS PF AVG]  
Reverse: [VICTORIA AVGGG]  
Mint-mark: -

Date of issue: AD 388-95  
Mint: -  
Condition: W/W  
Diameter: 12 mm  
Weight: 0.9 g  
Die-axis: 6

A3.182 **Coin 17 (SF 6)** *Context 236, Phase 5d, , XR 5135*

Ruler: House of Theodosius  
Denomination: -  
Catalogue ref: as CK 1107  
Obverse: -  
Reverse: [SALVS REIPV]BLI[CAE]  
Mint-mark: AQP  
Date of issue: AD 388-402  
Mint: Aquileia  
Condition: SW/SW  
Diameter: 12 mm  
Weight: 1.0 g  
Die-axis: 6

A3.183 **Coin 18** *unstrat, MDF V, XR 5134*

Ruler: House of Theodosius  
Denomination: -  
Catalogue ref: as CK 797  
Obverse: -  
Reverse: SALVS REIPVBLICAE (2)  
Mint-mark: -  
Date of issue: AD 388-402  
Mint: -  
Condition: W/W  
Diameter: 11.5 mm  
Weight: 1.0 g  
Die-axis: 12

A3.184 **Coin 19** *unstrat, MDF W, XR 5134*

Ruler: Henry III (AD 1216-73)  
Denomination: Long cross penny (type produced AD 1247-79)  
Catalogue ref: North 991, type 5a  
Obverse: HENRICUS REX III Crowned head facing, sceptre in left hand  
Reverse: HENRI ON LUNDE Long cross voided, 3 pellets in each angle  
Monyer: Henri  
Date of issue: 1251-72  
Mint: London  
Condition: W/W  
Diameter: 17.5 mm  
Weight: 1.3 g

A3.185 **Coin 20** *unstrat, MDF L, XR 5134*

Identification: A small copper alloy disc: a button or similar.  
Diameter: 19mm  
Weight: 2.9 g

- A3.186 **Coin 21** *unstrat, MDF O, XR 5134*  
Identification: A heavily-leaded patterned disk: a button or similar.  
Diameter: 22 mm  
Weight: 4.3 g

### **Non-ferrous metalwork**

- A3.187 All Roman-period and Anglo-Saxon copper alloys were analysed by Andrea Hamilton and Lore Troalen using semi-quantitative surface X-ray fluorescence analysis; while this is affected by corrosion of the surface, it gives a good indication of the general alloy type. Some objects were also examined by scanning electron microscope; observations from this are incorporated in the descriptions. Technical observations made during conservation by Jennifer Jones are also incorporated in the descriptions, marked by her initials (JAJ). All dimensions are in millimetres. With finds not from a secure context, only those identifiable on typological grounds as likely to be medieval or earlier are included. Items coded 'MDF' for their context are metal-detecting finds. Illustrated items are marked with an asterisk.

### **Copper Alloy**

#### *Ornaments*

- A3.188 **SF 1 (Figure 66a)** *Context 1461=1273, Phase 5b: L 69 (with headloop), W 25, H 27mm.* Headstud brooch, with integral one-piece spring, separate headstud, foot and head loop; intact apart from recent damage. Plain flat bow with slight central channel; three steps on the arms; tang on foot (L 6, D 3mm) to hold a lost terminal, presumably similar to the headstud. This is separately riveted, with enamelled decoration of a central dot (?yellow) and surrounding ring of red; the edge of the stud has a bipartite moulding. The eight-coil spring has a rolled sheet cylindrical axis and an external chord held by a ribbed hook. The headloop is inserted into the spring, and clamped by a triple-ribbed collar (10.5 x 4.5 x 6mm). Later 1<sup>st</sup>-2<sup>nd</sup> century AD. Alloy: all components bronze with minor Pb and Zn, apart from the spring (gunmetal, minor lead); the headstud had a notably higher tin level. Enamels: high Pb levels for the red enamel indicate the colourant was a lead-rich cuprous oxide, while the enhanced Sb levels of the yellow suggest an antimonate colourant.
- A3.189 **SF 45 (Figure 66b)** *Context 361, Phase 3a: T 3.5-4; wire D about 0.8; surviving L 50mm. Diameter cannot be accurately estimated.* Three non-joining fragments of a twisted wire bangle, with copper alloy and iron strands (in a 5:1 ratio) in an S-spiral over an iron rod core (2.5mm D). No surviving terminals. Webster (2003, 322) notes that, although there are earlier antecedents, such twisted cable bracelets are predominantly a later Roman phenomenon, as at 4<sup>th</sup>-century Lankhills (Clarke 1979, 302-3, type A); Johns (1996, 118) mentions types which combine copper alloy and iron. Alloy: bronze (minor Pb); corrosion has obscured any differences between different wires.
- A3.190 **SF 91 (Figure 66e; Plate 6)** *Context 763, Phase 6: L 96, W 45.5, H 33mm.* Late Roman gilt copper alloy crossbow brooch of Keller's type 6 (Keller 1971, 52). Somewhat distorted; pin and left terminal knob lost, head knob damaged. The brooch is a complex composite construction with twelve separate components, two of which are now lost. The hollow hexagonal-section arms have integral triple-stepped mouldings butting the arch of the bow. The right end is capped with a ?separate collared hexagonal onion knob; its missing equivalent on the left end would have been removable, to fit the axis for the hinged pin. A third hollow-cast

knob is fitted to a spike on the head. The bow is high-arched, hollow and triangular in section, formed of a base plate and a separate ridge-piece; a separate beaded wire fits round the ridge where it curves to join the foot. This is a hollow-cast slightly oval cylinder which the pin would have slotted into; two symmetrical openwork plates are soldered to either side, with a plug in the end to hold them together. Each plate has two outward-facing knob-terminal lunulae flanked by a curved bar at the base and a notched square at the top (arch end). Traces of fine mineralised thread, possibly wool, by the pin hole (JAJ) may suggest an attempt to reuse the brooch, stitched to a fabric, perhaps specifically for its deposition because it was distorted and could not function normally. It was associated with the burial of a dog, and was perhaps a grave good, fastening a blanket or shroud.

- A3.191 The construction was as follows. The two parts of the bow were soldered together and slotted into the stepped moulding of the arms, with a fixing apparently bent through the hole for the pin. The head knob was slotted onto the spike, whose end was burred to retain it, and one knob (if separate) was soldered to the arm. The beaded wire was soldered into a groove near the base of the arch. The arch and openwork plates were soldered to the foot cylinder, with a small winged plug fitted into the end of the foot and along the ends of the plates, presumably to stabilise the construction. The (lost) pin was fitted into the cylinder of the foot, and its hinged end held by the lost knob, which would have had a screw-fitting (cf. Hattatt 1985, 135; Deppert-Lippitz 1995, Fig. 19). Alloy: leaded brass (minor Sn), mercury-gilded.
- A3.192 The type 6 crossbows, with their complex construction and openwork decoration, are some of the finest of the crossbow series; they are usefully discussed by Keller (1971, 52), Clarke (1979, 258, 261-3), Riha (1979, 169-171, 176-7), Pröttel (1988, 368-72), Bayley & Butcher (2004, 183-5), and most recently and most thoroughly by Swift (2000, 13-88), who would distinguish this as her type 6(ii). Pröttel's review of the dating gives a range of about 390-460 for type 6. This is consistent with the Quarry Farm brooch, which was deposited after some considerable use with a dog skeleton dated to AD 340-540 (2 sigma). This suggests the presence of a significant late Roman official in the vicinity, around or after the conventional end-date of the Roman occupation, although it must be cautioned that the brooch was rather battered when deposited, and may have come to the site late in its life.
- A3.193 Crossbows are characterised by their wide distribution and uniformity of style across large areas, with a strong concentration in frontier provinces; this particular type shows a stronger connection to the western Empire than others (Swift 2000, 70, figs. 12 & 83). Both Swift (2000, 70, figs. 84-5) and Bayley & Butcher (2004, 259) note that this type is less strongly linked to the *Limes* than other forms, although this example is markedly more northern than the other examples from Roman Britain. The type 6(ii) is found in both gilt copper alloy and gold, and Swift (2000, 81) suggests their rarity and less military distribution indicates these are much more status items than other forms of crossbows; this is reflected in examples found beyond the Empire, with two Scottish finds (Kent & Painter 1977, 28; Curle 1932, 370-1). Close parallels for the Quarry Farm find across the western Empire are listed by Swift (2000, 287).
- A3.194 **SF 93 (Figure 66c)** *Context 994, Phase 5d: Surviving L 126, W 1.5-2.5, D about 80mm.* Seven non-joining fragments of a bangle made from a loosely-twisted oval rod, hammered in places to create a sub-square section. The terminals are lost, but

the taper on one fragment and the flattening and slight upturn on another suggest there was probably a simple hook system. The twists are somewhat irregular, but are around 50mm long. A well-attested 4<sup>th</sup> century type; type B2 in the Lankhills classification (Clarke 1979, 303-4), type 15 at South Shields (Allason-Jones & Miket 1984, 128, nos 3.277-283). Alloy: bronze (high Sn).

- A3.195 **SF 166 (Figure 66d)** *MDF H, Unstratified Area I: Setting 14.5 x 12. L 29.5, W 16, H 21mm.* Finger ring, intact apart from gem, of Henig type II/Guiraud type 2e. The type dates from the later 1<sup>st</sup> to the early 3<sup>rd</sup> century; Guiraud suggests a later 2<sup>nd</sup> – early 3<sup>rd</sup> century date for this subtype (Henig 1978, 36, Figure 1; Guiraud 1988, 79). Oval, broad bezel, large shoulders, tapered D-sectioned hoop. Alloy: gunmetal (minor Pb). Finial SF 167 was stuck in the hoop of the ring (discussed below).

*Fittings*

- A3.196 **SF 3** *Context 491, Phase 3b: L 78, W 8, T 6mm.* Length of C-sectioned sheet edge binding, very fragmentary. A flat leather fragment (16 x 15 x 2mm) preserved in adjacent soil is not in direct association. Alloy: bronze.
- A3.197 **SF 42** *Context 668, Phase 6: 11.5 x 9.5 x about 0.5mm.* Slightly bent sheet fragment, no original edges. Alloy: low-tin bronze, with probable traces of a lead-tin solder on one side.
- A3.198 **SF 47 (Figure 67a)** *Context 1242, Phase 5a: H 21, D 16.5, shank D 4mm.* Flat disc-headed stud with circular-sectioned shank, the tip lost. Alloy: leaded bronze.
- A3.199 **SF 50 (Figure 67b)** *Context 1100, Phase 5a: Original L 51, W 4, T 1mm.* Fine, slightly tapered rectangular-sectioned strip, distorted, both ends lost. Unidentified – perhaps inlay? Alloy: bronze.
- A3.200 **SF 51 (Figure 67c)** *Context 1016, Phase 5b: 17.5 x 10 x 9.5mm.* Fragment of a bridge mount for a strap, perhaps a scabbard runner (cf. Bishop & Coulston 2006, Figure 78, 99; Allason-Jones & Miket 1984, no 3.644). A raised rectangular bar (to accommodate the strap) steps down into a fastening tang with a plano-convex section. Alloy: leaded bronze (minor Zn).
- A3.201 **SF 52** *Context 1242, Phase 5a: L 34, W 29, T about 0.3mm.* Sheet mount fragment, somewhat damaged and crumpled at one edge; one original straight edge, fine hammer-marks visible. The holes are corrosion effects. Alloy: bronze (minor Pb, Zn).
- A3.202 **SF 53 (Figure 67d)** *Context 1289, Phase 5a: L 52, W 16, T 0.3mm.* Sheet fragment with one original edge; slightly curved; bent at one end, perhaps from removal. All the holes appear to be corrosion effects. Alloy: bronze (minor Pb).
- A3.203 **SF 92 (Figure 67e)** *Context 1083, Phase 5a: 26 x 12, 16.5 x 12.5, T 0.3mm.* Two non-joining fragments of a sheet strip decorated with marginal lines of small embossed dots. The upper surface has polishing scratches. Original ends lost; slight bend at one end, perhaps from removal. The hole on one edge is due to corrosion. Alloy: bronze (minor Zn, Pb).
- A3.204 **SF 96** *Unstratified: Undiagnostic - need not be Roman, Rivet L 5, head D 3.5-5; mount L min 43, W 17, T about 0.6mm.* Two fragments of a sheet mount with the remains of a leather strap. Damage obscures details, but it seems to be rectangular

with rounded corners; a row of at least five solid rivets ran along each edge. Alloy: leaded bronze.

A3.205 **SF 139** *Context 491, Phase 3b: L 30, W 7, H 5, T 0.5mm.* U-shaped binding strip fragment (two non-joining fragments). Alloy: leaded bronze.

A3.206 **SF 167 (Figure 67f)** *MDF H, Unstratified Area I: H (excluding shank) 14, D 18, base D 10, shank W 5mm. Found stuck in the loop of finger ring SF 166.* Bell-shaped stud, the cylindrical base flaring into dished terminal with central knob. Remains of square-sectioned iron shank on underside. This well-attested type was a furniture decoration, probably from boxes (Allason-Jones & Miket 1984, 238-244; Allason-Jones & McKay 1985, 30-32). Alloy: leaded bronze (minor Zn).

#### *Vessels*

A3.207 **SF 72** *Context 668, Phase 6: Sheet T about 0.3mm.* Cauldron fragments. Nine non-joining fragments from a sheet vessel, comprising parts of a vertical seam (given the lack of curvature); thus most likely from the broad upper body section of a vertical-sided cauldron. The outer sheet preserves an original, slightly irregular edge about 5mm from the rivet line; the original edge of the inner sheet is lost. There are remains of a thin layer of leather, presumably caulking material, between the two sheets. The fragments represent at least 130mm of the seam, with rivets every 8-9mm; these are rolled sheet cylinders with the heads flattened and ends burred (shank D about 3mm). Only seam fragments are present, which indicates that this is waste material from recycling the vessel, the heavily-distorted seam being discarded when the rest of the sheet metal was reused. Alloy: bronze (minor Pb); rivet, bronze (high Sn, perhaps a corrosion effect; minor Pb).

A3.208 **SF 94 (Figure 67i)** *Context 1050, Phase 5a: L 124, handle section 25 x 3.5, terminal W 37.5mm.* Handle of a late Roman dipper or strainer. Straight-sided, with a flared end; rectangular section with slightly flanged edges, the upper surface slightly concave, the lower convex. Part of the horizontal rim survives (W 7.5mm), slightly thickened at the edge. The vessel was cast and then hammered to shape, with extensive hammer-marks on the underside to make the flanges and the expanded terminal; faint hammer-marks on the upper surface are largely polished away. Alloy: leaded bronze (minor Zn).

A3.209 These late Roman dippers and strainers (of later 3<sup>rd</sup>-4<sup>th</sup> century date) are significantly less common than the earlier, 1<sup>st</sup>-2<sup>nd</sup> century forms (Eggers 1951, types 160 and 161). Examples are known from hoards at Knaresborough (Yorks), Irchester (Northants), Burwell (Cambs) and from the hillfort of Traprain Law (E Lothian; Kennett 1968, 32-5, Figure 9; Gregory 1976, 74, Figure 5 no 15; Eggers 1966, Abb 41 no 4; Curle 1915, 196, Figure 44 no 6; Burley 1956, no 444; for Continental parallels, den Boesterd 1956, no 60).

#### *Working evidence*

A3.210 **SF 43** *Context 1007, Phase 5a: 25 x 23 x 9.5mm; T about 0.4mm.* Packet of folded sheet metal, probably prepared for recycling. Alignments suggest three separate pieces: 1, folded in half and then folded again; 2, with the ends folded under; 3, a single folded layer with the end rather crumpled. Alloy: one piece was brass (minor Pb).

A3.211 **SF 95 (Figure 67h)** *Context 1016, Phase 5b: 21.5 x 17.5 x 4.5mm.* Sub-circular flat piece of casting waste. Alloy: leaded bronze.

A3.212 **SF 168** *MDF AC, Unstratified - not necessarily Roman: 25 x 22 x 4mm.* Unidentified fragment. Two irregular parallel edges, other edges broken; the irregular surface suggests it may be casting waste. Lines (perhaps modelling lines) run in different directions on the two faces. Alloy: copper.

*Other/unidentified*

A3.213 **SF 69** *Context 1367, Phase 3b: 15.5 x 14.5, 13 x 7.5; T 0.8mm.* Two non-joining sheet fragments, somewhat curved, distorted and cracked; no original edges. Alloy: leaded bronze (minor Zn).

A3.214 **SF 97 (Figure 67g)** *Context 1245, Phase 3c: H 44, W 37.5, T 1.5mm.* Cast fragment preserving three sides of a ?hexagonal hollow tapering casting, distorted at the broad end (from removal?); no original edges. Square attachment hole (W 6mm) on one face. Perhaps a fitting or casing? Alloy: leaded bronze.

A3.215 **SF 114 (Figure 67j)** *Unstratified: L 51, wall T 1.5mm.* Cast funnel, both ends lost. Cylindrical tube flaring from 14.5 to 28mm diameter. Both surfaces have been polished after casting, the outer more carefully, with predominantly longitudinal scratches (and some diagonal and transverse). The interior has a slight longitudinal ridge, presumably from the core, and what seems to be a sub-square patch to repair a casting flaw (which did not affect the exterior). The one-piece construction and careful finish suggest this may be the bell of a musical instrument; the evidence of repair on the inner (non-visible) side would support this, as this would smooth the surface to ensure a better air flow. However, in its fragmentary condition and out of context, its date and function remain uncertain. Alloy: leaded gunmetal.

A3.216 **SF 169 (Figure 67k)** *MDF A, Unstratified Area I: L 32, W 23.5, T 2mm.* Flat animal figure – perhaps a post-medieval toy? Lacks head and legs; angular hump (or saddle) on back above front leg. Incised decoration on both sides: vertical stripes on body, circle or curve at hump, muscle scroll above front leg. The incised decoration initially suggested an Anglo-Saxon date, but no parallels have been found so far, and it seems rather more simplistically zoomorphic than would be normal; a post-medieval date is suspected, although parallels have yet to be located.

*The Bronze Age punch or chisel by Trevor Cowie*

A3.217 **SF 144 (Figure 67l)** *MDF AD, Unstratified: Length: 49.2mm; dimensions of shaft: 'business end' 6.8 x 6.4mm; mid-point 6.8 x 6.8mm; 'tang' 7.1 x 7.6mm. Weight: 10.1g.* Small, heavily corroded bar of high-tin bronze, tapering from the square-sectioned mid-point to a rectangular section which terminates in a flattish area (6.3 x 5.3mm), probably representing the working-face; it may have been modified by use, and might originally have tapered to a flatter chisel-like edge. The working-face apart, most of the original surface of the tapered portion is missing due to corrosion. The surface of the other end has survived better if patchily; the edge angles have been rounded off, resulting in a sub-square section. Although slightly thicker beyond the midpoint, this portion of the bar draws in at the end to form a blunt rounded tip, now corroded and missing the original surface but possibly without significant loss of the original outline. Some crosswise striations are visible under magnification on the area of intact surface just above the mid-point (around 20mm from the rounded end): their significance is uncertain but if this end of the tool

functioned as a tang and was set in an organic handle or knob, one explanation might be crosswise cleaning or polishing of the shaft at its junction with the handle.

- A3.218 The general form of this tool invites comparison with a range of small bronze punches and chisels known from Middle and Late Bronze Age contexts and usually interpreted as metalworker's tools. There is some variation in form, but typically such artefacts consist of square- to rectangular-sectioned bronze bars with one rounded and one flattened end, as in the Quarry Farm specimen. As noted above it is possible that the business-end of the punch from Quarry Farm has been modified by use and it may originally have tapered to a flatter chisel-like edge (though probably still intended for use as a punch rather than as a true 'cutting chisel'). As suggested by Coles (1964, 117), it is likely that the rounded ends would have been set into an organic handle or knob which would have received the hammer blows. Although corrosion might partly account for the high percentage of tin revealed by analysis the additional hardness resulting from high-tin composition might have had a functional advantage.
- A3.219 Close parallels can be found among the range of punches and chisels from the excavations at Traprain Law, East Lothian. Whilst from a tool of slightly more robust proportions, the Quarry Farm example compares reasonably well with Burley's (1956) catalogue numbers T14 and T15 (see also T24 & T26 which may represent broken fragments of a single punch).
- A3.220 The Quarry Farm specimen was found in the course of systematic detecting as part of a supervised archaeological project. It is therefore tempting to speculate whether further examples of these simple, relatively undistinguished tools – particularly if prone to corrosion - may be lying unrecognised among metal detectorists' boxes of 'scrap'.

*Medieval finds by Stuart Campbell*

- A3.221 **SF 170 (Figure 67m)** *MDF C, Unstratified: L 21, H 22.5, T 9, width of pin bar 9.5mm.* Cast copper alloy strap end buckle or strap loop bearing traces of heavy tinning. Some features of this object mitigate against it working as a simple buckle, not least the absence of a pin rest – although this may have been removed by corrosion – and the unusual thickness of the buckle which would have made it difficult to fasten. It is as likely that the object was part of a collection of ensuite strap loops and costume fittings designed in the same style as the main belt buckle and strap end fitting. Its general appearance, and the mouldings on the pin bar terminal, might suggest late Romanesque influence as much as mainstream European leanings, and a date of late 11<sup>th</sup> to 13<sup>th</sup> century seems appropriate.
- A3.222 **SF 171 (Figure 67n)** *MDF F, Unstratified: L 41.5, W at frame (external/internal) 15/10mm.* Cast copper alloy strap end buckle with an integral forked spacer, still tinned overall. These were intended to be attached to a belt or strap via sheet plates soldered to either face of the spacer; the design was widespread from the mid 14<sup>th</sup> until the early 15<sup>th</sup> century. Intriguingly this example has been cast as a blank with the slot for the pin gouged out of the metal after casting. This is unusual as other examples of the type invariably have this slot cast integrally. A logical explanation for this anomaly is that the mould was intended to do double duty, producing frames for the similar class of strap-ends with integral forked spacer plates which were in use throughout the 14<sup>th</sup> century. An almost identical example can be seen in Egan and Pritchard (1991, 141).



### **Silver**

- A3.223 **SF 64** *From MDF Z, Unstratified: 13 x 10.5 x 6mm.* Nodular casting debris. Alloy: silver, alloyed with gold and copper.
- A3.224 **SF 172 (Figure 68a)** *MDF I, Unstratified: L 21.5, W 16.5, H 12.5mm.* Roman silver finger ring, lentoid-sectioned hoop broken, minimal shoulders, gem lost. The oval bezel is mostly occupied by a large oval setting (16 x 13mm), the base roughened to hold the lost gem. Henig type V/Guiraud type 2d; 2<sup>nd</sup>-3<sup>rd</sup> century date (Henig 1978, Figure 1, 37-8; Guiraud 1988, 79).

### **Lead & pewter**

#### *Weights*

- A3.225 **SF 115 (Figure 68b)** *Part of MDF AL, Unstratified: H 35 (excluding hook), D 41-42; hook L 18, W 3mm; m 281.3g.* Squat acorn-shaped weight, the tip flattened and upper surface slightly rounded, with a squashed iron suspension hook embedded centrally.
- A3.226 **SF 116 (Figure 68c)** *Part of MDF AL, Unstratified: H 45 (with iron), 39 (lead only); D 33-34; iron W 2-3mm; m 120.5g.* Biconical weight, with broken iron suspension loops at both ends. The ends of the loops protrude from the side, suggesting they were formed from a coil of iron.
- A3.227 **SF 121 (Figure 68d)** *Context 719, Phase 5a: H 33 (35.5 with iron), D 38.5-40; iron rod D 4mm; m 195.4g.* Biconical weight, one end near-hemispherical, the other slightly extended into a truncated cone; remains of broken iron loops at both ends.
- A3.228 **SF 122 (Figure 68e)** *Part of MDF AA, Unstratified: H 39.5 (48.5 with iron), D 44-46mm; m 303.5g.* Biconical weight with broken iron loop at one end.
- A3.229 **SF 159 (Figure 68g)** *Part of MDF AD, Unstratified: 40 x 26 x 4.5mm, 15.9g.* Weight; flat, kite-shaped with perforated expanded sub-circular head for suspension at narrow tip. Incomplete (recent damage).

#### *Repairs and patches*

- A3.230 **SF 118 (Figure 68f)** *Context 668, Phase 6: 89 x 60 x 6mm; m 144.7g.* Oval object, slightly plano-convex in section, the rounded side uneven from casting. Part of edge lost. Two cylindrical perforations (D 6-8mm; pierced from rounded face), near centre of long edge and corner; two indents on the rounded surface, near the ends, suggest other attempts at perforations. Probably a patch.
- A3.231 **SF 158 (Figure 68h)** *Context 751, Phase 6: L 53, W 12, T 7; cups D 38, T 11mm.* Patch, with central bar terminating in perpendicular conical cups, one now detached. This would be cast *in situ*, to repair an object about 14mm thick.
- A3.232 **SF 173 (Figure 68i)** *Context 273, Phase 5a: L (bent) 19, shank 3-6, head 8 x 7mm; repaired object 11mm thick.* Rivet with irregular flat head tapering into irregular cylindrical body; turned through 90° into a fine regular tip. Probably cast *in situ* (e.g. to repair a pot), leading to the irregularity, with the exterior parts better finished.
- A3.233 **SF 174 (Figure 68j)** *Context 534, Phase 7: L 22, W 13, T 5.5mm.* Sheet fragment, one end flared to an irregular edge, the other lifted and curled into a C-shape. Perhaps an expedient patch.

- A3.234 **SF 175** *MDF X, Unstratified - could be Roman: H 10, D 13 x 14.5mm.* Dumb-bell shaped repair plug.
- A3.235 **SF 176** *MDF AD, Unstratified - could be Roman: 40 x 36 x 7.5mm.* Cast patch? Sub-circular flanged fragment, probably cast into a hole.
- A3.236 **SF 177 (Figure 68k)** *MDF AK, Unstratified: 22.5 x 14.5 x H 10.5mm.* Patch fragment. Elongated flat head, raised at one end, other broken, with a tang on the underside, the end turned to retain a material 5mm thick. Its irregularity implies it was cast *in situ*.
- A3.237 **SF 178** *MDF AK, Unstratified: 18.5 x 9 x T 5mm.* Patch; rectangular strip with two fairly irregular blunt tangs on the underside, their form indicating it was cast *in situ* into the holes.

*Other artefacts*

- A3.238 **SF 179 (Figure 68l)** *MDF G, Unstratified: D 28.5, perforation D 12, H 10mm, m 40.56g.* Annular whorl, D-sectioned, with cylindrical perforation and very worn decoration comprising alternating recessed equilateral triangles round the margin of each face. Medieval.

*Rolled strip cylinders*

- A3.239 Four cylinders formed from small rolls or coils were recovered from contexts, three from Phase 3 and one Phase 5; a further seventeen (catalogued in the archive) came from metal-detecting. With the exception of two larger ones (weighing 16.5 and 44.2 g), they form a consistent group, weighing 2.92-7.69 g with an average of 5.76 g; there is no clustering around particular values. They could be small weights, perhaps sewn into an organic medium to hold it down, or represent a convenient way of storing small quantities of lead. The contexted examples (described below) point to a Romano-British date; for a parallel, cf. Carmarthen (James 2003, 341-2, Figure 8.13 no 10).
- A3.240 **SF 182 (Figure 68n)** *Context 121, Phase 3d: L 18.5, D 9, sheet T 1.5mm; mass 5.61g.* Rolled-strip cylinder (single turn).
- A3.241 **SF 183** *Context 223, Phase 3a: L 15mm, D 7 x 8.5mm, sheet T 0.5-1mm, mass 3.79g.* Slightly irregular tightly-coiled strip of fine sheet (about 2 turns).
- A3.242 **SF 184 (Figure 68o)** *Context 352, Phase 5c: L 23, D 9 x 10, sheet T 2mm; mass 7.69g.* Rolled-strip cylinder, coiled in a spiral of 1.5 turns.
- A3.243 **SF 185 (Figure 68p)** *Context 1168, Phase 3a: L 33.5, D 11 x 13, sheet T 2.5mm; mass 16.50g.* Rolled-strip cylinder with butted edges.
- Working evidence / molten waste*
- A3.244 **SF 4** *Context 491. Phase 3b: 26.5 x 15.5 x 5.5mm.* Casting waste? Flat, rounded fragment.
- A3.245 **SF 119 (Figure 68m)** *Context 668, Phase 6: W 46, L 42, T 8.5mm.* Discoidal or oval ?ingot, broken; plano-convex section, the rounded side roughened from casting.

- A3.246 **SF 180** *Context 286b, Phase 4: 14.5 x 13 x 6.5mm.* Offcut from plano-convex bar, chopped at both ends.
- A3.247 **SF 181 (Figure 68q)** *Unstratified: L 64.5, W 10, H 9mm; mass 34.90g.* Bar ingot, boat-shaped with angular D-section, broadest at the top. The original end is slightly angled to ease removal from the mould; the other has been chopped off. Analysis indicated this was a pewter with a lead : tin ratio of around 1:1.
- A3.248 In addition, metal-detecting produced 16 pieces of nodular casting waste and two offcuts. None is demonstrably Roman, but it seems likely they relate to the working (or accidental melting) of lead on the site, and given the relative lack of medieval material a Roman date is likely.

*Unidentified*

- A3.249 **SF 117** *Context 877, Phase 3b: Largest fragment 29 x 17.5 x 5mm.* Ten non-joining, heavily-corroded fragments. Original form unclear; only one curved edge is original.
- A3.250 **SF 120** *Context 668, Phase 6: L 28, W 18, T 1.5-2mm.* Flat strip, both ends broken; remains of oval perforation (3 x min 7mm) at one end.
- A3.251 **SF 186** *Context 286a, Phase 4: 32 x 18 x 11mm.* Amorphous fragment.

**Ferrous metalwork (excluding the hoard)**

**Tools**

*Knives (types refer to Manning 1985a, 108-120)*

- A3.252 **SF 44** *Context 672, Phase 5d: L 51.5; tang L 22.5; blade H 9, T 2.5mm.* Fragment of a small knife. Unusual broad, tapering tang with blunt end, which expands directly into a parallel-sided broken blade; slight step at blade/tang junction on one face.
- A3.253 **SF 46 (Figure 69a)** *Context 233, Phase 5d: L 56, H 19, T 4mm.* Fragment of a fine knife with an oval iron hilt plate (18 x 10mm). Near-parallel blade, with straight back and slowly-tapering edge; tip lost. Central rectangular-sectioned tang (section 6 x 3mm); most of handle lost.
- A3.254 **SF 104 (Figure 69b)** *Context 1242, Phase 5a: L 126; tang L 50, section 9 x 4.5; blade L 76, W 4.5, H 34mm.* Intact knife (type 11a). Tang aligned on back, angled slightly downwards; convex blade, with edge stepping down square from tang; slightly upturned tip. Traces of mineralised hardwood on the tang, probably from the handle, and discontinuous leather traces on the surface, probably from a sheath (JAJ).
- A3.255 **SF 109 (Figure 69c)** *Context 994 (found with SF 110, 111), Phase 5d: L 134 (including handle); tang L 43 x 8 x 3, blade L 83, H 32.5, T 3; handle D 17 x 15mm.* Intact knife (type 11a) with a broad triangular blade, the cutting edge convex. Tang aligned on the back and slightly angled down, tapering to a rounded tip, with remains of a cylindrical handle, probably of antler, squared at the end.
- A3.256 **SF 135 (Figure 69d)** *Context 660, Phase 5d: L 111, H 27, tang L 84 x 6.5 x 5mm.* Knife fragment, the rectangular-sectioned tang aligned on the straight back with a step down to the edge, which is parallel to the back over its short surviving length; it

has broken recently. The end of the tang is flattened and curled horizontally into a flattened loop to retain the handle.

- A3.257 **SF 146 (Figure 69e)** *Context 668, Phase 6: L 54, W 21, T 4mm.* Knife blade, the tang lost; crescentic blade with straight back and rounded tip, the tang apparently aligned on the back. Its crescentic shape suggests a role in leather-working.

*Craft tools*

- A3.258 **SF 110 (Figure 69g)** *Context 994, Phase 5d: L 92, tang W 7.5, shank 5.5 x 6, tip D 2.5; handle D 18mm.* Awl. Square-sectioned shank tapering to a round section and a fine, slightly damaged, asymmetrical tip; the tang tapers slightly to a squared end, with remains of a wooden cylindrical handle with a squared end, part of the original surface surviving; identified (JAJ) as a diffuse porous hardwood, possibly a fruitwood.

- A3.259 **SF 124 (Figure 69k)** *Context 236, Phase 5d: L 220, shank 14 x 16 (head), 11 x 18 (by tip); head L 41, W 18, H 16mm.* T-headed mortice chisel with sturdy rectangular-sectioned shaft, the end broadened and tapered into a wedge-shaped tip, asymmetrical in profile. T-shaped head with stubby squared arms, the long edges slightly bowed from striking. The sides have a crescentic channel, carried slightly onto the shank on one side, perhaps a decorative feature. The lack of heavy burring suggests use with a wooden mallet; the weight of the chisel and the heavy head suggest it is most likely for masonry rather than wood.

- A3.260 **SF 141 (Figure 69f)** *Context 3, Phase 6: L 53, shank 4-7, head 10mm.* Punch. Tapering square-sectioned bar with slightly expanded, burred head; tip damaged, probably from corrosion. Probably for metal-working, its shortness implying it was for cold-working non-ferrous metals.

- A3.261 **SF 145 (Figure 69i)** *Context 668, Phase 6: L 38, W 3mm.* Point, probably an awl. Short square-sectioned fine shank, slightly curved, tapering to a fine pyramidal tip at one end, the tang end rounded. Its fineness suggests it was a leather-working tool, probably an awl.

- A3.262 **SF 148 (Figure 69j)** *Context 747, Phase 5a: L 55, W 15, T 11mm.* Fine chisel, the head slightly burred and damaged, the tip symmetrical.

*Agriculture*

- A3.263 **SF 99 (Figure 69h)** *Context 1245, Phase 3c: H 38.5m,* Ox goad with solid point, curving slightly forwards (tip lost; L 27, section 3.5 x 4.5mm). The base is flattened into tapering wings (11.5mm H), folded round to form a penannular loop (externally 21 x 19mm); an apparent flange down the side and at the base is a corrosion effect. H 38.5mm.

- A3.264 **SF 106 (Figure 69m)** *Context 220, Phase 5b: L 147, W 45, T 6.5mm.* Scythe fragment with characteristic thick-backed L-shaped section, the curve indicating it comes from near the handle; ends broken.

*Other*

- A3.265 **SF 49 (Figure 69l)** *Context 747, Phase 5a: L 93, W 20, T 8mm.* Tool fragment. Tapering rectangular-sectioned bar curving to a rounded and damaged tip; probably from a tool such as a small pick, broken in use.

A3.266 **SF 105 (Figure 69n)** *Context 3, Phase 6: L 88.5; tang L 33.5, section 5 x 2; point L 55, D 5.5mm.* Stylus; a simple form (Manning 1985a, 85, type 1), comprising a circular-sectioned rod, bent from recent damage, slightly swollen in the centre, with a blunt tip at one end and a flat shoulder-less eraser at the other.

#### **Weapons**

A3.267 **SF 18 (Figure 70a)** *Context 695, Phase 5b: L 70.5; blade L 40, W 14; socket L 30.5, D 7.5 (internal D 5mm).* Leaf-shaped socketed arrowhead with blunt tip (flattened from damage) and closed, slightly damaged socket with traces of mineralised wood.

#### **Domestic**

A3.268 **SF 65 (Figure 70b)** *Context 10, Phase 6: L 151, W 16.5, T (bar) 4mm.* Padlock key. Slightly tapered rectangular-sectioned bar, turned at one end into a suspension loop (D 13.5mm); the other end curves through 90°, with the remains of a perforation in the plate. Cf. Manning 1985a, 96-7.

A3.269 **SF 113a (Figure 70c)** *Context 668, Phase 6: L 73.5; arm L 24, W 14.5; bar 7 x 4; barbs surviving L 22.5mm.* Bolt of a barb-spring padlock. Fine bar with rounded barbed tip (the barbs clear on X-ray but mostly lost subsequently). The bar steps into a thicker L-shaped terminal, perforated on both arms; that on the long side is countersunk on the inner face; the other, positioned very close to the angle, is countersunk on the outer face, and would have held the tang of the padlock.

A3.270 **SF 128 (Figure 70e)** *Context 1399, Phase 4: L 15; head D 21, H 23; shank W 10-17, T 4; prongs W 4.5, T 3mm.* Padlock key. Tapered flat bar, the narrower end turned into a carrying loop with out-turned spiral terminal, the broader turned through 90° with a broken perforated end. Cf. Manning 1985a, 96-7.

#### **Fittings**

A3.271 **SF 1 (Figure 70d)** *Context 668, Phase 6: Loop D 29 (internal 19.5), L 71mm.* Double-spiked loop, the everted ends giving a wood thickness of c. 38mm.

A3.272 **SF 7 (Figure 70f)** *Context 236, Phase 5d: L 151, W 44, T 5mm.* Strapping / fitting fragment. Heavy rectangular-sectioned bar, tapering to the tip, which is rounded and slightly expanded with a square perforation (W 6mm); other end broken.

A3.273 **SF 13 (Figure 70g)** *Context 545, Phase 5c: Original L 235mm, shank W 10mm, arms L 62mm.* T-clamp; one arm damaged, shaft bent in two places.

A3.274 **SF 17 (Figure 70h)** *Context 805, Phase 3c: L 52, body 10 x 3, H 16.5mm.* Joiner's dog, lacking one arm, the other clenched and the tip twisted, giving a wood thickness of 10mm. Rectangular-sectioned body, swollen in the centre.

A3.275 **SF 37 (Figure 70i)** *Context 1090, Phase 5a: L 325; tang W 12 (square), 13-14 x 6-9 (rectangular); loop external D 99, internal 78mm.* Large loop-headed fitting. The broken square-sectioned tang flattens into a rectangular section as it forms a penannular loop with an open spiral terminal (internal D 5mm).

A3.276 **SF 38** *Context 1202, Phase 3d: L 75, W 8.5, H 21 (body and arms 8.5 x 4mm).* Joiner's dog, distorted; one arm lost, other broken.

- A3.277 **SF 48 (Figure 71a)** *MDF, Unstratified: H 84, W 52mm.* Hook with transverse circular suspension eye (D internal 9.5, external 17.5mm); rectangular-sectioned body (8 x 4mm), becoming rounder as it curves towards lost tip.
- A3.278 **SF 67 (Figure 71b)** *Ex MDF 2, Unstratified: Body section 6 x 10.5, arm section 3.5 x 11; L 52.5mm.* Joiner's dog, body swollen in centre; one arm lost, other incomplete. There is a cut-mark at the arm-body junction from attempts to detach the fitting.
- A3.279 **SF 68 (Figure 71e)** *Context 719, Phase 5a: L 153, disc D 47mm.* Terminal of a heavy fitting, perhaps a large handle. Slightly curving rectangular-sectioned bar (17 x 9mm), one end cut off, the other flattened into an irregular disc which tapers to a spike. The disc is crudely pierced with a central square nail hole (partly corroded; originally 9 x 10.5mm). The bar-disc junction on the inside is slightly stepped to fit snugly to a wooden object.
- A3.280 **SF 70 (Figure 71c)** *Context 1083, Phase 5a: L 67, W 21, section 13.5 x 5 and 9 x 4.5mm.* Fragmentary rectangular loop with rounded ends, probably a clamp. Rectangular section, one face broader than the other.
- A3.281 **SF 98 (Figure 71d)** *Context 1245, Phase 3c: 50 x 23 x 3.5mm.* Flat bar fragment, slightly curved along its length, no original ends. Strapping?
- A3.282 **SF 103 (Figure 71f)** *Context 1245, Phase 3c: 23 x 21 x 2mm.* Irregular pentagonal washer with near-central perforation (D 6mm).
- A3.283 **SF 107 (Figure 71g)** *Context 1100, Phase 5a: L 52.5, W 27.5mm.* Terminal of a fitting, possibly a handle. Rectangular-sectioned bar (16 x 7.5mm), the upper face slightly rounded. Discoid terminal, thinned on one face to fit better against the wood, with a central sub-circular perforation (D 8mm); spare metal from piercing is flattened against the inside face.
- A3.284 **SF 127 (Figure 71j)** *Context 720, Phase 6: L 165; loop D 113, section 16 x 6-8; shank 16 x 10mm at fracture.* Looped fitting, with large closed rectangular-sectioned loop and tapering shank, the end apparently cut off. Weld line visible at head-shank junction.
- A3.285 **SF 129 (Figure 71h)** *Context 747, Phase 5a: L 34, head 17 x 16.5, T 2; sub-circular perforation 5 x 6; bar W 11mm.* Flat bar with expanded, rather irregular, perforated terminal, the end squared and the shank broken.
- A3.286 **SF 130 (Figure 71i)** *Context 747, Phase 5a: Flange D 48.5, W 10, T 3-5.5; cylinder H 29, internal D 30-33, external D 40mm.* Flanged cylinder, the rim everted and squared. The external cylinder surface bears circumferential ribs, the lower ones rounded, the upper more angular. Details are unclear as it is only partly cleaned, but the ribs appear irregular, with five in one area and six in another. This suggests they are functional rather than decorative, probably to retain the collar within an organic pipe.
- A3.287 **SF 136** *Context 660, Phase 5d: L 41, W 10-11, T 3mm.* Fitting. Fine plano-convex bar, both ends broken.

- A3.288 **SF 150** *Context 747, Phase 5a: L 37.5, W 8, T 4mm.* Flattened loop fitting? Bar with wedge-shaped tip, bifurcating into two oval-sectioned arms; these are broken, but probably represent a squashed loop.
- A3.289 **SF 155 (Figure 72a)** *Context 720, Phase 6: L 340, original L 690, bar W 37, T 6; disc terminal W 53, other terminal W 55; perforation W 10mm.* Bar fitting, intact but bent back on itself, one end curved outwards and slightly distorted. One end has a disc terminal with a central square perforation; the other is slightly expanded with a rounded tip.
- A3.290 **SF 156 (Figure 72b)** *Context 720, Phase 6: L 430, bar (head) 39 x 7, arms W 27, terminals W 39; perforation W 7. Nail L 58, shank 8, head 14; set in wood about 46mm thick.* Large U-shaped staple, its symmetry implying this is its original shape. Formed from a rectangular bar, the arms tapering with expanded perforated disc terminals; there are also opposed perforations some 150-170mm from the ends, one with a bent nail still *in situ*. This implies it had been removed, although there are wood traces at the terminals and intermittently up the arms as far as the second perforation. The head of the staple is angled at c. 45°, presumably to fit over something.
- A3.291 **SF 157 (Figure 72c)** *Context 720, Phase 6: Original L 540, W 29-34, T 9-10.5mm.* Plano-convex bar bent back on itself, one end cut square, the other with a rounded tip, slightly flattened from damage. The tip indicates this is not a damaged tyre; function uncertain.
- A3.292 **SF 164 (Figure 71k)** *Context 751, Phase 6: L 32, W 12, T 3, loop L 16mm.* Handle terminal; slightly curved flat bar fragment, one end lost in recent break, the other looped into an S.
- A3.293 **SF 187 (Figure 73a)** *Context F301 hot room, Phase 3a: L 93, shank W 8, head 55 x 15mm.* T-clamp, tip lost, arms with rounded ends.
- A3.294 **SF 188 (Figure 73b)** *Context F301 hot room, Phase 3a: L 85, shank W 6.5, head 26 x 12mm.* Small T-clamp with thin rectangular head.
- A3.295 **SF 189 (Figure 71l)** *Context 732, Phase 3b: L 100; links L 49, W 28.5, rod D 3.5-4mm.* Three joined chain links, each a figure-of-eight, not quite touching in the centre.

### **Nails, tacks and hobnails**

- A3.296 The majority of nails are fragmentary, with only 16 intact examples. Intact lengths range from 40-78.5mm (average 56.5mm), heads measure from 6-27mm in width (average 14.5) and 2-4mm in thickness, while shank widths range from 3-8.5mm (average 5.5mm).
- A3.297 Romano-British nails are categorised by their shape and size; the wide range of sizes reflects variation in function, although most fall into the 40-70mm length range. The majority of the Quarry Farm assemblage conforms to this type, Manning's Group 1B (or Inchtuthil type E; 1985a, 134; 1985b, 289). Manning suggests these were used to attach cladding to structural frames, and were present in great quantities where timber buildings were used (as at Inchtuthil; Manning 1985b, 291).

The small number of iron nails from Quarry Farm suggests timber was not heavily used for structural elements at the site. While this is consistent with the number of stone buildings, the quantities are still surprisingly small, as discussed below.

- A3.298 The very small proportion of large nails (3 examples) over 70mm in length is typical, as these were more likely to be removed and reused (Manning 1985a, 134-5) and are often under-represented in the archaeological record. 22 fragments are bent, including over 60% (12) of the intact examples. The majority are curved and distorted as the result of use or removal, but three examples were clenched, indicating they were discarded while in the timber.
- A3.299 The finds were recovered from 30 contexts across the site from Phase 3 to 6, the majority relating to Romano-British activity. All appear to be in secondary contexts, with a scatter from ditch fills, drains, ovens and wall footings. The majority (22) were recovered from pit and posthole features relating to Phase 3 and 5. There are few marked concentrations, but seven were recovered from a Phase 3 pit fill (context 882), four from the wall footing of a structure of the same period (context 268), four from a gully fill (context 747) and four from a pit fill (context 330) relating to Phase 5 activity.

#### *Other nails*

- A3.300 Although dominated by group 1B nails, some less common nail types are also present. These have been catalogued separately below. Two (SF 111 & 123) are small T-headed nails and one (SF 126) has a flattened triangular-shaped head with marked shoulders; both were also used in timberwork. One (SF 53.2) is a small tack probably used in upholstery (Manning 1985a, 135).
- A3.301 **SF 53.2** *Context 1289, Phase 3c: L 20, head 3, shank 2mm.* Intact tack, Manning type 8 (1985a, 135).
- A3.302 **SF 111 (Figure 73c)** *Context 994, Phase 5c: L 41, head 16 x 9 x 3, shank W 7mm.* T-headed nail, the tip lost, one arm much shorter than the other. Manning type 3 (1985a, 135).
- A3.303 **SF 123 (Figure 73d)** *Context 1245, Phase 3c: L 37, shank 7.5-13 x 6-8, head 19 x 7.5mm.* T-headed nail with rectangular-sectioned shank, the tip and part of one arm lost; channel from forging on one side. Manning type 3 (1985a, 135).
- A3.304 **SF 126 (Figure 73e)** *Context 1090, Phase 5a: L 82, head 18 x 13 x 8.5; shank W 9mm.* Complete nail with expanded angular head (a truncated triangle in form); conforms to Manning type 2 (1985a, 135, fig. 32.2). The top of the head has been flattened by hammering. Shank has a sinuous double-bend, suggesting removal; tip lost.

#### **Hobnails**

- A3.305 *Context 641, Phase 3d: Dome-headed; typical L 10-14mm, dome D 7.5-11mm, shank D 2mm.* Only eleven hobnails were recovered. These derived from one context within the fill of a ditch, corroded together in small groups with organic traces, implying that they were still in a shoe sole when deposited.



### **Blacksmithing evidence**

- A3.306 **SF 44.2** *Context 672, Phase 5d: L 50, D 4.5 x 5mm.* Twisted oval-sectioned rod, one end flattened, the other broken. Perhaps an offcut.
- A3.307 **SF 100** *Context 1245, Phase 3c: L 60.5, W 9, T 7.5mm.* Twisted bar fragment, broken at both ends. The twist is rather irregular and thin in places, suggesting it is an offcut which was twisted to remove it.
- A3.308 **SF 102** *Context 1245, Phase 3c: 29 x 13 x 9.5mm.* Fragment of waste iron from blacksmithing, contorted and irregular with surface porosity.
- A3.309 **SF 125 (Figure 73f)** *Context 668, Phase 6: Overall 51 x 41 x 24; bar W 16-38, T 4, total L 256mm.* Recycled bar, folded into a square packet with five folds. One end of the broad, flat bar is slightly tapered and tucked under; at about half its length, it continues at half width, with a strip apparently cut from one edge; this end is also tucked under.
- A3.310 **SF 131 (Figure 73g)** *Context 747, Phase 5a: W 28, L 29.5, T 6, notch 5 x min 7mm.* Offcut from a bar with a perforation or off-centre notch on the cut edge.
- A3.311 **SF 132 (Figure 73h)** *Context 747, Phase 5a: L 54, W 22-23 (arms), 29 (overall), T 3.5; perforations 5 x 6.5, 5 x min 7mm.* Offcut from repair or reuse of an object. L-shaped bar, cut at both ends and bent, with the corner thinned and damaged. Cut across a perforation on the longer arm, with a second towards the corner, offset to the long edge. Probably from the same object as SF 131.
- A3.312 **SF 138 (Figure 73i)** *Context 882, Phase 3c: H 38.5, W 36.5, bar T 12mm.* Offcut from hooked handle terminal, with an angled cut to detach it. Flat, rectangular-sectioned bar, thickening and curving to form a hook with thinned and out-turned tip. Probably discarded following reuse of the flat bar portion.
- A3.313 **SF 143** *Context 1007, Phase 5a: L 30, W 19-24, T 12.5mm.* Offcut from the end of a squared bar.
- A3.314 **SF 147** *Context 747, Phase 5a: L 56, W 35, T 15 (bar T 6mm).* Offcut. Folded bar fragment, one end cut, the other squared by folding under the tip and flattening.
- A3.315 **SF 149 (Figure 73j)** *Context 747, Phase 5a: 45 x 17 x 19mm.* Offcut from the end of a square-sectioned bar, one end rounded and irregular, the other cut.
- A3.316 **SF 151 (Figure 73k)** *Context 668, Phase 6: L 49, W 30, T 3.5-4; perf 12mm.* Offcut from a bucket mount; rectangular bar with the end perforated and expanded from wear; transverse cut marks from unsuccessful detachment at cut end.
- A3.317 **SF 152** *Context 668, Phase 6: W 35-39, L 37.5, T 3.5-4mm.* Offcut from slightly flared bar; cut across a perforation (W 7.5).
- A3.318 **SF 153** *Context 668, Phase 6: L 32, W 15, T 7mm.* ?Offcut from tool, with diamond-sectioned ?tang curved into a thick ?blade, cut at an angle.

## **The metalwork hoard**

### **Wood-working tools**

- A3.319 **SF 112.1 (Figure 74a)** *L 213; hammer L 43 x 23 x 18; socket D 19, H 36, wedge L 26; blade L 140, W 64mm.* Adze-hammer (Manning 1985a, 17-18). Circular shaft-hole with cylindrical socket on underside; the upper side of the perforation has two opposed marks, perhaps from welds during manufacture. Short, sub-square hammer with a slight dish on the underside, the face lost to corrosion. The broad adze blade has a slight concave curve, and ends in a symmetrical edge with no sign of damage. There is no wood in the socket.
- A3.320 **SF 112.2 (Figure 74b)** *D 92-95, disc T max 11; collar D 45, H 25; perforation D 19 (oval 21 x 25mm).* Discoidal adze? Disc, slightly curved in section, with collared socket at the edge. The disc has a thick, slightly rounded edge near the socket but tapers to a much finer edge around half of its circumference, suggesting it was a blade; its form would be appropriate for a specialist hollowing tool. The collar protrudes slightly beyond the line of the disc. The tapering perforation is angled slightly off the perpendicular, and is circular on the collar side and oval on the other; the collar is also angled slightly to the disc, indicating the handle was at an angle. The interpretation is based on the visible features; no parallels have yet been found.
- A3.321 **SF 112.3 (Figure 74c)** *L 140, W 14, H 26; blade T 6-10; tang L 22mm.* Carpenter's float, the wide spacing of the teeth typical for use on wood (Manning 1985a, 28-9; there is a close parallel from Beadlem (Neal 1996, Fig. 40)). Rectangular-sectioned blade with slightly rounded tip, perhaps damaged in one area. The blade carries 22 symmetrical teeth, slightly rounded as they survive, spaced at 2.1 cm<sup>-1</sup> (counted from the X-ray, as the surface was not fully cleaned). The teeth start some 10mm from the tip and finish where the tang steps up into the offset handle. The tang was short, with a squared end; remains of a cylindrical wooden handle survive, identified as a ring-porous hardwood, probably ash (JAJ).
- A3.322 **SF 112.4 (Figure 74d)** *L 148; blade W 14-21, T 6; tang max 11 x 6mm.* Paring chisel. The tapering rectangular-sectioned tang with pointed tip has traces of a handle of a semi-ring-porous hard wood, possibly alder (JAJ). The tang expands gradually into the blade with a slight shoulder; it ends in a very slightly curved edge, symmetrical in section. Its relatively light construction, handle and splayed edge identify this as a paring chisel (Manning 1985a, 21-2).
- A3.323 **SF 112.5 (Figure 74e)** *L 106; tang L c. 30, section 7 x 7.5; blade W 15.5, H 10.5mm.* Spoon-bit (Manning 1985a, 26), the broken oval-sectioned tang expanding into a long blade with a deep U-section, the tip lost to corrosion.
- A3.324 **SF 112.6 (Figure 74f; Plate 9)** *L 66; tang L 47, W 7; blade W 50mm.* Cooper's croze, with square-sectioned central tang and crescentic blade, the ends rounded off. The outer edge has a series of V-shaped teeth (probably eighteen, giving a density of 3cm<sup>-1</sup>); they are c. 2mm in height and width. Discolouration of the tang suggests a lost wooden handle. There are areas of individual fibres on the blade, but with no evidence of twisting (JAJ). For the type see Hedges & Wait 1987; Salaman 1975, 319-321, Fig. 235b.
- A3.325 **SF 112.7 (Figure 74h)** *L 77; tang L 53, W 9; blade W 55.5mm.* Cooper's croze, the tang tip spalled and the teeth in poor condition. Square-sectioned tang, tapering in

thickness as it joins the blade. A series of triangular teeth, probably originally eighteen, line the outer curve. No trace of a handle.

A3.326 **SF 112.8 (Figure 74i)** *L 84, W 8, T 6mm*. Bradawl? The rectangular-sectioned bar tapers to the (slightly spalled) squared tang and tip, which tapers and thins to a rounded point; the other end is lost. No surviving handle traces. See Manning 1985a, 28, although this example is rather smaller.

A3.327 **SF 112.9 (Figure 75a)** *L 176, shank W 8, tip 7.5 x 3.5mm*. Bradawl? Slightly tapered square-sectioned tang with irregularly squared end and remains of a bone handle. The square-sectioned shank tapers and thins gradually to the rounded spatulate tip. It lacks a sharp edge as it survives, but resembles a bradawl; the handle of bone rather than wood argues against it being an auger, unless the bone was a collar which slotted into a wooden cross-piece.

#### **Leather-working tools**

A3.328 **SF 112.10 (Figure 75b)** *L 39 (47 with handle), D 4*. Small awl, circular section, tapering to fine point, the tang tapering to a squared end. Remains of a wooden handle (species unidentifiable) cover the last 12mm of the tang and extend a little beyond. The fine point suggests this is a leatherworker's awl rather than a woodworker's bradawl (Manning 1985a, 28, 39-41).

A3.329 **SF 112.11 (Figure 75c)** *L 100, D 8.5, max W 13, tip D 6.5 x 8mm*. Circular punch, the square-sectioned tang with remains of a handle of diffuse porous hardwood, possibly fruitwood (JAJ). The tang expands into a sub-circular shank, flattened into a kite-shaped end which was curled tightly into a slightly closed C-shaped tip, forming about two-thirds of a circle and thinned to the cutting edge. Manning (1985a, 42) discusses this type, although the examples he illustrates have solid shanks; they were used to cut discs out of leather.

A3.330 **SF 112.12 (Figure 75d)** *L 133, surviving handle L 30, shank W 4.5-7.5mm*. Large awl or punch? Square-sectioned tang, tapering to squared end, with traces of a wooden handle (species unidentifiable); the sub-circular shank tapers to the tip, its very end lost, which inhibits identification. It seems too large for a bradawl, suggesting it was an awl or punch used with hand pressure (and thus most likely for leather-working).

A3.331 **SF 112.13 (Figure 75e)** *L 117, tang W 9, shank W 5-8.5mm*. Large awl or punch? The tapered square-sectioned shank becomes circular in section towards the lost tip; end of tapered square-sectioned tang also lost. Remains of a wooden handle of ring porous hardwood, possibly ash (JAJ) cover 46mm of the tang. It is very similar to 12.

#### **Metal-working tools**

A3.332 **SF 112.14 (Figure 75f)** *L 222, W 20, H 10, tang c. 8 x 6mm*. Flat file (Gaitsch 1980, 54-6). Blunt, rectangular-sectioned tang (with traces of a cylindrical bone handle, D 21mm), expanding smoothly into a rectangular-sectioned body, which tapers gradually to the lost tip. The form is that of a file, although no traces of teeth survive.

A3.333 **SF 112.15 (Figure 75g)** *L 220; tang L 33, W 9; blade W 20, T 4-9 mm*. Half-round file (Gaitsch 1980, 59-60). Tapered tang, square-sectioned and squared end, with

the remains of a cylindrical bone handle (D 25mm) with a square end, stopping short of the shoulders. Sloping shoulders and plano-convex section, with the blade thickest near the shoulders and tapering to the tip. The shape implies it is a file; no trace of teeth survives.

- A3.334 **SF 112.16 (Figure 75k)** *L 143, W 10, T 4; tang L 25, section 5 x 5.5-8.5mm.* Fine half-round file. Plano-convex blade, tapering to the tip and the short rectangular-sectioned tang, its end squared; fragments of an unidentified wooden handle survive. There are no surviving signs of teeth, but the section form and taper are consistent with identification as a file (e.g. Gaitzsch 1980, Abb 6, Taf 12).

#### **Other tools**

- A3.335 **SF 112.17 (Figure 75h)** *L 143; blade H 17, T 2.4; tang section 6 x 8mm.* Knife, type 18b (Manning 1985a, 117). Square-sectioned tang aligned on the blade's back, with remains of a horn handle (JAJ). It expands into a slender blade with a gently convex back and straight blade edge curved gently to the tip. The handle does not cover the start of the tang.
- A3.336 **SF 112.18 (Figure 75l)** *L 104, W 55, handle L 50, blade W 15, tang section 5 x 10mm.* Pruning hook, type Ia (Rees 1979, 461-3, Fig. 192), the tightly-curved blade expanding smoothly from the socket and ending in a rounded tip; the full extent of the cutting edge is unclear as it is obscured by corrosion. The socket comprises a flat tang which tapers to a fine tip, the end turned through a little under 90° to retain the handle. At the top of the tang are two wings, curved to form a handle socket of internal D 12.5mm.

#### **Vehicle fittings**

- A3.337 **SF 112.19 (Figure 76b; Plate 8)** *D 193, H 41-43; rim W 14, H 13-14; body W 3mm.* Nave hoop, with thick, square, protruding rim and thin body, tapered in places to an edge. Visible join where edges of the hoop were lapped on a slight diagonal and welded; a slightly irregular oval hole (10 x 2mm) beside this is probably an accidental perforation. The thickened outer rim is a recognised Roman form (see Manning 1985a, 71, esp. H34).
- A3.338 **SF 112.20 (Figure 76a)** *D 132, H 42, W 4.5-8; wing W 5.5, L 18.5, H 13mm.* Nave lining (also known as an axle box). Penannular ring, the butting ends slightly offset. Tapered rectangle in section, thicker to the front, where a rectangular round-ended wing survives, 15mm back from the butt-join. This would retain the lining in the axle; the other wing is lost. See Manning 1985a, 71-2.
- A3.339 **SF 112.21 (Figure 76d)** *D 135, H 43, W 5-10.5, wing H 15mm.* Nave lining. Penannular ring, slightly tapered at the ends which are upturned and slightly curved back to form retaining wings (both damaged, one largely lost). Tapering rectangular section, the front edge noticeably flattened.
- A3.340 **SF 112.22 (Figure 76c)** *H 50, max T 3.5-5, D 130; wing L 33, H 5mm.* Nave lining fragment. Around two-thirds of the lining is present, ending in an old, angled break, suggesting it was kept for reuse. One original squared end survives, with a thin turned-back wing to hold it in the hub; this is twisted and flattened against the wall. Tapering triangular section.

**Structural fittings**

- A3.341 **SF 112.23 (Figure 75j)** *L 86, H 47 (pivot H 32); arm tapers from 13.5 x 8 to 6 x 2mm.* L-staple from drop hinge. Long rectangular-sectioned horizontal arm tapering to a fine rounded end; vertical arm circular in section (D 9mm).
- A3.342 **SF 112.24 (Figure 75i)** *L 86, H 38 (pivot H 27); arm tapers from 11 x 7 to 5.5 x 1.5mm.* L-staple from drop hinge. Long rectangular-sectioned horizontal arm tapering to a squared end; vertical arm sub-circular in section (D 9).
- A3.343 **SF 112.25 (Figure 75n)** *L 73; head D 26 (eye 13 x 14); arms 47 x 7 x 4mm.* Double-spiked loop, tip of one arm lost, ends slightly splayed and arms slightly bent.
- A3.344 **SF 112.26 (Figure 75m)** *L 98; head L 28, W 25, section 12 x 4.5.* Double-spiked loop, the last 15mm of the tips bent in the same direction. Broad, flat bar tapers into the arms. Fragments of mineralised wood between the arms; unclear if *in situ*.

**Other / non-specific fittings**

- A3.345 **SF 112.27 (Figure 76e)** *L at least 175, plate 48 x 20, rod D 7.5mm.* Steelyard, now in fragments. One end has a flat plate with two perforations along its axis; both have remains of rods from suspension fittings, one a loop with the end wrapped round its arm, the other a flat-sectioned U-shaped loop. The circular-sectioned arm extends from one side of the plate; part is missing, but it ends in a shallow hook to hold the balancing weight or produce. For the type see Manning 1985a, 106-7.
- A3.346 **SF 112.28 (Figure 76f)** *L 30, H 15.5, T 4, est D 40mm.* Circular collar fragment (about a quarter surviving) with a low plano-convex section. Unidentifiable wood on inside edge, implying it was attached to something; bone from adjacent handle in external corrosion.
- A3.347 **SF 112.29 (Figure 76g)** *48.5 x 44; strip 8.5 x 3mm.* Square collar with rounded corners, formed from a fine strip.
- A3.348 **SF 112.30 (Figure 76h)** *D 25 x 30, H 21, T 1.5-2mm.* Small oval collar; flat section with rounded ends.
- A3.349 **SF 112.31 (Figure 76i)** *D 78, rod D 7.5mm.* Ring, probably a handle. Circular section; lapped and welded join visible on X-ray, the section flattened here on the inside.
- A3.350 **SF 112.32 (Figure 77a)** *D 93, T 8-11mm.* Ring, circular-sectioned; probably a handle, the variable section thickness suggesting wear.
- A3.351 **SF 112.33 (Figure 77b)** *L 141, bar 17.5 x 5; terminals D 28.5, 25 x 28, perforation D 7mm.* Handle? Slightly curved bar, with expanded irregular discoid terminals perforated for attachment, shaped to fit a curved surface.
- A3.352 **SF 112.34 (Figure 77c)** *L 95, section 10 x 4; loop H 34, W 24, T 6mm.* Vessel handle and fragmentary mount. Rectangular-sectioned bar, bent into a tight C, the ends tapered to a round section; the intact one is gently curved, and sits in (but is not linked to) a looped fitting (with oval loop, internally 15 x 7.5mm) with a broken shank. The over-tight curve and gentle hook of the terminal suggest this was not a

functioning handle, but was one which had been prepared for use but had still to be tailored to size for a vessel.

- A3.353 **SF 112.35 (Figure 77d)** *L 70, D 28 x 31, T 1-2mm*. Conical ferrule, tip lost to corrosion spalling. Open seam; top edge irregular.
- A3.354 **SF 112.36 (Figure 77e)** *L min 125, W 10.5, T 2mm*. Fine strip, slightly plano-convex in section, one end cut square, other broken.
- A3.355 **SF 112.37 (Figure 77f)** *L 116, W 16, T 1.5-2.5mm*. Folded strip, probably for reuse. Intact end gently rounded; other end lost. A non-joining fragment appears to be part of the same object, giving an overall length of some 410mm.
- A3.356 **SF 112.38 (Figure 77g)** Slotted object with near-perpendicular tapered tangs at either end, their tips lost; formed by welding two L-shaped rectangular-sectioned bars together, leaving a long parallel-sided gap between (2.5-3mm W) with pointed ends. *L 120, W 8.5, H 27; bar 3 x 8*.
- A3.357 **SF 112.39 (Figure 77h)** *L 150, W 70, bar 15 x 9.5, terminals W 16mm*. Large U-staple, plano-convex section, the spalled ends flattened into fastenings of uncertain form.
- A3.358 **SF 112.40 (Figure 77i)** *Estimated D 38, round section 5-6mm*. Fragmentary ring.
- A3.359 **SF 112.41 (Figure 77k)** *105 x 96 x 4mm; nail holes D 6; nail head 18 x 15, shank 5, L 35, giving a minimum substrate thickness of 27mm*. Door pivot? Large square plate with a central circular perforation; slightly irregular, with two corners slightly extended; retained by four circular nail-holes in the corners, countersunk on the front, one pierced at a slight angle. A nail fragment survives in one, with a sub-square head, its shank angled and tip lost. Central circular perforation (D 33mm), the circumference on the underside with an irregular series of dents, perhaps from fitting it tightly to its substrate. The solid construction and dimensions might suggest use as the pivot from the top of a door (W H Manning, pers. comm.; cf. Manning 1985a, 127-8).
- A3.360 **SF 112.42 (Figure 77j)** *H 25, W 22, bar D 3.5, hoop D 7.5mm*. Buckle loop. D-shaped ring, the fractured fastening bar for a strap thinner than the hoop; circular section. Adhering organics on one side comprise a string of twisted wood fibres, but they could not be more closely identified (JAJ).

## **Nails**

### *T-headed nails*

- A3.361 **SF 112.43 (Figure 78a)** *Original L 56, head 21 x 8, shank 4.5 x 7.5mm*. Sinuous from removal; head slightly irregular, extreme tip lost.
- A3.362 **SF 112.44 (Figure 78b)** *L 72, head 20 x 9.5, shank W 6*. Head at angle to shank.
- A3.363 **SF 112.45 (Figure 78c)** *L 46, head 12 x 6, shank 8 x 6.5mm*. One arm of head lost; sinuous from removal.
- A3.364 **SF 112.46** *L 62, head 19 x 9mm*. Sinuous from removal; tapered arms, one slightly squared. Wood adhering to tip.

A3.365 **SF 112.47 (Figure 78d)** *Original L c. 67, head 21 x 6, shank tapers from 4 x 7.5 to 2 x 5mm. Shank bent at 45° from removal; tip clenched. Head somewhat asymmetrical and crudely formed, with channel at top of shank.*

*Type 1b nails (Manning 1985a, 134)*

A3.366 **SF 112.48 (Figure 78e)** *Original L 71, head 20 x 19, shank 10 x 9mm. Tip bent back on itself, giving a wood thickness of c. 35mm; the lack of wood traces implies it had been removed.*

A3.367 **SF 112.49** *L 43, original L c. 65, head 18, shank 6mm. Bent, tip twisted, implying removal.*

A3.368 **SF 112.50 (Figure 78f)** *L 55, head W 13, shank W 7mm. Bent, head damaged, tip lost.*

#### **Unidentified**

A3.369 **SF 112.51 (Figure 78g)** *L 29, W 7.5mm. Bent fragment.*

#### **Leather**

A3.370 **SF 112.52** *L 20, W 16, T 2mm. Leather strap fragment, one original end slightly rounded, other lost.*

A3.371 **SF 112.53** *32, 14.5 x 8.5 x 1mm. Short length of leather strap adhering to item.*

A3.372 **SF 112.54** *23 x 19 x 7mm. An organic fragment attached to the surface of item 15 at an angle, probably a leather strap.*

#### **Non-ferrous objects**

A3.373 **SF 112.55 (Figure 78h)** *D 34, T 15-17; max W 45; best iron hoop W 11, section 4 x 3mm; m 118.3 g. Lead disc weight, the edge channelled; perhaps a plumb bob, though the form is unusual. Remains of diametrically-opposed iron suspension loops, comprising sub-circular rods threaded through an elbow bend cut into the lead. One perhaps replaced the other; there are holes for an earlier version 90° round the circumference, with a distorted area opposite this hinting at further repair efforts. Two parallel, widely-spaced cuts on one face, leading in from the edge, are too irregular to be an inscription.*

A3.374 **SF 112.56 (Figure 78j)** *Flat extent 103 x 87.5; as folded 50 x 87.5, T 0.5mm. Copper alloy mount. Sub-square sheet, some edges slightly rounded; folded to form an asymmetrical U-sectioned edge binding for an organic medium some 6mm wide. No rivet holes. Some leather traces on outer surfaces.*

A3.375 **SF 112.57 (Figure 78i)** *40.5 x 39 x c. 0.3mm. Sub-square copper alloy mount, slightly tapered. Five circular or oval perforations (D 2-3mm; one broken, probably recently), are arranged along three sides; three on one long edge, and opposed ones on the short sides, but not in the corners; a groove from one leads to the corner, perhaps a marking-out line. The fourth, slightly dished side, has none. Unflattened flashing round the perforations on the underside implies either the mount was unused or was used on a soft substrate.*

### **Animal bone**

- A3.376 Counts were made of the identifiable fragments of cattle, sheep/goat and pig if they encompassed an anatomical zone, or distinguishing non repeatable characteristic on an individual skeletal element, as defined by Rackham (1987). This method endeavours to reduce over recording of heavily fragmented bones and provides compatible data sets for comparison between the species. Ribs with the capitulum and vertebrae with zones were assigned to the categories of cattle size or sheep size. All identifiable fragments of all other species were recorded. Loose cheek teeth that clearly derived from one tooth row were counted as either mandible or maxilla, to reduce over-representation.
- A3.377 At the time of the assessment, most of the assemblage had not been washed. The number of identifiable fragments has increased substantially now the bones are clean. However, many teeth and some bones have not survived washing intact and are now reduced to fragments. Identifications made at the assessment stage have been used where bones are no longer identifiable. The disintegration of cattle teeth, particularly, has reduced the ageing information for the composition of the slaughter population.
- A3.378 The species present are listed in Table 4.64. It can be seen that numbers of identifiable fragments from the sub-phases are very small. Any interpretation of these finds is therefore tentative and may merely reflect the small size of the sample. The majority of the finds derive from the domestic farm animals reared for food, with cattle bones being most numerous. This is a reflection of the enhanced survival of the larger, more robust cattle bones. Horse bones may be well represented for a similar reason. The other companion animal, the dog is also present. Wild resources appear not to have contributed to the Table with the red deer finds being of antler, not meat bearing bones. Poultry are present only in Phase 6, again an indication of survival, not original distribution. High status dining is hinted at by the single find of fish. Small commensal species are suggested by a solitary frog/toad.

#### *Relative proportions of the domestic species*

	<b>Phase 3</b>		<b>Phase 5</b>		<b>Phase 6</b>	
<b>Cattle &amp; cattle size</b>	32	59%	69	75%	121	80%
<b>Sheep/goat &amp; sheep size</b>	15	28%	17	18%	22	14%
<b>Pig</b>	7	13%	6	7%	9	6%
<b>Totals</b>	54		92		152	

- A3.379 Although sample sizes are extremely small, there is a tentative suggestion of a difference in species representation between the earlier Romano-British Phase 3, with proportionally more sheep/goat and pig remains, and the later Romano-British and Anglian phases 5 and 6, dominated by cattle bones. Neither hand recovery nor preservational bias can obviously account for this, since the pits of Phase 6 should be least affected by these factors.
- A3.380 Butchery marks were more readily observed once the bones had been washed. Chop marks are most common and principally observed on cattle bones from the Phase 6 pits. One example of a, very small but not juvenile, cattle scapula with a suspension hole in the blade was noted from context 763, the fill of the large Phase 6 pit in Area H (F777).



### **Cattle**

- A3.381 The collection of cattle elements is dominated by loose teeth, many of which are no longer distinguishable between molars 1 and 2. Several of the groupings of decayed cattle teeth probably represent the original deposition of at least complete teeth rows and possibly complete heads. All the examples of these are finds from Phase 6: contexts 2 and 3 filling the possible *Grubenhaus* (F4) in Area A; and context 720 filling the Area H hollow (F730). Other concentrations of teeth, in better condition but also representing the original presence of large parts of skulls, were seen in the Phase 6 pit fills 762 and 763.
- A3.382 Post-depositional loss is illustrated by Table 4.65. This demonstrates the survival of a selected suite of skeletal elements from the Phase 6 pits. The pattern indicates the presence of all parts of the body, suggesting slaughter and consumption on site, skewed towards the more robust bones, indicating some preservational bias. The Phase 6 cattle bones from contexts other than the pits are scarce in comparison, indicating only that some parts of head, fore and hind limbs have survived.
- A3.383 Due to the less than ideal condition of the bones, the paucity of unfused bones from immature animals in Table 4.66 is unlikely to be representative of the preferred age stages for slaughter.
- A3.384 Since teeth are more durable than bone, the tooth wear data in Table 4.68 may give a more reliable indication of age at death than the epiphyses. The third molars, in particular, suggest that beef was sourced from adult animals that had survived into and beyond their third year, but were not aged. The slight wear category corresponds to Grant's (1982) tooth wear stages (TWS) a-f. While TWS were recorded, there are too few data for detailed consideration. Three mandible tooth rows, from the Phase 6 contexts outside the pit groups, give Mandible Wear Scores (MWS) of 29, 30 and 42, which gives an indication of the MWS range represented by Table 4.68. A partial mandible from a very young calf was recovered from context 763 of the large Phase 6 pit (F777) in Area H, but only one deciduous tooth was still *in situ*.
- A3.385 Few bones were sufficiently well preserved for measurements to be taken. The basal diameters of four horn cores divide into two larger and two smaller examples, probably males and females.
- A3.386 A few abnormalities were observed. Two mandibular third molars lacked the third column, a congenital trait in the Romano-British cattle population. Four teeth showed uneven wear. Such malocclusion may be an age-related condition, possibly caused by tooth loss in the occluding tooth row. One acetabulum from Phase 6 exhibits eburnation on the pubic facet, a degenerative age-related condition. One first phalanx has expansion of the proximal end, which may be a response to either draught work or the stress on the feet of an active working bull. The most interesting and unusual condition is displayed by a bovine lumbar vertebra from Phase 5a, where the entire caudal epiphysis shows pitting and eburnation. There is also bony growth on the vertebral body, indicating an area of active inflammation and bone deposition at the time of death. This appears to be an example of spondylosis deformans (Baker & Brothwell 1980, 129-30) which is generally associated with bulls rather than cows. This condition can result in an inability to serve cows, so could indicate the reason for culling this animal.

### **Sheep/goat**

- A3.387 There were insufficient identifiable fragments from any one phase for meaningful consideration of body part representation. However, Phase 5 is outstanding for the presence of three partial skeletons, two of which are certainly sheep. The body from Phase 5a has lots of fresh breaks on the surviving bones and may in fact have been a complete skeleton that has not been completely recovered by hand excavation. The head and major limb bones are mostly present but not the ribs and vertebrae. The horn cores on the skull are definitely of sheep morphology and appear feminine. The full permanent dentition is present, giving MWS 32. Although wear is advanced on molar 1, the third molar is at a very early wear stage, suggesting an age at death not far advanced from the eruption age of about 2 years for this tooth. The epiphyses on the limb bones are fused, with the exception of the proximal humeri and a clear fusion line on the distal humerus. Following Silver (1969), this suggests an age at death at the upper end of the 2.5-3.5 years old bracket. This animal was a young adult ewe, possibly about 3 years old at death. There were no obvious butchery or skinning marks on the bones to suggest utilisation of the carcass. The findspot of context 386, a Phase 5d mixed demolition rubble filling the interior of the aisled building, suggests opportunistic disposal of a natural mortality, such as a lambing time casualty.
- A3.388 Most of the body from Phase 5b had been burnt, with the unburnt bones probably merely the result of incomplete combustion. The find was made in a ditch fill and it is not clear whether it was burnt *in situ*. The one horn core present is again definitely sheep and also appears feminine. The permanent dentition is present, though with less wear on molar 1 and slightly more wear on molar 3 than the Phase 5a animal. The vertebrae present are unfused. The limb bones are fused, though the fusion line on the proximal humerus is clear. This animal would appear to have been a ewe, a little, possibly up to a year, older than the Phase 5a animal. The fact that this body has been burnt suggests that this body represents more than straightforward disposal of a natural mortality. Similar finds of burnt sheep skeletons were made at the late Roman villa at Rudston (Chaplin & Barnetson 1980, 155-6). There is a distinct possibility that such burnt sheep bodies represent the disposal of the uneaten remains of a ritual meal, analogous to the Jewish Passover lamb, requiring the uneaten and inedible portion to be disposed of immediately and made inaccessible to scavengers. Such ritual disposal also survives as modern practice in the Greek Orthodox Church (Georgoudi 1989, 190).
- A3.389 The body from Phase 5c is of a much younger animal. This was recovered from a pit fill. The fusion line on the acetabulum is still clear and all the epiphyses are unfused, indicating this animal was about or less than a year old. No parts of the head were found. It is unclear whether or not this body is food refuse or a natural mortality.
- A3.390 These three bodies provide virtually all the information on epiphysial fusion for this site (table 4.67). Two of the bodies are certainly sheep and the third one probably is. It is possible that goat is also represented on this site. One distal humerus from context 763, the fill of the large Phase 6 pit in Area H (F777), appears much larger and more robust than those from the sheep bodies. Unfortunately the fragment has suffered excavation damage and also exhibits “penning elbow”, an exostosis on the lateral condyle (Baker & Brothwell 1980, 127), so a positive identification is not possible.

A3.391 Excluding the bodies from phases 5a and b, finds of either loose or *in situ* teeth were infrequent. The few examples in Table 4.68 suggest mostly young, rather than aged, adults as exemplified by a single jaw from Phase 3c at MWS 21.

A3.392 No measurable bones were recovered. Even from the bodies, the bones were either burnt, unfused or damaged. Evidence for one male was seen in the form of a horn core chopped from the skull, from Phase 5a.

### **Pig**

A3.393 Pig bones were such scarce finds that no interpretation of body part representation is possible. One group of bones from context 1423, a pit fill in Phase 5c, may be a partial skeleton. Part of a skull, with a female canine, has the molar 1 in wear, molar 2 present but unworn and molar 3 unerupted, suggesting an age at death about one year old. Also from this context are five cervical vertebrae, but not the atlas and axis, with the neural arches not yet fused to the centra, as well as unfused epiphyses. This section of neck suggests a younger animal than the head and there is no articulation between the two. A humerus with both epiphysial ends unfused and a scapula with the tuberosity unfused possibly derive from the same animal as the neck. This is clearly not a largely complete articulated body comparable to the sheep skeletons but the remains of a head and a forequarter, possibly not from the same animal.

A3.394 Other than this find, ageing information is scanty. The few teeth in Table 4.68 suggest some older animals in Phase 6, with molar 3 in wear. Only one minor problem was seen: a rotated premolar 1 on a maxilla with a male canine socket, from Phase 6.

### **Horse**

A3.395 Overall, horse bones are as common as those of pig in Phase 3 and more numerous than those of pig in phases 5 and 6. This immediately indicates that horse bones are present throughout the main phases of occupation and refuse disposal in comparable abundance to those from an unequivocal Table animal. Horse bones are generally more numerous on rural than urban sites and the author has frequently commented on the prevalence of horse bones in even the smallest Iron Age and Romano-British rural assemblages from a swathe of sites down the east of the country from the Tyne to the Humber. This phenomenon is not confined to this region. Parity between pig and horse bones was also noted for Romano-British contexts at Shapwick (Gidney 2007), and Hamilton-Dyer (2000) also observes that rural sites in the south-west tend to have relatively high proportions of horse bones compared to urban sites. Of particular relevance to Quarry Farm is Luff's (1999, 222) finding that, in a comparison of settlement types, horse bones contribute a minimum of 5% of the assemblage on most villa sites.

A3.396 The standard interpretation has been not to suggest that horse formed part of the human diet but that the distribution of horse bones may be seen as disposal of carrion, largely separate from human domestic refuse. A dead horse presents a significant problem in terms of waste disposal and the simplest solution has usually been to push the body into the nearest convenient open pit or ditch. Legislation from much later ages makes it clear that there has always been a significant element of fly tipping in the disposal of such carcasses. Dispersal of the remains can be aided by the action of scavengers, particularly dogs.

- A3.397 On this site it is clear that, in the Phase 6 pits, horse remains have been deposited as a component of the normal range of domestic refuse and that some of the horse bones have been butchered in a comparable manner to those of cattle. The feeding of knacker's meat to dogs is a further standard explanation that could cover these finds. However the association of horse bones with what would normally be considered typical human food refuse does require that the concept of possible hippophagy on this site should be considered. Hyland (1990, 249) notes that the eating of horsemeat was repugnant to Romans and only resorted to in time of famine. Jukes (in prep) is currently exploring the origins of the Anglo-Saxon Christian taboo on hippophagy. Jukes has defined three criteria to assess the probability of archaeological finds of horse bones having been possibly eaten by humans, rather than being refuse from craft working, victuals for dogs or merely carrion. These are:
- a. horse bones occur on the site
  - b. the horse bones show either butchery marks or evidence of marrow extraction
  - c. the horse bones are found in the same context as other human food-domesticated bone-waste.
- A3.398 Bone from context 763, a fill of the large Phase 6 pit in Area H (F777), fulfills all three of Jukes' stipulations. A horse and a cattle metatarsal were butchered in the same manner: these are marrow bones. Also, one first phalanx of horse, from context 826, another fill of the large Phase 6 pit in Area H (F777), has been split in half longitudinally. Horse dismemberment in Phase 3a is indicated by a scapula from context 736 (the fill of posthole F735 in Area E) that has been chopped.
- A3.399 Cool (2006, 91-2) notes that regular and convincing evidence for human consumption of horse is sparse. One exception is the religious complex at Ivy Chimneys, Witham, Essex (Luff 1999, 205-7). Cool (2006, 91) makes the obvious connection from this of a ritual or religious basis for hippophagy. However Cool makes the very much more intriguing suggestion that the indigenous iconography of horses suggests they were an attribute of landholding. In such case, eating horse would have very different connotations to eating beef.
- A3.400 The remaining finds of horse elements from Quarry Farm appear to fall into the traditional interpretations, with concentrations in ditch fills suggesting carrion and loose teeth indicative of poor preservation and background debris. One group of teeth from Phase 3 is probably all that is left of a skull. The ageing information indicates adult animals with fused epiphysial ends. One jaw from Phase 6 with deciduous premolar 4 and molar 2 indicates an age at death between two and three years old (Schmid 1972, 77). A further jaw from Phase 5 with little wear on molar 3 indicates an animal about four years old. An aged animal is indicated by advanced tooth wear on a jaw from Phase 3.
- A3.401 The late Roman house and Anglo-Saxon ditches from Newton Bewley, Hartlepool, provide a local comparison with Quarry Farm. Here, too, pig and horse bones were recovered in similar numbers and clear and unequivocal chop marks were seen on the horse bones. The presence of dog gnawing marks on the same bones clouds the interpretation but it was noted that horse meat could have been eaten by the occupants (Gidney, no date).

A3.402 A re-assessment of horse bones and hippophagy from British rural sites in the north-east, whether Iron Age or Roman period, is beyond the scope of this report but this site shows that such a re-appraisal is necessary.

### **Dog**

A3.403 The largely complete skeleton of a dog was recovered from context 763, a fill of the large Phase 6 pit in Area H (F777). The bones are generally in a good state of preservation but are slightly brittle, which has led to a lot of minor fresh damage during recovery. All parts of the body are present but there is very poor representation of the phalanges, demonstrating that it is very easy to miss these small elements during hand recovery.

A3.404 The animal was an adult male. All the epiphysial ends are fused and all the permanent teeth are present, with some wear on the carnassials and adjacent teeth, used for gnawing bones. The *os penis* is present.

A3.405 The skull was too damaged for measurements to be taken to establish cranial indices (Harcourt 1974). Measurements were taken of the posterior region of the cranium, following Jones *et al.* (no date). Greatest Length measurements were taken of the major limb bones to establish the withers height of the animal, following the factors given by Harcourt (1974, 154). The height estimates from individual bones and combinations of bones range between 0.63m and 0.66m but indicate the general stature of this dog.

A3.406 The animal appears to have been in good skeletal health at death with no sign of degenerative arthropathies or oral problems, other than a possible minor gum inflammation. This dog had suffered traumatic injury earlier in its life. Four ribs showed clear bony growths and mis-alignment of the shaft indicative of healed breaks. The dog had therefore suffered a serious injury to at least one flank but had made a total recovery. The central metacarpals of the right front paw also showed evidence of bony growth suggestive of a healed injury but this appears to have been a surface injury, not broken bones. Such injuries, and recovery, and the stature of the animal are compatible with the initial suggestion made in the original assessment that this might have been a favoured hunting hound. It is unclear whether the late Roman gilded brooch found in this pit was associated with the burial of the dog. Although the dog was deposited in a pit accumulating other waste, the brooch suggests some of the refuse was more than routine discard.

A3.407 One calcaneum from this skeleton was submitted for radio-carbon dating. The result is 340-540 cal AD for the date of deposition.

A3.408 Other than this skeleton, finds of actual dog bones were rare. Context 826, a fill of the large Phase 6 pit in Area H (F777), produced a scapula with a hole in the blade that appears very like the suspension hole seen in cattle, and less often, sheep scapulae. Phase 5 produced two bones from separate contexts.

A3.409 The characteristic gnawing marks made by dogs on the bones of other species is usually a good indication of the presence of dogs. As seen from the table below, such gnawing marks are infrequent. In part this is a reflection of the poor surface condition of much of the assemblage. The presence of gnawing marks in Phase 3 testifies to the presence of dogs, despite the absence of actual dog bones. One dog

can gnaw an awful lot of bones during a lifetime, so few dogs appear to have been present at any time on this site.

- A3.410 The low numbers of dogs that appear to have been kept on this site, and the equivocal evidence for gnawing marks on horse bones, tends to imply that the horse bones found were not primarily sourced to victual dogs.

*Numbers of canid gnawed bones*

	Phase 3	Phase 5	Phase 6 not pits	Phase 6 pits
<b>Cattle</b>	3	2		4
<b>Sheep/goat</b>	3	1	1	
<b>Horse</b>	1?	1?		

**Red Deer**

- A3.411 Red deer is the sole wild faunal resource utilised by the occupants of this site for which evidence has survived. One limb bone was recovered, a radius showing chop marks, from the Phase 6 pit fills. This is the only evidence for the consumption of venison. The remaining finds are all fragments of antler. The antlers are all large examples deriving from senior stags. One find from Phase 6 had clearly been shed. The use of antler for craft working is suggested by a sawn tine from Phase 3a. The remaining antler pieces were in poor condition.

**Poultry**

- A3.412 Only two bird bones were recovered, one example of domestic fowl and one of goose, both from Phase 6. These bones attest the presence of domestic poultry on the site but not their economic importance.

**Amphibian**

- A3.413 One frog/toad long bone was found in context 516, a Phase 4 deposit filling the flue of the *caldarium* in Area C. Once disused, such a place would be attractive to hibernating toads, for example. This small bone can only hint at the variety of small, wild commensal species originally present.

**Fish**

- A3.414 A single fish bone from context 370, a fill of the Phase 5d oven (F274) located at the northern end of the aisled building in Area C, was an unexpected find, given the generally mediocre preservation and was initially thought to be of recent origin. However the findspot, a fill of a stone drain, is well sealed and indicates a small pocket of benign burial environment.

**Glass**

- A3.415 Abbreviations  
BD = base diameter  
D = diameter  
Dims = dimensions  
H = height  
ID = internal diameter  
L = length  
PH = present height  
RD = rim diameter  
T = thickness  
WT = wall thickness

*Tablewares*

**Polychrome**

- A3.416 **1 (SF 41; Plate 10)** *Context 751, Phase 6 and Context 1016, Phase 5b: A - Dims 32 x 53mm, WT 3.5-4mm; B - Dims 28mm x 56mm, WT 3.5mm; C - Dims 17 x 32mm, WT 3.5mm.* Seventeen fragments, restored in three pieces (A,B and C), wide slightly convex side and almost flat base, large shallow plate or dish. Colourless with greenish tinge. Thin sections of polychrome mosaic canes in translucent blue, green and turquoise and opaque white, red, yellow and green embedded in upper surface. Canes with at least six floral patterns linked to lengths of flat rod and an area of wavy strips and roundels showing part of a floral design. Dull surfaces with strain cracks, particularly in A and B, some pitting. Some edges of A and B appear to have been re-worked and may have been cut and reshaped.

**Strong colours**

- A3.417 **2 (SF 59)** *Context 268, Phase 3a: Dims 15.5 x 6mm.* Melted lump. Yellowish brown. Grey ash on one surface.
- A3.418 **3 (SF 5; Figure 79a)** *Context 491, Phase 3b: PH 31mm.* Rim and handle fragment, jug or jar. Yellowish green. Edge of everted rim. D-sectioned rod handle attached to rim with folded thumb-rest.

**Colourless**

- A3.419 **4 (SF 63; Figure 79c)** *Context 516, Phase 4: PH 23.5mm, Body D approximately 80mm, WT 1mm.* Three body fragments, cylindrical cup with trails. Vertical side, rounded change of angle, lower body tapering in, with fine horizontal trail applied at change of angle. Dull, strain cracks.
- A3.420 **5 (SF 60; Figure 79e)** *Context 330, Phase 3a: PH 5.5mm, BD approximately 60mm.* Three lower body and base fragments, probably cylindrical cup. Open lower body and slightly concave base with narrow trailed base ring. Wear on base ring.
- A3.421 **6** *Unstratified: PH 18mm, WT 1mm.* Body fragment, cylindrical cup. Straight side above rounded change of angle. Dull.
- A3.422 **7 (SF61; Figure 79f)** *Context 981, Phase 3d: PH 8mm, RD approximately 90mm, WT 1.5mm.* Rim fragment, cup or small bowl. Everted rim, edge fire rounded, tapering in to upper body. Dull.

**Bluish Green**

- A3.423 **8** *Unstratified: Dims 24x22.5mm, WT 1mm.* Body fragment, probably jar or jug. Some bubbles. Wide convex side above base ring. Iridescent weathering.

*Bluish green Containers*

- A3.424 **9** *Context 1, Phase 7: PH 17mm, WT 2.8mm.* Body fragment, cylindrical bottle. Straight side. Dull.
- A3.425 **10 (SF 58)** *Context 3, Phase 6: Dims 26 x 17.5mm, WT 2.5-3.5.* Body fragment, prismatic vessel, probably a bottle. Straight side.
- A3.426 **11 (SF 55)** *Context 241, Phase 3a: PH 38mm, WT 2.25mm.* Body fragment, prismatic vessel, probably a bottle. Straight side with right angle.

A3.427 **12** *Context 492, Phase 7: Dims 21.5 x 17.5mm, WT 3.75mm.* Small fragment from shoulder of prismatic vessel, probably a bottle. Thick wall. Some usage scratches.

A3.428 **13** *Context 492, Phase 7: Dims 18 x 15mm, WT 3-4mm.* Body fragment, prismatic vessel, probably a bottle. Straight side.

*Unidentified*

A3.429 **14** *Context 492, Phase 7: Dims 50 x 36mm.* Burnt lump. Bluish green. Completely melted, probably from vessel.

A3.430 **15** *Context 1107, Phase 5d: Not measured.* Five tiny chips. Bluish green.

*Objects*

**Bangles**

A3.431 **16 (SF 62; Figure 79g)** *Context F1474, Phase 5a: H 17.5mm, T 10, ID 70mm, L 37.5mm.* Fragment (58° of circumference), D-sectioned bangle. Dark blue ground, four thin opaque white and four opaque yellow narrow trails overlaid by three slightly oblique blue and opaque white twisted cords, all marvered nearly flush with convex surface. Some wear.

A3.432 **17 (SF 56; Figure 79d)** *Context 882. Phase 3c: H 11mm, T 6.5mm, ID 50mm, L 33.1mm.* Fragment (65° of circumference), D-sectioned bangle. Opaque white. No visible weathering.

**Bead**

A3.433 **18 (SF 54; Figure 79b)** *Context 964, Phase 4: H 4mm, D 8.8mm, Dperforation 2.2-3.0mm.* Small annular bead. Opaque yellow. Flat top and bottom surfaces, tapering perforation.

**Geological stone identification**

**General visual assessment**

A3.434 The stone blocks were relatively uniform, demonstrating the following characteristics:

- Composed of medium to fine grains
- Colours ranging from white to brown/buff and red
- Thin lenses of rounded pale mud flakes common in many pieces
- Most demonstrated medium thickness bedding averaging 200-300mm
- Flat even bedding surfaces - planar bedding
- Some thinner 'flaggy' pieces
- Evidence of cross-bedding structures within the fabric of the blocks
- Dark mineral spotting
- Visual evidence of some white (dolomitic?) cement within unweathered section of the rock.
- Generally uneven vertical fracture at right angle to obvious bedding planes

**Microscopic examination**

A3.435 Six representative samples were examined under the microscope. The following observations were noted:

- All samples were composed almost entirely of quartz grains with cemented matrix



- Visible cement of white dolomite (where fresh) or quartz;
- Sub-rounded quartz grains
- Bedding planes marked by finer grains and mica flakes
- Finer grained pieces contained abundant mica flakes throughout
- Many contained dark mineral 'spotting' that may be manganese or similar rounded deposits both within the matrix and along bedding planes

### **Comparison with Barwick Quarry samples**

- A3.436 Although much of the quarry is now overgrown it was possible to inspect a number of outcrops exposing the same beds along a length of about 20 metres. It was obvious that the quarry had been much larger but surrounding slopes had become degraded and overgrown.
- A3.437 Along with a number of others in the area to the north of the adjacent River Tees, Barwick Quarry had been operated in the 19<sup>th</sup> century for its exposures of Cleveland Dyke rock. This is a hard dolerite (medium grained basaltic igneous rock) known commercially as 'whinstone', used extensively for road setts (rectangular blocks) used to create the active surface of roads. The quarry operators used the river as easy transport to take the rock down stream to Stockton and Middlesbrough.
- A3.438 The Cleveland Dyke is vertical igneous intrusion injected in to the country rock in a semi-molten state. Along its contact edges it typically 'bakes' and shatters the country rock. Such effects can be seen elsewhere in the Cleveland Hills where it is still exposed in a number of large quarries. Here the Dyke has cut through horizontally-bedded sandstone of Triassic age, comprising units known as the Sherwood Sandstone Group.
- A3.439 The exposures show a thick basal unit of medium grained buff-coloured sandstone topped by thinner flat-bedded units averaging around 200mm in thickness. Beds were generally flat-topped and planar but with more uneven vertical fracturing. Thinner beds were flaggy in nature. There is abundant evidence of cross-bedding structure within the individual beds.
- A3.440 The archaeological samples had many characteristics in common with the samples taken from the adjacent Barwick Quarry. They were comparable in colour, grain size and mineral content and structurally had flat planar bedding and bedding thicknesses in the upper unit equivalent to those seen in the loose blocks inspected.
- A3.441 No outcrops of the red, soft siltstone were seen in the exposure but are recorded in the general sequence of the Sherwood Sandstone - in fact these are a more typical rock type of the Group and dominate the foreshore exposures at Seaton Carew. There is therefore reason to suppose that other areas of the quarry did once expose this rock type. It is also unlikely that the obvious physical properties such as its red colour, ripple marking and flaggy nature would have made it worth transporting any distance.

### **Stone examined at Durham University**

- A3.442 Boxed material. Seven boxes of stone finds and some loose material from the site were examined in the Archaeological Services offices. A full listing of the geological identification of these items is provided in Table 4.69.

### **Worked stone artefacts**

**Axehead** by Alan Saville (Figure 80)

- A3.443 **SF 196 (Figure 80a)** *Context 797, Phase 3c: L 108, W 52, T 27.5mm; weight 212 g.* Near-complete Neolithic stone axehead, broadest at the cutting edge, with the virtually straight sides tapering uniformly towards the butt. The convex cutting edge is intact apart from a minor modern chip on one face, but has become blunted, and viewed end-on is slightly curved. The sides of the axehead are markedly faceted (max W 9mm towards the blade end) and inclined inwards towards one face, giving the axehead a somewhat sub-trapezoidal cross-section. The butt has suffered recent damage in the form of a blow from one face, leaving a flake scar 23.5mm across. This has slightly truncated the position of a previous ancient removal, evident as a pronounced flake scar through the ground surface on one face. The scar represents ancient damage through this surface. The damage at the butt makes it difficult to be absolutely certain of its original appearance, but it was probably squared off and faceted at a point just about coincident with the existing maximum extent. Elsewhere there are only two minor flake scars which preceded, but have not been removed by, the all-over grinding. There are some traces of slight faceting on the surface of both faces, resulting from uneven grinding, perhaps relating to resharpening or reworking. The surface is now matt, with a yellowish-olive-pale brown colouration, though the recent break at the butt shows that internally the rock is a darker grey-green; the present surface colour and condition is a result of weathering. This has also dulled the surface, altering what would originally have been an all-over ground and polished appearance. Material: fine-grained volcanic ash.

### **Whetstones**

- A3.444 **SF 197 (Figure 80b)** *Context 2, Phase 6: L 64.5, W 46, T 27.5mm.* Small fragment of a rectangular-sectioned flat whetstone, broken across the width. One face and one side have been flattened and smoothed from use with light polish. The remaining surfaces are unmodified. Fine hard buff sandstone.
- A3.445 **SF 198** *Context 1314, Phase 4: L 179, W 48, T 43mm. F767.* Natural rounded cigar-shaped stone with one surface flattened and smoothed, with an oval area of red ferruginous staining (59 x 32mm) perhaps from use. Secondary use as a pounder is indicated by a small round area (D 11.5mm) of peckmarks on one rounded end. Probably dolerite.
- A3.446 **SF 199** *Context 1016, Phase 5b: L 133.5, W 48, T 35.5mm.* Natural cigar-shaped stone with one smoothed and slightly flattened face. The wear is concentrated on the side of one face with an adjacent patch (43.5 x 6.5mm) of dark red staining on the edge and on one rounded end, perhaps from secondary use as a smoother. Both tips have small circular pecked facets (10mm, 13mm D) from secondary use as a pounder. Igneous rock (type uncertain).

### **Grinder/rubbing stones**

- A3.447 **SF 200 (Figure 80c)** *Context 2, Phase 6: L 153.5, W 49, T 34mm.* Natural elongated cigar-shaped stone; one face has seen considerable use as a grinder/rubbing stone, creating a distinct convex smoothed and abraded face. Both sides have an elongated band of abrasion (127 x 17mm, 129 x 20mm) adjacent to the worked face. It is unclear whether this is the result of deliberate shaping or from use. Fine hard buff sandstone.

A3.448 **SF 201** *Context 3, Phase 6: Remaining L 58, W 55.5, T 37mm.* A small fragment of an ovoid cobble; one face is flattened from use, perhaps as a grinder/rubbing stone. Dolerite.

#### **Spindle whorls**

A3.449 **SF 202 (Figure 80d)** *Context 1242, Phase 5a: D 31.5, T (remaining) 14mm.* Biconical shale spindle whorl with a drilled central perforation (D 7mm). The material is badly laminated and the lower portion of the whorl has been lost.

A3.450 **SF 203 (Figure 80e)** *Context 668, Phase 6: D 39, T 7mm.* Flat disc-shaped spindle whorl with slightly rounded edges and drilled central perforation (D 7.5mm). The edges have lathe-turned decoration comprising two raised ridges; the lower surface has a series of radial tool marks from manufacture. Slight damage to one edge. Oil shale or canneloid shale.

A3.451 **SF 204 (Figure 80f)** *Context 1242, Phase 5a: D 45, T 15mm.* Unfinished sandstone spindle whorl, with off-centre drilled perforation (D 5mm), the ends flared into an hourglass (D 9mm). The edges and faces are coarse and uneven.

#### **Other**

A3.452 **SF 205 (Figure 81a)** *Context 1278, Phase 5a: 200 x 250 x 110mm.* Unfinished vessel? Crudely-shaped circular sandstone fragment, fractured off a larger object (perhaps in course of manufacture, given its crudeness). The exterior is flaked. Sub-circular pecked perforation / hollow (maximum surviving W 150mm). The top edge is the weathered natural laminar surface, with some cutmarks.

A3.453 **SF 206 (Figure 81b)** *Context 1463, Phase 5b: L 211, W 131, T 103mm.* Weight. Broken sub-rectangular body; tapers towards the rounded end, defined by a pecked groove, which has a transverse drilled suspension hole (D 33.5mm). Point-dressing on all surfaces. Sandstone.

A3.454 **SF 207 (Figure 81c)** *Context 318, Phase 5d: H 200, W 160, T 120mm.* Unfinished miniature altar. Rectangular block, expanded at base and top, the latter damaged. The expanded base has a groove on the front and two sides, suggesting the beginning of a double roll-moulding. Carefully-formed channelled toolmarks on all surfaces from point-dressing, mostly horizontal except on right side. The form resembles that of a crude small pillar, but it is interpreted as an unfinished altar on the basis of the size and form, with both plinth and capital, careful dressing and basal moulding. For similar-sized altars, cf. Collingwood & Wright 1965, nos 1024, 1081, 1084, 1087, 1145. Sandstone.

A3.455 **SF 208 (Figure 81d)** *Context 1337, Phase 3b: L 235, W 195, T 59.5mm.* Ingot mould. Tabular dressed sandstone block, sub-rectangular in section. Three sides have been carefully squared off; one is broken. In the centre of one dressed face is a deep sub-rectangular mould with rounded corners (L 113, W 45, D 24mm) and dished base. The interior is stained from heat, as are areas of the slab's upper surface. Peckmarks remain on the interior of the hollow from manufacture, and also on the edges of the rounded ends.

### **Building materials**

#### **Architectural stone** (all local sandstones)

- A3.456 **SF 209** *Context 236, Phase 5d: 310 x 160 x 110mm.* Moulded fragment from a plinth. Two faces survive, one with diagonal point-dressing, the other smoothed, with a recessed rounded moulding along the long edge, formed of a slightly concave recessed channel with rolled edges either side.
- A3.457 **SF 210 (Figure 81e)** *Context 236, Phase 5d: 435 x 330 x 130mm.* Reused architectural fragment with socket for upright. Tabular slab, both faces natural, with rough dressing on the lower surface to smooth it off. Pecked square socket (70mm wide, 20mm deep), 150mm back from surviving original edge, with flattened base and rather poorly-finished sides. Reused as a building stone; one original edge was retained as the visible face, with the others crudely dressed into a tapering block. A shallow ledge cut along one narrow edge was presumably to lock into another block.
- A3.458 **SF 19 (Figure 81f)** *Context 856, Phase 3a: L 620, W 305, T 140mm.* Broken dressed slab with remains of a door socket and curved wear. Tabular slab, the lower face mostly natural, thinned at the ends. The intact side uses a natural fracture plane with some coarse dressing; the ends are also roughly flaked, their top edges more carefully dressed square to provide a neat fit. The upper surface has occasional pick and point-dressing to smooth it; one end is neatly dressed with toolmarks perpendicular to the edge. On the fracture surface is a conical socket, slightly asymmetrical, with a rounded base (D 70, depth 75); it has been pecked, with subsequent use-smoothing indicating use as a door socket. A pronounced wear channel 45mm wide curves across one end of the slab, its sides damaged and its base smoothed. This is likely to be from a door, although not the one set in the socket.
- A3.459 **SF 212 (Figure 81g)** *Context 1227, Phase 3c: L 1040, W 280, T 110mm.* Flat rectangular slab, extensively dressed and relatively well-finished. The faces are dressed diagonally with a large point or pick (in two directions on one face). One edge uses a natural fracture plane, with fine flat chisel dressing at one end; the other edges are finely point-dressed, mostly on the diagonal. One face has a curved smoothed area of wear, 40-60mm wide, perhaps from the movement of a door.
- A3.460 **SF 213** *Context 603, Phase 5b: 162 x 102 x 25mm.* Roofing tile fragment, now lozenge-shaped; original form unclear due to breakage, but perhaps also a lozenge (the two original edges are at roughly 45° to one another). Broken across biconical perforation near tip (min 7mm, max 33mm).

### **Building materials**

#### **Building stones; the aisled building**

- A3.461 A representative selection of building stones from the Phase 3a aisled barn was retained for study. All are local sandstones. Most are crudely squared blocks, tapering in plan and section, with one well-finished face. Face dimensions vary from 235-380mm W by 105-190mm H, and depth (perpendicular to the face) from 120-285mm. The faces are generally point-dressed except where a natural fracture plane has been utilised. One markedly better-finished block was also found, the front face with three rows of fine herring-bone dressing, one horizontal surface using a natural fracture plane, the other point-dressed, and the long edges well-finished with light point dressing (face 200 x 105, depth 250mm).

**Building stones; other structures** (all local sandstones unless noted)

- A3.462 **SF 214** *Context 469, Phase 3: 365 x 295 x 70mm.* Fragment of a squared tabular slab with natural ripple marks, worn on one face. Two edges naturally perpendicular, third flaked, fourth lost. Flooring slab from the hypocausted building – part of a floor, chosen presumably for both decoration and grip. Local micaceous siltstone.
- A3.463 **SF 215** *Context 236, Phase 5d: Face 160 x 115mm, depth 235mm.* Squared tapering building stone of same form as the ones in the aisled building but better finished. Horizontal surfaces and one edge use natural fracture planes; others flaked; front face has diagonal point-dressed channels.
- A3.464 **SF 216** *Context 1007, Phase 5a: The original dimensions are unknown, apart from the thickness (120mm); 210 x 225mm as it survives.* Fragment of dressed stone, broken and probably reused, with a shallow U-sectioned rectangular clamp-hole cut into the surface from the surviving edge (L 95mm, W 55mm, H 15mm). Traces of point dressing survive; several of the fracture surfaces are rather worn, indicating it was reused.

**Brick & tile**

- A3.465 Brick and tile were notably sparse on the site (1.2 kg / 34 fragments, excluding modern material), and clearly saw little use. There were no roof tiles, and only a few fragments of other forms: one fragment of a thick brick or building tile (T 50mm) came from F566, while thinner flat tiles (T 20-25mm) came from Contexts 236, 323, 328, 338 and 1331. A single piece of a stone roofing tile from Context 603 (see above) suggests that at least one building on site had a stone roof; others were presumably thatched or had wooden shingles. There were no box flue tiles associated with the hypocaust.

**Daub**

- A3.466 Over 4 kg of daub and burnt clay was recovered, the majority small amorphous abraded fragments. However, two preserve finger impressions, and five (perhaps eight) wattle impressions. Four main fabric types are present. The majority are a fine clay, red-brown in colour, with a small amount (about 5-10%) of small natural grit inclusions. Also present are fragments of darker brown-red clay, slightly coarser than the 1<sup>st</sup> with larger and more frequent (about 10-15%) inclusions, and a light red-brown fine clay with fine sand/grit inclusions. Lastly is a red-brown coarse grit clay with large amounts (about 50%) of angular grit inclusions.
- A3.467 The daub was found throughout the site in a range of contexts from early Romano-British to modern. As Table 4.77 indicates, the dominant context was oven fills, probably derived from the superstructure of the ovens themselves, although the abraded condition means it is not possible to characterise the shape or form of the oven structures. However, most material was redeposited in secondary contexts, with small amounts from ditch and drain fills, structural features such as walls and foundation trenches, and rubble dumps. There are very few concentrations of material, but notable exceptions are over 0.5 kg of daub from a Phase 3b pit (F585) and a Phase 3d oven flue (F1311). 633g of daub was also recovered from within a stone drain (F274) connected with late Romano-British use of the site. These may represent demolition of nearby structures.

### **Wall plaster**

- A3.468 Very little wall plaster is present amongst the assemblage, perhaps due partly to its soft fragile condition. None showed any paint traces, apart from a slight red hue on one fragment. Two contexts (both Phase 3d) produced plaster. Most (106 g) derives from the fill of a Phase 3 ditch (F1199), more or less equidistant from the villa, the hypocaust and the damaged building in area D, any of which could have been the source. A small quantity (12.3g) from the fill of the early hypocaust system was probably incorporated after the removal or destruction of the floor.

### **Mortar**

- A3.469 Mortar has been differentiated from plaster following the criteria of Morgan (2001, 226), who argues that the two are often incorrectly recorded as one material; he distinguishes mortar as a bonding material and plaster as a finishing coat. Over 1.5 kg of mortar was recovered from the later phases of the site's use (Phase 3-7). This was visually examined, allowing variations in the composition to be recorded. Two types of mortar agglomerates were noted:

Type A: fairly soft to hard white chalk-/lime-rich mortar with few inclusions (< 15%) of small crushed tile/brick. This is distinguished from *opus signinum* due to the comparatively small percentage of tile/brick inclusions, and the lack of tile dust and large gravel inclusions. The high chalk-/lime component of this mortar gives it a bright white colour and contrasts sharply with the *opus signinum* which is red-brown in colour due to inclusion of larger quantities of sand and tile dust. Total wt 1716g

Type B: coarse, compact mortar with flecks of crushed tile/brick. Light-brown in colour. Total wt 33.7g.

- A3.470 The small quantity of mortar was fairly evenly scattered throughout the site, with no concentrations present. Most appears to have been recovered from secondary contexts although 33.7g of type B mortar came from the fill of a flue within the hypocaust building in Phase 4 (Context 516).

### **Opus signinum**

- A3.471 Just under 3 kg of *opus signinum* was recovered. The condition of this material was variable, from a large flat section of floor (Context 302) to small abraded fragments that appear to have been worn and disturbed. Despite the variation in condition, the composition of the material was consistent throughout: a light red-brown agglomerate of silt/clay-rich earth bound together with sand, small rounded pebbles and gravel, with a large quantity of crushed tile or brick and shell. The use of a high proportion of crushed and broken tile in the aggregate is the characterising feature of *opus signinum* (Perring 2002, 127). 2322 g of this material appears to be *in situ* internal flooring relating to the hypocausted structure (Phase 3b, Context 302). Over half a kilogram of further fragments was recovered from fill around the hypocaust system (Context 947), perhaps fragments incorporated in the fill after the repair or collapse of the building.

### **Querns**

- A3.472 **Quern 1** Context 740, Phase 3a: approx 240mm across, fragment is 180mm long, max depth is 190mm. Half fragment of saddle quern, perhaps 40% extant. Shape sculpted with coarse hammering – no secondary working. Very smoothly worn grinding face. Medium/fine grained local sandstone. Poor milling properties.

- A3.473 **Quern 2** *Context 1466 (Same as Context 944 below, but not joining), Phase 3a: 249 x 180 x 98mm.* Fragment of Quern 1, has five small grooves (2-3mm wide, up to 3mm deep) on worn face (?grinding face) and four smaller grooves on opposite face (?base).
- A3.474 **Quern 3** *Context 944 (Same object as Context 1466, but not joining), Phase 3c: 82 x 79 and 72mm thick.* Small fragment (<20%) of saddle quern with small grooves in grinding face, one larger groove on basal facet and a further series of grooves and slots on the worked face between the grinding face and base. The large basal groove is 11mm wide and 3mm deep with a straight-sided and flat based cross-section. Reminiscent of ingot slots which are often found on later prehistoric querns in the north, but much too shallow in present state. Medium brown, fine-grained local Jurassic sandstone. Micaceous. Poorly bedded, without fossil or inclusions.
- A3.475 **Quern 4 (Figure 82a)** *Context 782, Phase 3c: diameter 330mm, 152mm tall.* Substantially complete beehive upper stone, approx. 90% extant, the only missing parts are fragments of the outer edge. Outer surface has small regular tooling, as has concave hopper, 140mm dia, and 72mm deep. Feed pipe is regular and well-drilled, diameter 25mm, the same diameter as the cylindrically-bored handle, 75mm deep. The grinding face is smooth, almost polished, and very slightly concave (max depression 9mm). Traces of occasional dressing marks from a round-tipped hammer are still evident. Worn asymmetrically, the base of the feed pipe is widened by 15mm on the worn side. There is slight modern damage beneath the handle hole and on the edge of the grinding face. Fine-grained local orange/yellow sandstone. No fossils or inclusions. Poor milling properties.
- A3.476 **Quern 5 (Figure 82b)** *Context 720, Phase 6: diameter 330mm, ht 141mm.* Substantially complete beehive upper stone, approx. 90% extant, damaged around outer edge, particularly around the handle hole. Moderately worn, giving slight depression in grinding face, max 20mm, which is smooth, almost polished, with ferruginous accretions, worn into the face. Uneven surface of g/f suggests that it had been used as a sharpening stone post-use. Outer surface tooled and worn, suggesting it has been much handled. Small round-pointed tool, head approx 4mm across. Two handle holes, opposed, one worn to g/f. Both about 70mm deep, narrow at base, 20mm wide and cylindrical but worn out example has the outer 48mm widened (by iron handle?) to 35mm at mouth. Feed pipe is also 20mm in dia, very cleanly drilled. Light brown/yellow fine-grained sandstone. No inclusions, occasional flaws in bedding. Poor milling properties.
- A3.477 **Quern 6 (Figure 82c)** *Context 236, Phase 5d: 70mm at thickest part near eye, with crudely-worked conical hopper, 100mm wide x 27mm deep, and narrow feed-pipe, 14mm at narrowest, widening to 30mm at grinding face.* Approx 40% of disk quern upper stone, Outer wall is almost vertical, with very coarse tooling. Grey-brown, very fossiliferous ?Jurassic sandstone. Fine-grained with turbulent bedding. Moderate milling properties, the matrix has a tendency to polish but the surface stays abrasive because of the presence of the numerous fossil pits.
- A3.478 **Quern 7 (SF 16; Figure 82d)** *Context 787, Phase 3d: 208 x 265mm and at least 48mm thick.* Small fragment (<20%) of large diameter millstone, with steeply sloping outer wall finished with vertical linear tooling. Grinding face is concave, with dressing of concentric lines, worn but clearly visible. Outer walls roughly tooled with peckmarks from pick. Probably a base. Grey-brown fine-medium

grained sandstone. No inclusion or fossils in the well-rounded and well-sorted matrix.

- A3.479 **Quern 8 (Figure 82g)** *Context 994, Phase 5c: 167 x 70mm in size. Less than 10% of large diameter quern/small millstone, less than 39mm thick, with steeply sloping, curved, outer wall. Patches of ferruginous concretions on grinding face. Remains of handle slot in upper surface, 21mm deep and >27mm wide at fracture. Slight overhanging lip on edge of slot to help secure the handle bar. Sooting on fracture. Light brown-grey fine-grained, well rounded and sorted sandstone, ?local Jurassic. No fossil pits or inclusions.*
- A3.480 **Quern 9** *Context 720 (Same object as Quern 10 below, but not joining), Phase 6: 151 x 142 and 35mm thick. Small fragment of disk quern/millstone. Outer wall curved, with large round hammer tooling, regularly but not closely spaced. Traces of sooting or burning on grinding face which is flat and worn, without evidence of dressing lines. Medium grey Millstone Grit, coarse, moderately-well sorted and rounded, with quartz inclusions up to 7 x 7mm. Very good milling properties.*
- A3.481 **Quern 10 (Figure 82f)** *Context 1092 (Same object as Quern 9 above, but not joining), Phase 5a: 160 x 87 x 38mm. Fragment of Millstone Grit quern/millstone rim, no diagnostic features extant. Lithology as above.*
- A3.482 **Quern 11 (Figure 82e)** *Context 879, Phase 5b: 121 x 105mm, and 38mm thick. Four frags of rotary quern of large diameter or millstone, largest. Outer surface curved and sloping, and very coarsely tooled. Grinding face concave, worn smooth but with many small voids and pits to maintain abrasive quality. Dark grey Millstone Grit, poorly sorted with many angular inclusions of milky quartz, up to 18 x 13mm. Moderate to good milling properties.*
- A3.483 **Quern 12 (Figure 83)** *Context F324, Phase 4: 700mm diam, 110mm thick. Millstone Grit millstone, complete except for minor damage to one side of the eye, incorporated into sunken paved surface F324. This surface was within a rectangular pit [F325] measuring 5.3m long, 2.8m wide and up to 0.83m deep. The sides of the feature sloped steeply and levelled to a flat base. In the south part of the feature some stone slabs had been laid in an upright position, lining the cut over context 821. The millstone had been laid at the northern end of the feature. The backfill of pit F324 was filled by mid brown grey silty clay [264]. This contained four sherds of century pottery dating from 375-420AD, and was later cut by the villa enclosure ditch. The stone is now broken in half, through the eye.*
- A3.484 The central eye is flanked by opposed hopper apertures outer diameter 270mm, all set within a circular depression in the surface of the otherwise flat upper plane. No other fixing features. The grinding face has indistinct dressing tooling. Coarse grained, light reddish brown-grey Millstone Grit, poorly bedded, moderately rounded and poorly sorted, without fossil pits but with some angular quartz inclusions. Iron staining runs through the stone.
- A3.485 **Quern 13** *Context 905, Phase 4: 70mm x 45mm x 35mm thick. A worn fragment of Mayen lava quern (edges worn, but preserving the original thickness).*



### **Vitrified materials**

- A3.486 The majority of slag from the site falls into two main types: those indicative of ironworking, possibly smithing; and those created during a range of pyrotechnic processes, and not necessarily indicative of metalworking. The association of these two main types in contexts 114 and 286 in this instance indicates that they were likely to have formed during the same process; most can be attributed to ironworking activities. A full catalogue of the material is retained in the archive.

### **Diagnostic slags**

#### *Plano-convex hearth bottoms*

- A3.487 Evidence for the smithing of iron generally comes in two main forms: bulk slags and micro-slags. Of the bulk slags only plano-convex hearth bottoms (PCHB) are unlikely to be confused with the waste products of smelting and are therefore considered to be diagnostic of smithing (Starley 2000, 338). Smelting cakes are characteristically larger in size and weight than those produced during smithing, and often have large charcoal inclusions or impressions (McDonnell 1994, 229-30). Although the majority of hearth bottoms from Quarry Farm were fragmentary, none appear to be of sufficient size to be smelting cakes.

- A3.488 Smithing hearth bottoms are an accumulation of slag formed in a hearth or pit as the result of high-temperature reactions between the iron, iron-scale and silica from either the clay furnace lining or sand used as flux by the smith. Hearth bottoms are recognisable by their characteristic plano-convex form, having a rough convex base and a smoother, vitrified, upper surface which is flat or even slightly hollowed as a result of the downward pressure of the air blast from the tuyère.

- A3.489 A total of 21 hearth bottom fragments was recovered (2200g) from contexts 114 and 286, representing at least nine items. The only complete example weighs 215g and is 98mm in diameter. A further four possible fragments were identified (189.5g).

#### *Unclassified slags*

- A3.490 The remaining bulk slags from these two contexts (1830g) are fractured and small. Such slags are a common component within a slag assemblage and can be produced during both iron smelting and smithing. Differentiating between the two through visual examination alone is difficult, and for this reason such slags are often referred to as undiagnostic slags. This includes one fragment which is an amalgam of amorphous dense iron slag and burnt earth. Although the majority are magnetic, a small amount (152g) are not, but are similar enough in form to suggest they were produced during the same or a similar process.

### **Non-diagnostic slags**

#### *Vitrified hearth or furnace lining*

- A3.491 544g of material from these contexts is vitrified hearth or furnace lining. Due to the direct association with diagnostic ironworking debris, it is likely that this material is fragments of the dismantled hearth used during these activities. Hearth lining forms as a result of a high-temperature reaction between the clay lining of the hearth / furnace and the alkali fuel ashes or iron slag. Often the material shows a compositional gradient from unmodified fired clay on one surface to an irregular cindery material on the other (Starley 2000, 339). Some of the pieces have attached iron slag, confirming the association with ironworking.

*Tuyère fragment*

- A3.492 *Context 286, L 155 W 135 T 49mm.* A large, flat, almost circular fragment of hearth lining with a large tapering sub-circular hole (D 28mm) near its centre was recovered from context 286. None of the original edges remain. This hole identifies it as a tuyère, which would have directed the air blast from the bellows to a hearth or furnace. It also acted to protect the combustible leather and wooden bellows from the fierce heat. The weight of the bellows pressing down on the hole has created a slightly everted rim on the external face.

**Non-magnetic vitrified material**

- A3.493 Many items classed as ‘slag’ during excavation cannot be directly related to ironworking and are best viewed as vitrified material. This is formed when material such as earth, clay, stones or ceramics is subjected to high temperatures, for example in a hearth. During heating these materials react, melt or fuse with alkali in ash, producing glassy (vitreous) and porous materials. These can be formed during any high-temperature pyrotechnic process and are not necessarily indicative of industrial activity. This accounts for 280g of material from contexts 114 & 286 and, in this instance, is directly associated with ironworking residues.

**Other materials**

- A3.494 Amongst the material from contexts 114 and 286 were two fragments of non-magnetic vitrified material of a different character which may be glass-working waste. These are small fragments of white vitrified, vesicular material which are light and brittle in appearance. Both fragments have surfaces of translucent light green-blue glassy material which is not consistent with iron-working residue.

## Appendix 4: finds data tables

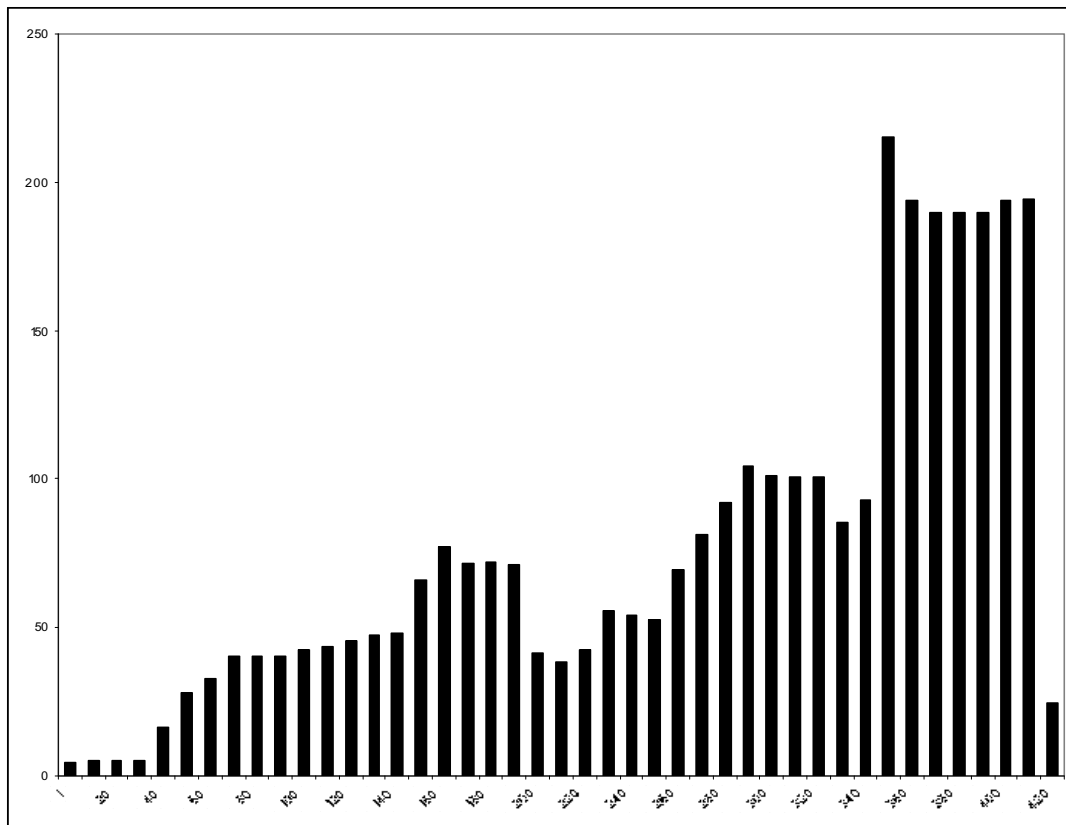
**Table 4.1:** Prehistoric pottery

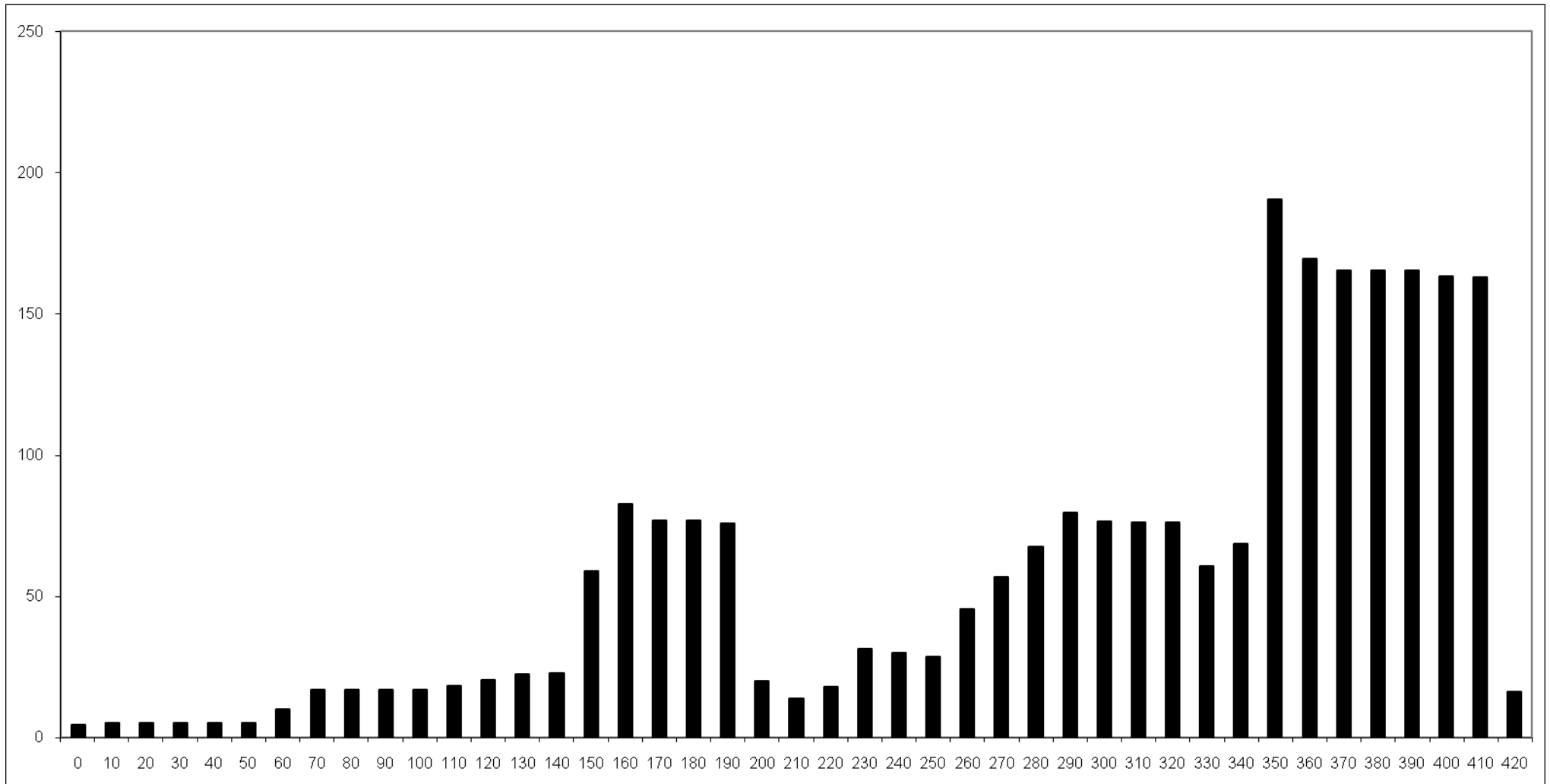
Vessel no.	Context no.	Comment
1	283	From fill of pit F284, possibly later Neolithic in date
2	283	From fill of pit F284, possibly early Bronze Age in date
3	283	From fill of pit F284, possibly later Neolithic in date.
4	721	From pit F724, Beaker, early Bronze Age in date
5	722/723	From pit F724, Beaker, early Bronze Age in date
6	722	From pit F724, Beaker, early Bronze Age in date
7	898	From fill of gully F1002, possible Beaker, early Bronze Age in date

**Table 4.2:** Major fabric class proportions in the Quarry Farm stratified assemblage

FC	Ware type	No%	Wt%	MV%	RE%
A	Amphora	0.70%	4.36%	0.00%	0.00%
B	Black Burnished	2.09%	1.54%	3.57%	4.11%
C	Shell	1.07%	0.93%	3.57%	4.17%
F	Fine	1.44%	0.99%	1.98%	3.51%
G	Gritted	58.38%	60.20%	39.29%	37.29%
M	Mortaria	2.14%	3.70%	6.75%	6.80%
O	Oxidised	2.14%	0.34%	1.19%	1.22%
P	Prehistoric	1.07%	1.51%	0.00%	0.00%
Q	White slip	0.09%	0.07%	0.00%	0.00%
R	Reduced	17.88%	19.40%	25.79%	34.94%
S	Samian	1.44%	0.62%	2.38%	0.96%
W	Whiteware	0.74%	0.54%	0.40%	0.43%
Z	Anglian	10.82%	5.82%	15.08%	6.57%
N		2153	46941	252	3529

**Table 4.3:** Date distribution plot by RE by decade for all





**Table 4.4:** Normalised plot of RE by decade for all pottery with a date range of less than 200 years

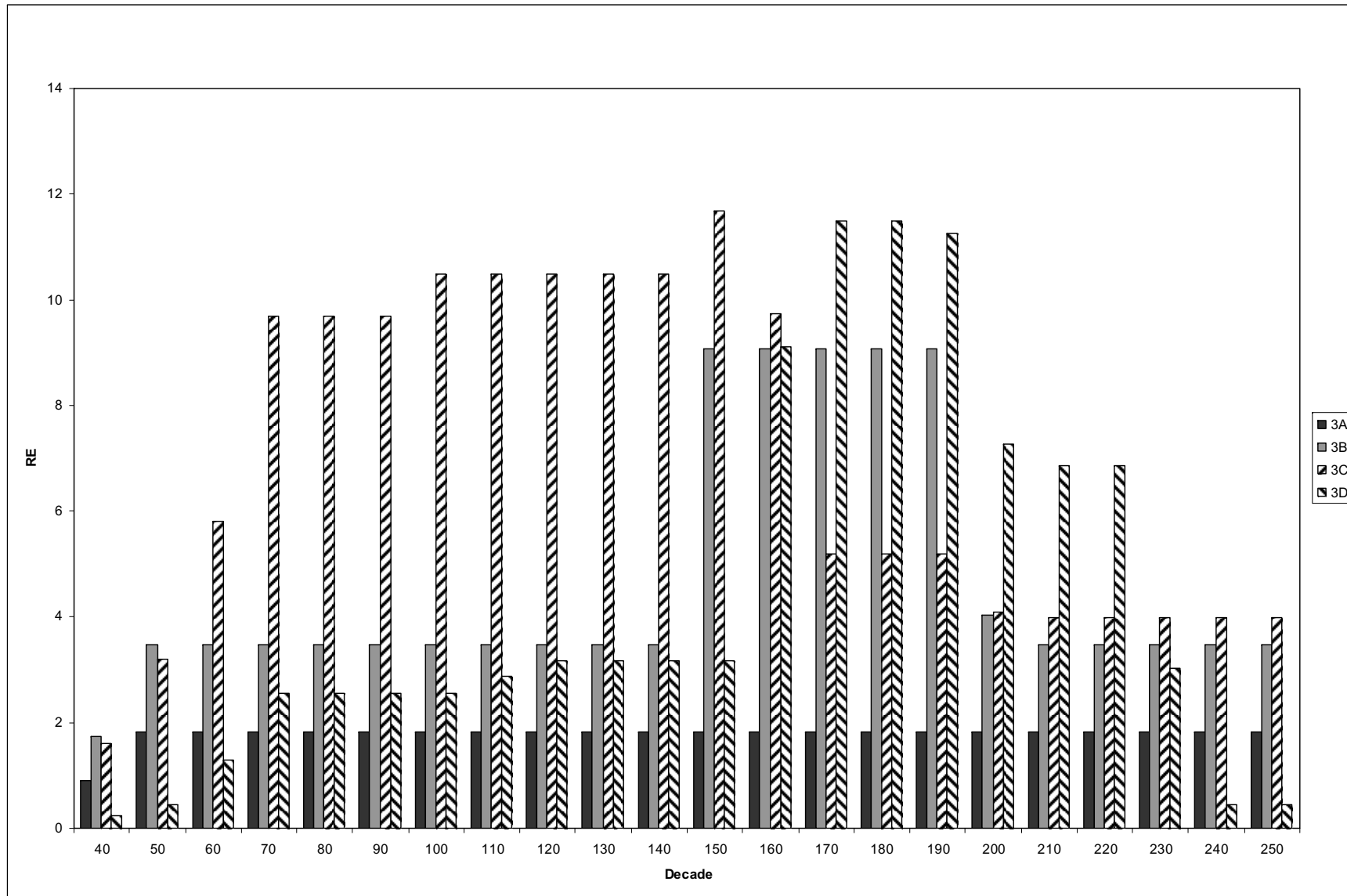
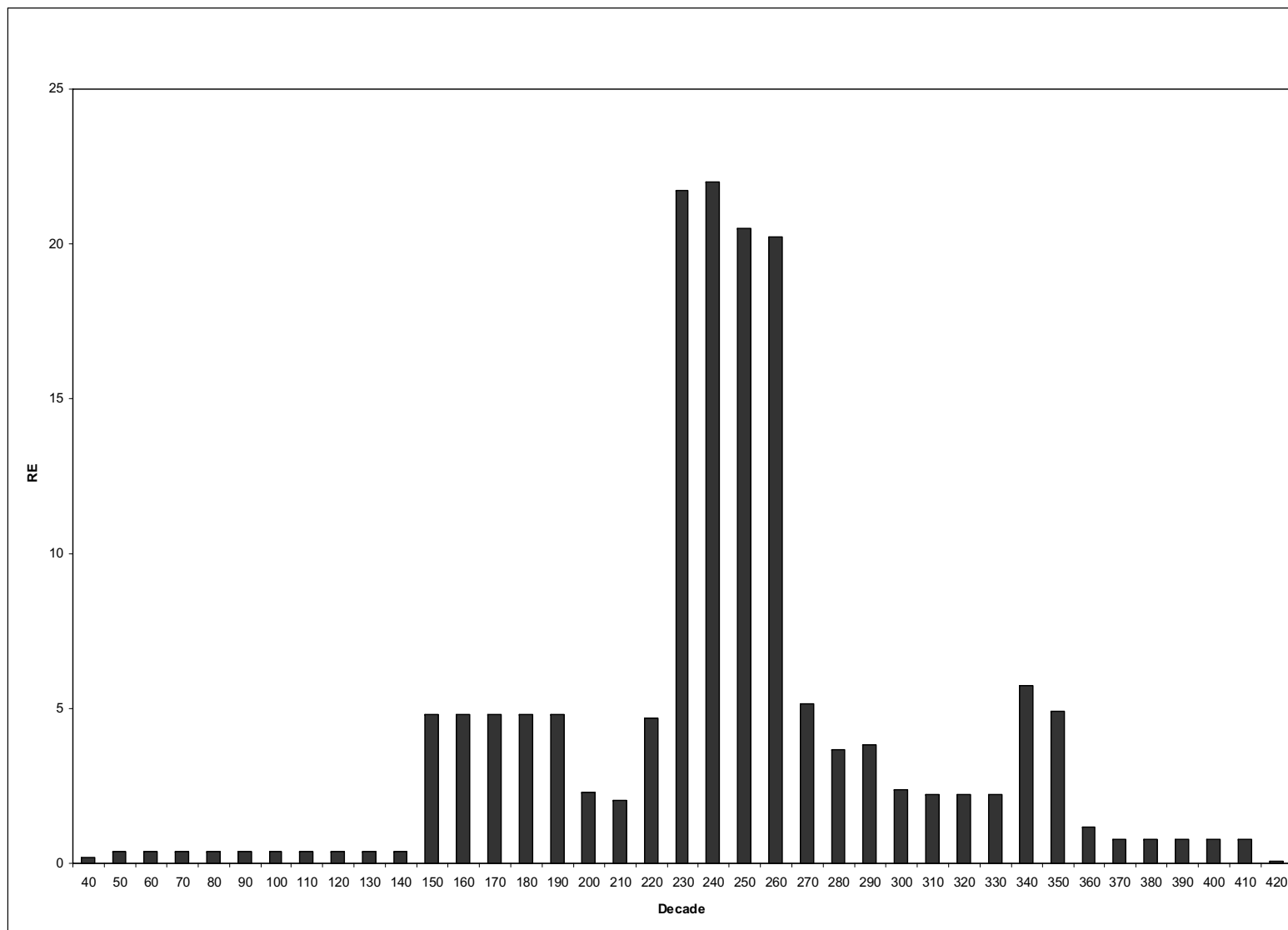


Table 4.5: Normalised RE by decade in Phase 3



**Table 4.6:** Normalised RE by decade in Phase 4

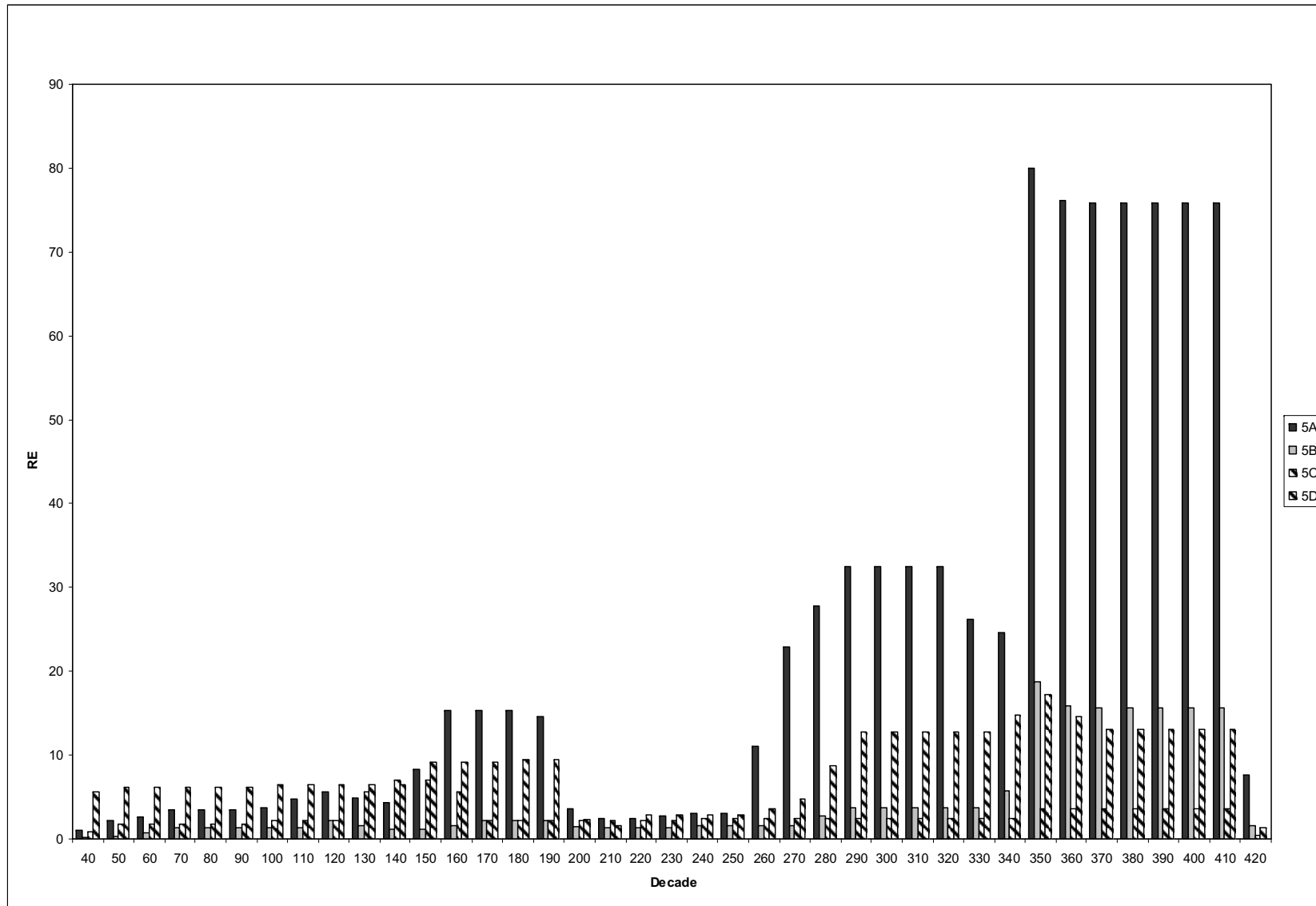
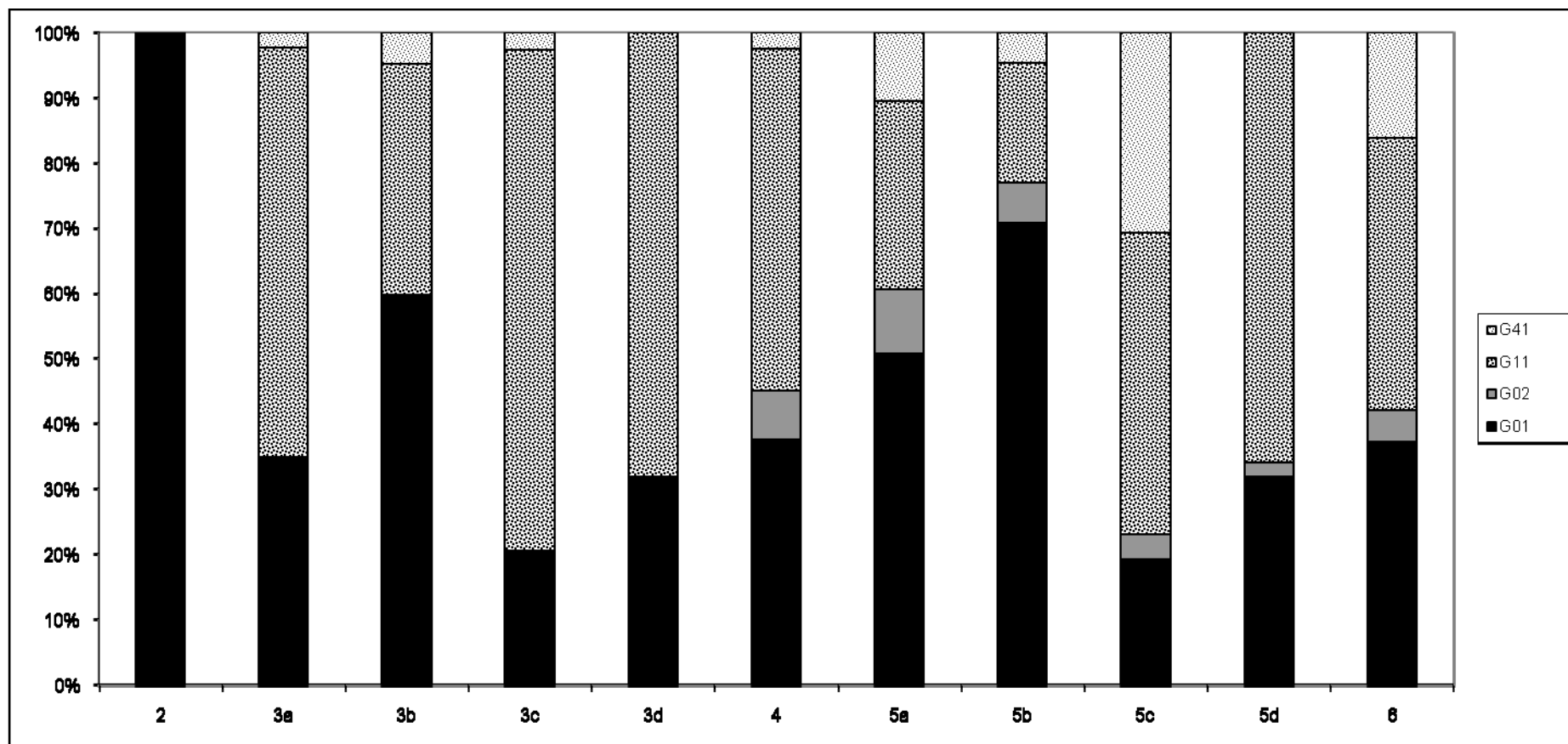


Table 4.7: Normalised RE by decade in Phase 5



**Table 4.8:** Occurrence of gritted wares at quarry farm as a proportion of Class G00 by NoSH



**Table 4.9:** Fabric supply to Quarry Farm by supplier type

Proximity	No%	Wt%	MV%	RE%	BE%
Close Regional	0.33%	0.26%	0.40%	0.91%	0.44%
Far Regional	2.60%	1.93%	5.56%	5.81%	1.23%
Import	2.14%	4.97%	2.38%	0.96%	2.58%
Local?	34.09%	33.85%	28.17%	17.14%	8.23%
Regional	48.77%	49.47%	57.14%	67.02%	71.28%
Unknown	5.06%	1.92%	1.98%	1.79%	8.49%
<i>N</i>	2153	46941	252	3529	2284

**Table 4.10:** Fabric B01 and B10 as a proportion of all pottery by phase

Fabric	Phase	No%	Wt%	MV%	RE%	BE%	<i>Nno</i>	<i>Nwt</i>	<i>Nmv</i>	<i>Nre</i>	<i>Nbe</i>
B01	3c	0.7%	0.0%	0.0%	0.0%		147	7139	6	213	204
B01	3d	1.2%	0.7%	20.0%	5.3%		85	1641	5	94	67
B01	4	21.3%	21.8%	18.2%	49.3%		80	1214	11	152	83
B01	5a	0.2%	0.0%	0.0%	0.0%		449	9639	67	903	630
B01	5c	5.1%	4.3%	8.3%	12.2%	8.1%	79	2108	12	131	246
B01	5d	12.6%	8.4%	10.0%	6.3%		143	3106	20	384	208
B10	3b	1.1%	0.9%	20.0%	4.9%		91	1857	5	144	71
B10	3d	1.2%	3.5%	20.0%	8.5%	11.9%	85	1641	5	94	67
B10	5a	0.2%	0.2%	1.5%	1.1%		449	9639	67	903	630

**Table 4.11:** Percentages of vessels in fabric G01 in different functional types

	Storage jars	Jars	Wide-mouthed jars	Bowls	Dishes	<i>N</i>
MV	8.9	71.1	13.3	2.2	4.4	45
RE	11.4	70.1	13.1	1.6	3.9	571%

**Table 4.12:** Functional analysis of vessels in Fabric G11 from Quarry Farm

	Jar	Dish	Other	<i>N</i>
MV	74%	21%	6%	34
RE	77%	11%	11%	378

**Table 4.13:** Fabric G11 by phase

Phase	No%	Wt%	MV%	RE%	BE%	<i>Nno</i>	<i>Nwt</i>	<i>Nmv</i>	<i>Nre</i>	<i>Nbe</i>
3a	37.5%	48.2%	42.9%	53.7%		72	1368	7	95	37
3b	31.9%	33.4%	40.0%	20.8%	26.8%	91	1857	5	144	71
3c	58.5%	88.8%	16.7%	46.9%	27.0%	147	7139	6	213	204
3d	52.9%	46.7%	20.0%	18.1%	16.4%	85	1641	5	94	67
4	26.3%	19.2%	18.2%	9.9%		80	1214	11	152	83
5a	17.4%	13.5%	16.4%	4.9%	9.7%	449	9639	67	903	630
5b	10.4%	9.1%	6.7%	2.2%		115	3012	15	178	213
5c	15.2%	3.4%	25.0%	38.2%		79	2108	12	131	246
5d	21.7%	15.2%	20.0%	8.1%	13.0%	143	3106	20	384	208
6	23.3%	18.7%	4.8%	2.6%	2.9%	868	15137	104	1235	525

**Table 4.14:** Fabric G41 by phase

Phase	No%	Wt%	MV%	RE%	BE%	Nno	N wt	N mv	N re	N be
3a	1.4%	0.6%	0.0%	0.0%		72	1368	7	95	37
3b	4.4%	4.1%	0.0%	0.0%		91	1857	5	144	71
3c	2.0%	0.4%	16.7%	4.2%		147	7139	6	213	204
4	1.3%	1.0%	0.0%	0.0%		80	1214	11	152	83
5a	6.5%	4.8%	9.0%	11.4%	4.9%	449	9639	67	903	630
5b	2.6%	6.7%	0.0%	0.0%	26.3%	115	3012	15	178	213
5c	10.1%	14.2%	8.3%	3.1%	14.6%	79	2108	12	131	246
6	9.1%	11.7%	2.9%	8.8%	10.3%	868	15137	104	1235	525

**Table 4.15:** Proportions of mortaria fabrics from Quarry Farm

Fabric	No%	Wt%	MV%	RE%	BE%
M01	40%	37%	50%	51%	50%
M02	11%	10%	13%	9%	
M03	2%	2%	0%	0%	
M04	18%	18%	13%	13%	
M05	2%	2%	6%	4%	
M11	2%	8%	0%	0%	50%
M12	20%	18%	13%	18%	
M21	2%	5%	6%	5%	
M22	2%	1%	0%	0%	
<b>N</b>	<b>45</b>	<b>1639</b>	<b>16</b>	<b>233</b>	<b>104</b>

**Table 4.16:** Functional analysis of vessels in fabric R09

Function	F	CJ	J	SJ	BK	B	D	N
MV	0%	0%	4%	0%	0%	71%	25%	24
RE	0%	0%	5%	0%	0%	78%	17%	343

**Table 4.17:** Functional analysis of vessels in fabric R11 (by min number of rims and RE)

	Jars	Bowls	Dishes	N
MV	9%	46%	46%	11
RE	23%	50%	27%	103%

**Table 4.18:** Functional composition from site as a whole.

Function	RE%	MV%
F	6.26%	1.19%
CJ	5.21%	1.98%
J	51.91%	54.76%
SJ	3.83%	2.38%
WMJ	2.13%	2.38%
BK	0.85%	1.19%
C	0.37%	0.79%
M	6.80%	6.75%
B	14.28%	15.48%
D	6.97%	11.90%
L	1.05%	0.79%
O	0.34%	0.40%
<b>N</b>	<b>3529</b>	<b>252</b>

**Table 4.19:** Functional composition by RE as a proportion of each phase

Phase	F	CJ	J	SJ	WMJ	C	BK	M	B	D	L	O	N
3a-d	3.6%	17.3%	52.3%				1.9%	4.8%	8.7%	11.4%			578
5a	11.3%	3.9%	47.8%	1.0%	7.8%			9.5%	14.4%	3.7%	0.6%		883
5b			43.8%	18.5%				7.9%	20.8%	9.0%			178
5d	26.3%		27.1%					4.2%	37.4%	5.0%			380
6		2.0%	55.2%	9.2%	0.6%		1.0%	8.1%	11.9%	8.8%	3.2%		1008

**Table 4.20:** Functional composition by MV as a proportion of each phase (Roman only)

Phase	F	CJ	J	SJ	WMJ	BK	C	M	B	D	L	O	N
3a-d	3.9%	3.9%	34.0%			3.8%		7.7%	19.2%	26.9%			26
5a	1.5%	3.0%	50.0%	1.5%	7.6%			9.1%	16.7%	9.1%	1.5%		66
5b			46.7%	6.7%				6.7%	33.3%	6.7%			15
5d	5.3%	0.0%	47.4%					5.3%	21.1%	21.1%	0.0%		19
6		1.5%	50.7%	6.0%	1.5%	1.5%		7.5%	14.9%	14.9%	1.5%		67

**Table 4.21:** Proportions of finewares for entire site

No%	Wt%	MV%	RE%	BE%
3.86%	3.05%	7.94%	3.86%	13.62%
2153	46941	252	3529	2284

**Table 4.22:** Fine ware by phase

Phase	No%	Wt%	N no	N wt
3a	6.94%	12.94%	72	1368
3b	2.20%	1.51%	91	1857
3c	4.08%	0.43%	147	7139
4	3.75%	2.47%	80	1214
5a	3.56%	5.76%	449	9639
5b	9.57%	4.35%	115	3012
5c	6.33%	2.56%	79	2108
5d	11.89%	2.29%	143	3106
6	2.07%	2.35%	868	15137

**Table 4.23:** Quantities of pottery by phase at Quarry farm

Phase	Period	No%	Wt%	MV%	RE%	BE%
1	Early Prehistoric	0.0%	0.0%	0.0%	0.0%	
2	Late Prehistoric	1.1%	1.5%	0.0%	0.0%	
3a	Early Romano British	5.0%	4.2%	3.6%	3.1%	5.6%
3b	Early Romano British	4.6%	4.3%	2.4%	4.4%	3.2%
3c	Early Romano British	7.3%	15.6%	2.8%	6.5%	9.1%
3d	Early Romano British	4.8%	4.3%	2.0%	2.7%	3.6%
4	Romano-British	2.9%	1.7%	4.0%	4.1%	1.4%
5a	Late Romano-British	18.2%	18.5%	26.1%	25.2%	23.7%
5b	Late Romano-British	5.3%	6.5%	6.0%	5.1%	9.5%
5c	Late Romano-British	3.6%	4.4%	4.4%	3.5%	11.0%
5d	Late Romano-British	6.7%	6.6%	7.6%	10.9%	9.3%
6	Anglian	40.3%	32.3%	41.0%	34.5%	23.5%
	N	2133	46456	249	3494	2232

**Table 4.24:** Quantities of sherds from different feature types from Quarry Farm

Context type	No	Wt	Average sherd weight	MV	RE	Average % rim per vessel
Layers	630	13458	21.4	97	1304	13.4-
Demolition layers	1	1	1-	0	0	0
Floor layer	20	388	19.4-	1	35	35+
Posthole & beam slot & foundation trench	93	1526	16.4-	9	89	9.9-
Pit	461	14893	32.3+	44	762	17.3+
Ditch / gully	392	7244	18.5-	52	844	16.2+
Hearth	20	267	13.4-	3	18	6-
Feature	480	8110	16.9-	42	509	12.1-
Grave	9	75	8.3-	1	13	13-
Wall	17	334	19.6-	3	35	11.7-
Corn dryer	12	145	12.1-	1	11	11-
N	2135	46.441kg	21.8	253	3620%	14.3

**Table 4.25:** Percentage of sherds from different feature types from Quarry Farm

Context type	% Nosh	% Wt	% MV	% RE
Layers	29.5	29.0	38.3	36.0
Demolition layers	0.1	0.0	0	0
Floor layer	0.9	0.8	0.4	1.0
Posthole & beam slot & foundation trench	4.4	3.3	3.6	2.5
Pit	21.6	32.1	17.4	21.0
Ditch /gully	18.4	15.6	20.6	23.3
Hearth	0.9	0.6	1.2	0.5
Feature – general	22.5	17.5	16.6	14.1
Grave	0.4	0.2	0.4	0.4
Wall	0.8	0.7	1.2	1.0
Corn dryer	0.6	0.3	0.4	0.3
N	2135	46.441kg	253	3620%

**Table 4.26:** Percentage of sherds from different feature types from Worcester Magistrates Court site

Context type	% Nosh	% Wt	Average sherd weight	% Min no rims	% RE	Average % rim per vessel
Layers	12.7	11.5	16.3g-	13.7	12.4	8.3-
Road/metalled layers	58.9	48.2	14.6g-	49.8	41.1	7.6-
Postholes / beam slots	4.8	4.5	16.9g-	5.7	5.7	9.1-
Pits	8.0	9.2	20.8g+	9.2	11.3	9.9+
Ditches	13.2	22.3	30.2g+	16.4	24.0	13.4+

Context type	% Nosh	% Wt	Average sherd weight	% Min no rims	% RE	Average % rim per vessel
Wells	0.1	0.1	14.1g-	0.1	0.1	6.3-
Graves	0.02	0.2	205.5g+	0.03	0.3	100+
Wall	0.1	0.1	22.3g+	0.1	0.1	8.3-
Hearth / oven	0.9	1.3	27.1g+	1.2	1.4	11.3+
Other	0.5%	0.8	-	0.33	0.7	-
N	29098	520210	17.9g	3260	30007%	9.2%

**Table 4.27:** Repairs noted in catalogue

	No%	Wt%	MV%	RE%
Repairs	0.14%	0.28%	0790%	0.54%
N	2153	46941	252	3529

**Table 4.28:** Repaired sherds listed

Phase	Context	Fab	Part	FT:	No	Weight	MV	RE	RD	Repair	Drawing
5a	1278	R09	Rim	B1.1	1	78	1	11	22	Rivet hole	236
6	720	G41	Body		1	28	0	0	02	Rivet Holes	
6	763	G41	Rim	J1.1	1	24	1	8	18	Rivet Hole	27

**Table 4.29:** Cross-joins

Fabric	Form	Dr	Context type:	Cxt	Phase	Joins	Cxt	Phase	Type
G02	J1.1	220	Pit	1083	5a	→	668	6	Layer
S31	Bdr37		Layer	236	5a	→	233	5c	Layer
G41	J2.1	22	Gully	711	5a	→	719	5a	Layer
R13	CJ1.1	18	Layer	719	5a	→	763	6	Pit
R12	SJ1.1	6	Feature - general	720	6	→	725	6	Feature - general

**Table 4.30:** Listed complete vessels

Drawing	Part	Fabric	Form	Phase	Type	Cxt	No	Wt	MV	RE
1	Complete Vessel	G11	J1.1	3c	Pit	882	81	6215	1	100

**Table 4.31:** Burnt sherds as a proportion of each ware

Ware	Type	No%	wt%	MV%	RE%	BE%	Nno	Nwt	Nmv	Nre	Nbe
A	Amphora	20.0%	12.5%				15	2045	0	0	
B	Black Burnished	46.7%	70.3%	55.6%	71.7%	100.0%	45	723	9	145	28
C	Shell	47.8%	74.7%	66.7%	78.2%		23	435	9	147	10
F	Fine	19.2%	20.3%	28.6%	24.8%	13.9%	52	1142	14	258	252
G	Gritted	30.0%	42.9%	31.3%	40.9%	36.4%	1257	28257	99	1316	1057
M	Mortaria	21.4%	22.7%	33.3%	28.9%		28	1130	9	121	52
O	Oxidised	4.3%	4.4%	0.0%	0.0%		46	158	3	43	7
P	Prehistoric						23	709	0	0	
R	Reduced	10.6%	16.7%	20.0%	22.7%	4.6%	385	9108	65	1233	632
S	Samian						31	290	6	34	59
Q	White slip	50.0%	87.5%			100.0%	2	32	0	0	41
W	Whiteware	30.8%	18.8%			61.7%	13	181	0	0	94
Z	Post-Medieval	7.7%	10.7%	10.5%	14.2%	80.8%	233	2731	38	232	52

**Table 4.32:** Sooting by function, as a proportion of the total assemblage

Function	MV%	RE%	<i>N mv</i>	<i>N RE</i>
<b>J</b>	30%	46%	138	1832
<b>M</b>	35%	39%	17	240
<b>B</b>	23%	28%	39	504
<b>D</b>	20%	17%	30	246
<b>L</b>	100%	100%	2	37
<b>O</b>	100%	100%	1	12

**Table 4.33:** MSW and M%R for main fabrics for Phase 5 and Phase 6

Fabric	Phase	MSW	M%R	<i>No</i>	<i>Wt</i>	<i>Mv</i>	<i>RE</i>
<b>G01</b>	5a	26.01	12.46	123	3199	13	162
<b>G01</b>	5b	25.02		46	1151	3	62
<b>G01</b>	5d	14.58		14	204	2	24
<b>G01</b>	6	18.73	12.22	181	3390	23	281
<b>G11</b>	5a	17.04	4.00	73	1244	12	48
<b>G11</b>	5d	15.23		31	472	4	31
<b>G11</b>	6	14.01		203	2844	5	32
<b>R09</b>	5A	22.81	11.50	43	981	10	115
<b>R09</b>	5d	50.76		21	1066	2	109
<b>R09</b>	6	44.23	9.13	22	973	8	73
<b>Z11</b>	6	12.08	6.14	188	2271	37	227

**Table 4.34:** Mean sherd weight (MSW) and Mean percentage rim (M%R) for phases 5 and 6

Fabric	Phase	MSW	M%R	<i>No</i>	<i>Wt</i>	<i>MV</i>	<i>RE</i>
<b>G01</b>	5	24.13	13.78	206	4970	18	248
<b>G01</b>	6	18.73	12.22	181	3390	23	281
<b>G11</b>	5	16.00	6.65	135	2159	20	133
<b>G11</b>	6	14.01	6.40	203	2844	5	32
<b>R09</b>	5	27.94	17.67	94	2626	15	265
<b>R09</b>	6	44.23	9.13	22	973	8	73
<b>Z11</b>	6	12.08	6.14	188	2271	37	227

**Table 4.35:** Comparison of MSW and M%R by context type for phases 5 and 6

		Phase 5	Phase 6	Phase 5	Phase 6				
Fabric Code	Context type	MSW	MSW	M%R	M%R	<i>No (5)</i>	<i>No (6)</i>	<i>MV(5)</i>	<i>MV(6)</i>
<b>G01</b>	<b>Ditch</b>	22.94	16.00	12.33	7.00	32	4	3	1
<b>G01</b>	<b>Feature</b>	22.26	17.63	7.00	15.60	39	32	1	5
<b>G01</b>	<b>Layer</b>	21.24	18.48	19.57	11.92	71	124	7	13
<b>G01</b>	<b>Pit</b>	29.92	22.38	14.00	10.25	50	21	3	4
<b>G11</b>	<b>Ditch</b>	21.90	13.58	4.00	6.50	21	12	3	2
<b>G11</b>	<b>Feature</b>	44.00	13.30		5.00	1	118	0	1
<b>G11</b>	<b>Layer</b>	13.71	14.45	6.86	7.00	62	44	7	1
<b>G11</b>	<b>Pit</b>	16.44	16.41	7.22	7.00	46	29	9	1

		Phase 5	Phase 6	Phase 5	Phase 6				
Fabric Code	Context type	MSW	MSW	M%R	M%R	No (5)	No (6)	MV(5)	MV(6)
R09	Ditch	12.91	97.00	14.00		34	1	5	0
R09	Layer	16.73	49.88	12.00	9.13	198	16	1	8
R09	Pit	49.5	12.33	40.00		24	3	3	0

**Table 4.36:** Fabric composition of assemblages at Quarry Farm (QF), Scorton (Scor), Catterick Town (Cat), Piercebridge (PB), Newton Kyme (NK), West Heslerton cemetery (WH) & Parlington Hollins (PH) & Sancton (Sanc) by sherds count

Site/Fabric group	Scor	Cat	QF	PB	WH	PH	NK	Sanc
AS1+AS 11+AS 15 SST	36.2%	43.9%	-	48.5%?	35%	76.6%	52%	48.8
AS 6+AS 7+AS 8 CHARN	50.0%	46.9%	100.0%	50.5%	17%	14.3%	28%	14.7
AS 3 Grog	-	0.2%	-	-	-	-	-	1.2%
AS 5 Ironstone	-	0.5%	-	-	-	9.1%	-	4.9%
AS 12 Organics & some sand	4.4%	0.7%	-	-	4%?	-	13%	5.9%
AS 2+AS 9+AS10+ AS 13 Calcareous	7.3%	7.0%	-	0	43%	-	1%	22.1
Shell	-	-	-	1%	-	-	-	-

**Table 4.37:** Sites yielding Anglian pottery within a 20 mile radius of Quarry Farm

Name	County	Archive Site No.	Only Card Index	Nat. Grid	No. of Stamps
Catterick	N. Yorks	252	—	SE 2497	5
Darlington	Co. Durham	031	—	NZ 2915	1
Piercebridge	Co. Durham	351	—	NZ 2116	2
Ingleby Barwick: High Leven	Co. Durham	388	Photos	NZ 4512	4
Scorton	N. Yorks	386	—		8

**Table 4.38:** Rarity of stamps

1–20	Rare	21–40	Uncommon
41–70	Fairly common	71–100	Reasonably common
100–150	Common	151+	Very common

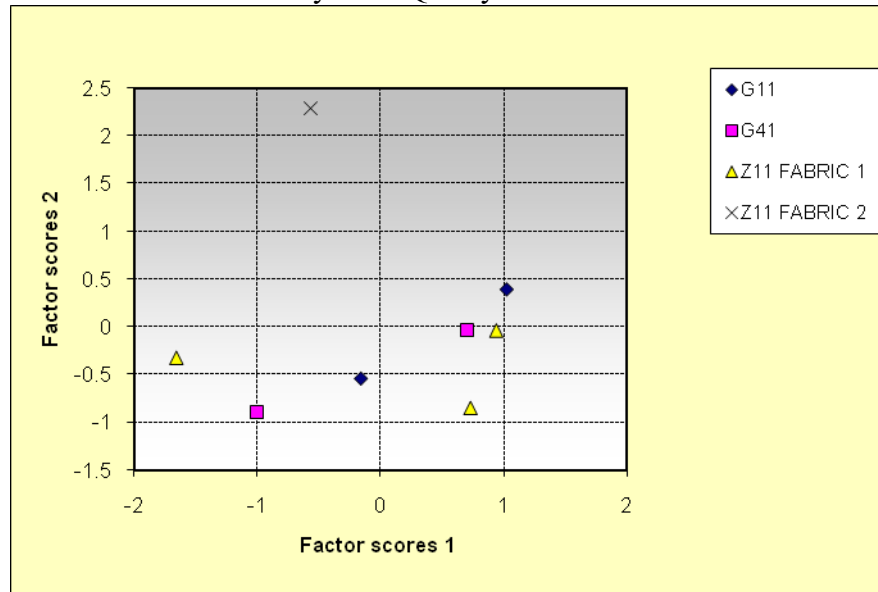
**Table 4.39:** Pottery submitted for thin section and chemical analysis

TSNO	Site code	Context	REFNO	cname
V4008	QF03	641		G11
V4009	QF03	1007		G11
V4010	QF03	271		G41
V4011	QF03	719 AND 711		G41
V4012	QF03	U/S?		Z11
V4013	QF03	U/S?		Z11
V4014	QF03	114		Z11
V4015	QF03	136		Z11

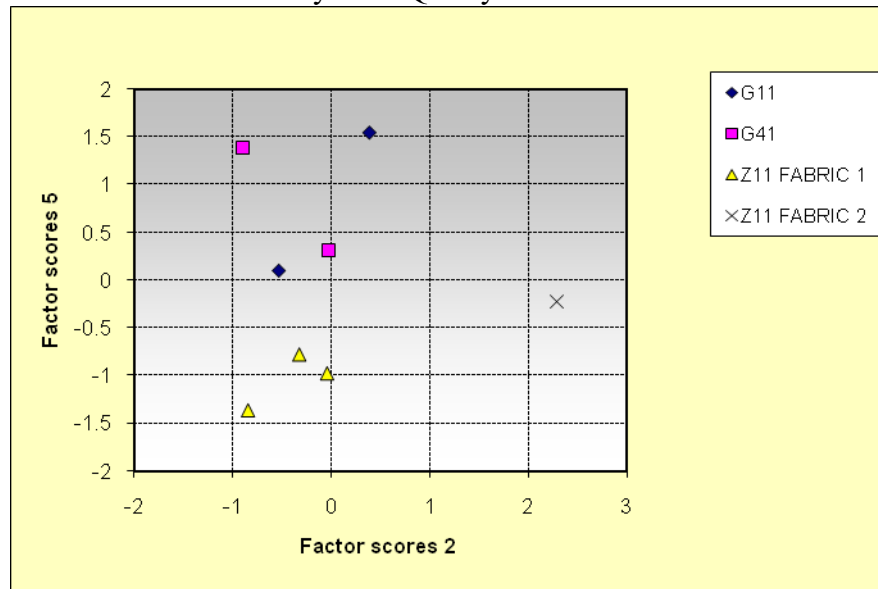
**Table 4.40:** ICPS analysis of crushed samples

Element	G11	G41	Z11 1	Z11 2
CaO	Higher than remainder			
Na2O				Higher than remainder
K2O				Lower than remainder
TiO				Higher than remainder
P2O5	Higher than remainder			
Ba	Higher than remainder			Lower than remainder
Cr	Lower than remainder			
Cu				Higher than remainder
Li				Higher than remainder
Zr		Lower than remainder		Higher than remainder
Ce	Higher than remainder			

**Table 4.41:** Factor analysis of Quarry Farm ICPS results

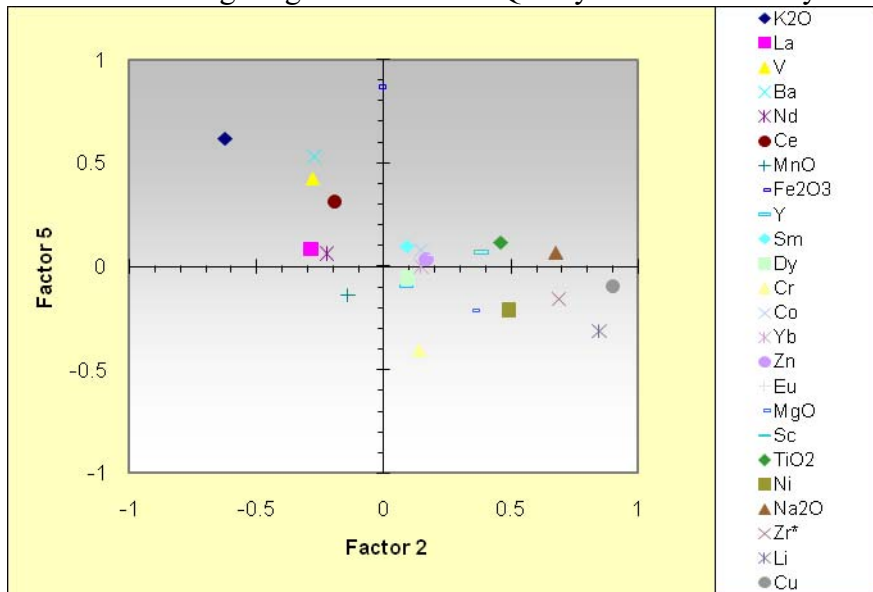


**Table 4.42:** Factor analysis of Quarry Farm ICPS results

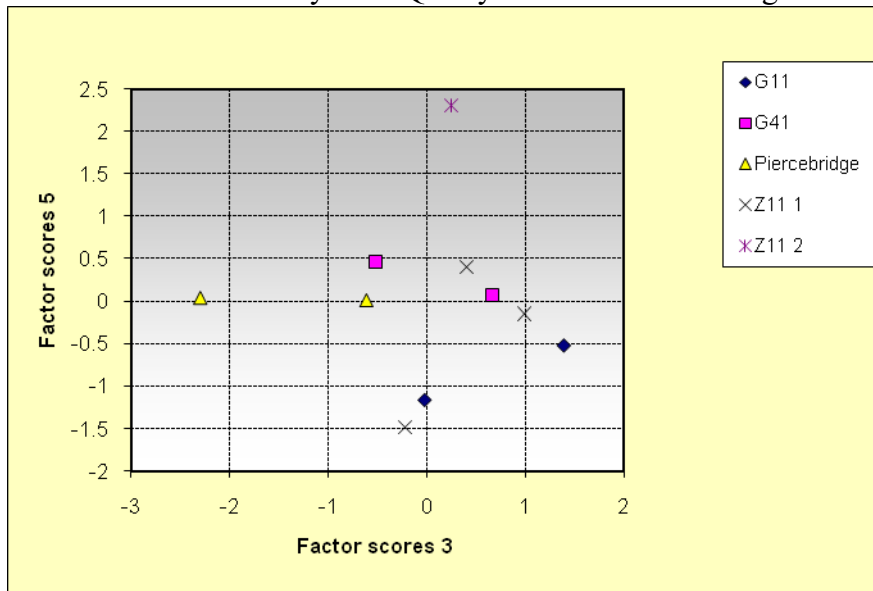




**Table 4.43:** Weighting of elements in Quarry Farm ICPS analyses



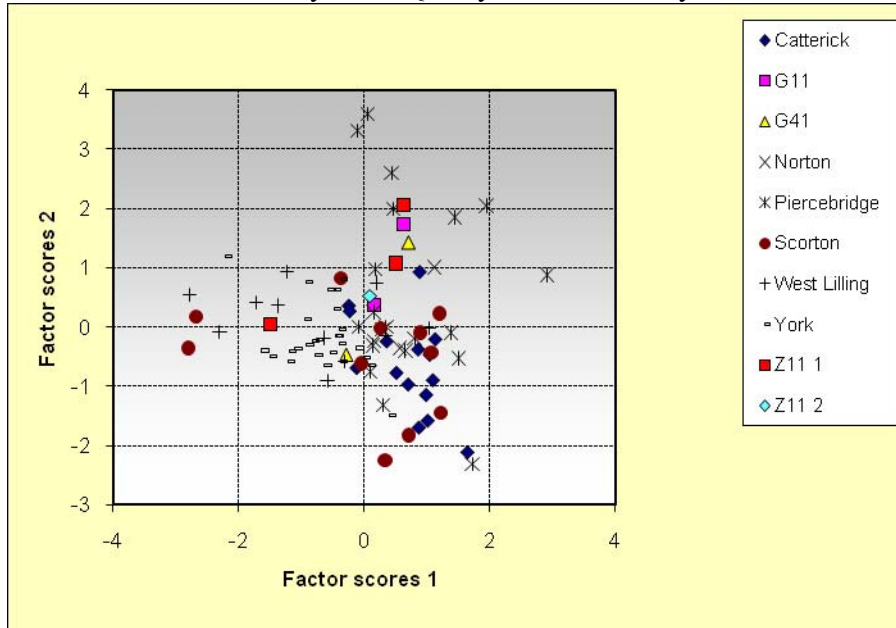
**Table 4.44:** Factor analysis of Quarry Farm and Piercebridge fabrics



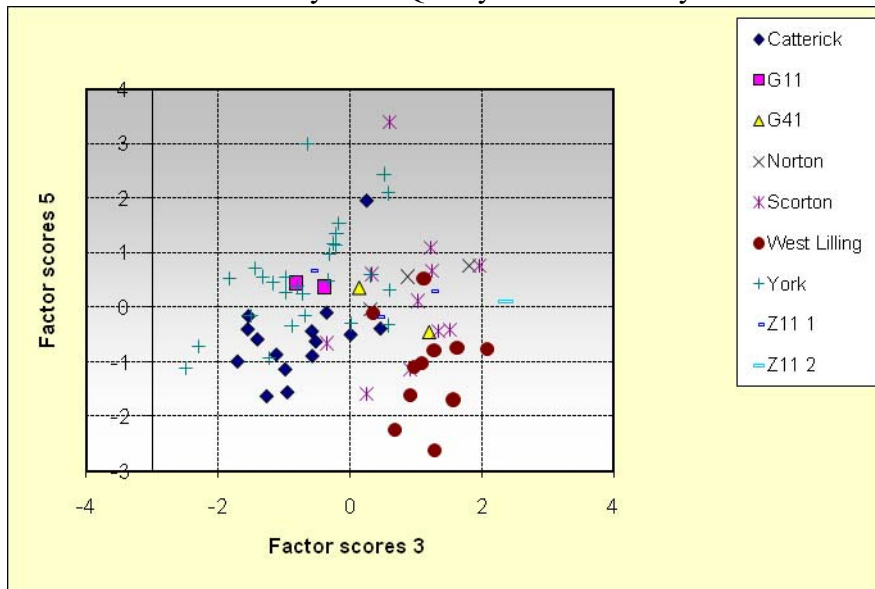
**Table 4.45:** Early AS fabrics used in comparative ICPS analysis

Locality	Site Name	Site code	Total
Catterick	Catterick Bridge 1983	5128	7
	Catterick Triangle 1987-8	5563	8
Norton	Norton A.S. Cemetery	Norton	4
Piercebridge		HH69	2
		HH70	3
		HS76	6
		HS77	4
		HS78	3
		HS80	1
Scorton	Scorton Quarry	Hbs98	11
West Lilling		OSA99EX03	11
York	46-54 Fishergate	1985-6.9	13
	Blue Bridge Lane	YBB01	8
	Heslington Hill	YHS 02	6

**Table 4.46:** Factor analysis of Quarry Farm and early AS fabrics



**Table 4.47:** Factor analysis of Quarry Farm and early AS fabrics



**Table 4.48:** Major elements measured by ICPS analysis

TSNO	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	MgO	CaO	Na <sub>2</sub> O	K <sub>2</sub> O	TiO <sub>2</sub>	P <sub>2</sub> O <sub>5</sub>	MnO
V4008	17.11	3.97	1.21	1.1	0.44	1.98	0.59	1.65	0.106
V4009	13.74	4.27	1.02	1.19	0.49	1.62	0.46	1.75	0.036
V4010	15.67	5.49	0.84	0.46	0.4	2.31	0.73	1.09	0.039
V4011	14.67	4.33	1.06	0.94	0.48	1.77	0.52	1.29	0.063
V4012	15.77	3.53	1.03	0.97	0.6	1.91	0.51	1.22	0.041
V4013	16.83	3.77	1.06	0.85	0.43	1.67	0.64	1.17	0.021
V4014	16.99	4.46	1.17	1.07	0.67	1.51	0.84	0.34	0.034
V4015	16.45	3.92	1.33	0.89	0.42	1.8	0.63	0.17	0.128

**Table 4.49:** Minor elements measured by ICPS analysis

Ba	Cr	Cu	Li	Ni	Sc	Sr	V	Y	Zr*	La	Ce	Nd	Sm	Eu	Dy	Yb	Pb	Zn	Co
880	80	21	94	41	16	159	87	26	67	48	103	50	10	2	5	3	20	171	18
807	76	23	67	42	14	154	75	28	60	42	87	44	10	2	5	3	22	176	10
691	90	23	59	28	13	110	112	15	52	40	79	40	7	1	3	2	24	95	11
590	88	32	83	45	14	111	84	29	46	44	86	46	10	2	5	3	21	149	13
609	113	15	81	34	13	192	83	16	59	36	66	37	6	1	3	2	18	177	12
603	101	30	76	42	15	118	97	32	63	51	91	52	10	2	5	3	27	154	10
547	105	75	120	51	16	115	95	24	82	41	79	42	9	2	4	3	22	150	14
792	123	33	92	60	17	105	93	31	70	48	99	50	11	2	6	3	17	147	13

**Table 4.50:** Summary of the dates of all the samian vessels from Quarry Farm 2003

Date Range	Period	Totals
c AD 120-140	Hadrianic	1
c AD 120-150	Hadrianic/early Antonine	1
c AD 120-200	Hadrianic/Antonine	13
c AD 130-200	Hadrianic/Antonine	1
c AD 140-200	Antonine	5
c AD 150-200	Antonine	9
c AD 160-200	Mid-late Antonine	4
c AD 160-230	Mid Antonine/early 3rd century	3
c AD 165-240	Mid-late Antonine/early-mid 3rd century	1
c AD 170-200	Late Antonine	1
c AD 180-250	Late Antonine/mid 3rd century	1
c AD 220-260	Mid 3rd century	1
<b>Total:</b>		<b>41</b>

**Table 4.51:** The incidence of samian sherds from Quarry Farm, 2003, by site phase (pre Phase 5a; there were no instances from phases 3d)

Date of Samian Sherds		Occurrence of these sherds by Phase			
Date Range	Period	3a	3b	3c	4
c AD 120-140	Hadrianic			1	
c AD 120-200	Hadrianic/Antonine	1		1	1
c AD 150-200	Antonine		1	2	1
c AD 170-200	Late Antonine		1		

**Table 4.52:** The incidence of samian from Quarry Farm, 2003, by site phase, from Phase 5a, wherein all sherds will be residual

Date of Samian Sherds		Occurrence of these sherds by Phase					
Date Range	Period	5a	5b	5c	5d	6	7
c AD 120-150	Hadrianic/early Antonine					1	
c AD 120-200	Hadrianic/Antonine	1	2	1	2	2	1
c AD 140-200	Antonine		1				1
c AD 150-200	Antonine	1	1	1			1
c AD 160-200	Mid-late Antonine		1	1		1	1
c AD 160-230	Mid Antonine/early 3rd cent.	1	1				
c AD 165-240	Mid-late Antonine/early-mid 3rd century					1	
c AD 180-250	Late Antonine/mid 3rd cent.				1		
c AD 220-260	Mid 3 <sup>rd</sup> century						1

**Table 4.53:** The composition of the samian sample from Quarry Farm, 2003: numbers of types represented

Form Type:	Source:	Central Gaulish: Lezoux	East Gaulish: Rheinza- bern
<b>Cups:</b>			
Drag. 33		4	2
<b>Decorated Bowls:</b>			
Drag. 30		1	
Drag. 37		5	1
<b>Plain Bowls:</b>			
Drag. 31R		4	
Drag. 38		1	
Curle 23		1	
<b>Bowls or Dishes:</b>			
Indeterminate		2	
<b>Dishes:</b>			
Drag. 18/31		2	
Drag. 31		10	3
Ludowici Ti'			1
<b>Totals:</b>		<b>30</b>	<b>7</b>
(Form not identifiable)		4	

**Table 4.54:** Clay tobacco pipes

Context	Description
U/S	5 stem fragments
1	4 stem fragments; 1 part bowl and spur
145	1 stem fragment
492	4 stem fragments; 1 with makers stamp '... LEYG'; also 1 clay marble
530	1 stem fragment

**Table 4.55:** Fabric descriptions

Code	Properties
<b>A01</b>	Dressel 20 amphorae, Tomber and Dore (1998) BAT AM1. Guadalquivir, Southern Spain. Evans northern fabric series fabric A01.
<b>B01</b>	Black Burnished ware I, Tomber and Dore (1998) DOR BB 1. Williams (1977). Source, Poole Harbour, Dorset. Evans northern fabric series fabric B01.
<b>B10</b>	Black Burnished ware 2, (Williams 1977), Tomber and Dore (1998) COO BB 2. Sources; Essex and Kent. Evans northern fabric series fabric B10.
<b>C11</b>	A wheelmade reduced fabric with a black core, margins and surfaces with common-abundant shell-temper c0.5-3.5mm.
<b>C12</b>	Dalesware, Tomber and Dore (1998) DAL SH. A handmade hard, dark greyware, with common shell fragments c1-10mm, no visible sand temper. Source - north Lincolnshire. Evans northern fabric series fabric G10.
<b>C13</b>	Southern Shell-Tempered ware. Tomber and Dore (1998) HAR SH. A wheelmade reduced ware with abundant shell inclusions, probably fossil. Southern Shell-Tempered ware, probably from Harrold (Brown 1994). Evans northern fabric series fabric G82.
<b>F01</b>	Nene Valley colour-coated ware, parchment ware fabric. (Howe <i>et al.</i> 1980), Tomber and Dore (1998) LNV CC. Evans northern fabric series fabric F111
<b>F02</b>	Nene Valley colour-coated ware, oxidised ware fabric. (Howe <i>et al.</i> 1980), Tomber and Dore (1998) LNV CC. Evans northern fabric series fabric F112

<b>Code</b>	<b>Properties</b>
<b>F05</b>	An oxidised dark brown colour-coated ware with a dark grey core and orange margins. It is hard with an irregular fracture, with common sand c0.2-1mm, some black ironstone c0.2-2mm and some fine silver mica.
<b>F06</b>	Central Gaulish 'Rhenish' ware. Tomber and Dore (1998) CNG BS. Evans northern fabric series fabric F101
<b>F11</b>	A clay pellet roughcast fabric with an orange core and dark brown margins and surfaces. Hard with common coarse translucent quartz sand c0.2-0.4mm and some red ironstone c0.2-0.5mm in a 'clean' matrix.
<b>F21</b>	Oxfordshire red colour-coated ware (Young 1977). Tomber and Dore (1998) OXF RS. Evans northern fabric series fabric F20.
<b>G01</b>	East Yorkshire calcite gritted ware. Tomber and Dore (1998) HUN CG. A handmade generally black fabric; abundant calcite tempering c. 0.5-5mm and some brown-black ironstone inclusions up to 5mm. Evans northern fabric series fabric G01.
<b>G02</b>	A handmade black fabric; abundant moderate/coarse sand temper c. 0.3-0.4mm and very occasional calcite inclusions c. 0.5-5mm. Evans (1985) fabric 007/168. Source - East Yorkshire. Evans northern fabric series fabric G05
<b>G03</b>	A reduced handmade fabric with a black core, margins and surfaces with common fine calcite voids c0.2-0.4mm.
<b>G11</b>	A handmade gritty fabric with a black core, margins and brown-black surfaces, with common sub-rounded quartz c0.3-0.5mm and some very fine gold mica. Local.
<b>G13</b>	A handmade reduced fabric with dark grey-brown core, margins and surfaces, with some coarse angular quartz c1-2mm in a 'clean' matrix and some fine gold mica. Local
<b>G15</b>	A handmade gritty fabric with a black core and inner margin and dark reddish brown margin and exterior. Hard with an irregular fracture with abundant organic temper voids especially on the surface with carbonised organic voids c0.5-1mm in length in a matrix with common fine sand c0.1mm.
<b>G31</b>	A handmade reduced fabric with a black core and margins and brown to grey surfaces with some quartz c0.2-0.5mm and some black and white granitic inclusions c2mm and some fine gold mica.
<b>G41</b>	A wheelmade gritted ware with a grey core, sometimes orange margins, and grey surfaces, with common angular quartz c0.5-1mm and some fine gold mica. Local.
<b>M01</b>	Crambeck parchment ware mortaria (Evans 1989), Tomber and Dore (1998) CRA PA Evans northern fabric series fabric M192
<b>M02</b>	Crambeck early fine sandy mortaria (Evans 1989). Evans northern fabric series fabric M191
<b>M03</b>	A whiteware mortarium with a white core, margins and surfaces, with common moderate sand c0.2-0.3mm and some red ironstone c0.2-0.3mm. Trituration grits; none survive.
<b>M04</b>	Mancetter-Hartshill mortaria, Tomber and Dore (1998) MAH WH. A fairly hard white mortarium fabric; some fine grog inclusions c. 0.2mm and some very fine sand >0.1mm as surfaces appear finely micaceous. Trituration grits - red, black and brown grog c.1-4mm.
<b>M05</b>	A buff mortarium with buff-orange core, margins and surfaces, with some angular quartz c0.5mm and occasional brown ironstone c. 1-2mm. Trituration grits; none survive. Source-Noyon, Oise, Gallia Belgica. Tomber and Dore (1998) NOG WH4.
<b>M11</b>	An oxidised fabric with an orange-brown core, margins and surfaces, with some fine vegetable (?) temper voids c0.3-1mm and occasional brown ironstone inclusions c0.5-0.7mm. Trituration grits; angular white quartz and feldspar 2-4mm and some large gold mica. Local
<b>M12</b>	An oxidised fabric with a black core and orange-brown margins and surfaces, with common fairly fine sand c0.2mm. Trituration grits; angular black slag c2-3mm. Source; Piercebridge or Catterick. Tomber and Dore (1998) CTR WS?
<b>M21</b>	An oxidised white-slipped mortarium with a reddish brown core and margins with common – abundant subangular quartz c0.3-0.5mm and moderate black and red ironstone c0.2mm. Trituration grits; common black angular slag c1-7mm. Tomber and Dore (1998) CTR WS.
<b>M22</b>	An oxidised white-slipped mortarium fabric with a pale grey core and orange margins with a thin white slip with some sand c0.3-0.5mm in a 'clean' matrix. Trituration grits; none survive
<b>M23</b>	A white slipped oxidised fabric with an orange core and margins and white-slipped surfaces, with some common sand c0.3-0.5mm and occasional brown ironstone c0.5mm in a 'clean' matrix. Trituration grits; angular white quartz c2-5mm.

<b>Code</b>	<b>Properties</b>
<b>O01</b>	An oxidised fabric with an orange core, margins and surfaces, 'clean' with occasional fine sand c0.1mm.
<b>O12</b>	An oxidised fabric with orange core, margins and surfaces with common fine sand c0.1-0.2mm.
<b>O13</b>	An oxidised fabric with a grey core and orange margins and surfaces, with common fine sand c0.1-0.2mm and occasional fine gold mica. Local.
<b>O14</b>	An oxidised fabric with orange-brown core, margins and surfaces, with common sand c. 0.2-0.5mm.
<b>O31</b>	An oxidised fabric with orange core, margins and surfaces, with common-abundant fine sand c0.1mm and common fine gold mica. Local.
<b>P01 WAS G14</b>	A handmade reduced fabric with a black core and brown margins and surfaces, poorly levigated, with angular black and white granitic stone inclusions c1-7mm. Local. Possibly prehistoric.
<b>Q01</b>	An oxidised white-slipped fabric with an orange core, sometimes grey margins and white-slipped surfaces, with common moderate sand c. 0.3-0.4mm and some black ironstone c 0.5-1mm.
<b>Q02</b>	An oxidised white-slipped fabric with orange core and margins and white-slipped exterior, hard, with common fairly fine sand c0.2mm.
<b>R09</b>	Crambeck greyware (Corder 1936; Evans 1989), Tomber and Dore (1998) CRA RE. Evans northern fabric series fabric R09.
<b>R11</b>	A greyware with a black core, sometimes brown margins and grey-black surfaces, with common sand c0.2-0.3mm.
<b>R12</b>	A greyware with a grey core, margins and surfaces, hard, with a 'crisp' fracture, with common angular quartz sand c0.3-0.4mm and some black ironstone c0.2-0.4mm.
<b>R13</b>	A greyware with a blue-grey core and mid grey margins and surfaces, with abundant fine sand c0.1mm and occasional black rounded ironstone up to 0.3mm.
<b>R14</b>	A reduced fabric with a black core, margins and surfaces, with common sub-angular sand c0.3-0.5mm.
<b>R15</b>	A grey ware with a dark brown core, black margins and dark brown-black surfaces with common sub-rounded translucent quartz sand at c. 0.5mm and some fine organic inclusions, and occasional silty inclusions up to 2mm.
<b>R21</b>	A gritted greyware with a grey core, margins and surfaces with some sand c0.3-0.5mm in a 'clean' matrix and occasional large angular quartz up to 2mm, also some fine silver mica.
<b>R22</b>	A greyware with a blue-grey core and margins and mid grey surfaces, hard, with common fine sand c0.1mm
<b>R23</b>	A greyware with a mid grey core, pale grey margins and dark grey surfaces, 'soapy' and 'clean' with common fine silver mica.
<b>R24 = R23</b>	
<b>R25</b>	A greyware with a mid grey core, margins and surfaces, with abundant sub-angular sand c0.2-0.4mm. Cf. Evans northern fabric series fabric R133.
<b>R26</b>	A greyware with a mid grey core, margins and surfaces, with some moderate sand c0.3mm and occasional-some rounded calcareous inclusions c0.2-0.4mm in a 'clean' matrix.
<b>R32 = R23</b>	
<b>S22</b>	Central Gaulish samian ware. Tomber and Dore (1998) LEZ SA2.
<b>S31</b>	East Gaulish, Rheinzabern samian ware. Tomber and Dore (1998) RHZ SA.
<b>W01</b>	A whiteware with a pink core and margins and buff-white surfaces, with common fine sand >0.1mm and some fine silver mica.
<b>W02</b>	A whiteware with buff-white core, margins and surfaces, 'soapy' and 'clean'.
<b>W03</b>	Crambeck parchment ware (Evans 1989). Tomber and Dore (1998) CRA PA.
<b>Z11</b>	A handmade reduced fabric with a black core, margins and surfaces, with common abundant angular quartz inclusions c0.2-1mm and some gold mica up to 0.2mm.
<b>Z20</b>	Medieval
<b>Z30</b>	Post-medieval.

**Table 4.56:** Fabric occurrence by phase

Fabric Code	Phase	No%	Wt%	MV%	RE%	BE%	Sno	Swt	Smv	Sre	Sbe
G01	2	4.17%	1.53%				24	720	0	0	
P01	2	95.83%	98.47%				24	720	0	0	
A01	3a	4.17%	13.74%	0.00%	0.00%		72	1368	7	95	37
F01	3a	4.17%	2.34%	0.00%	0.00%		72	1368	7	95	37
G01	3a	20.83%	9.50%	14.29%	8.42%		72	1368	7	95	37
G11	3a	37.50%	48.17%	42.86%	53.68%		72	1368	7	95	37
G41	3a	1.39%	0.58%	0.00%	0.00%		72	1368	7	95	37
M01	3a	1.39%	10.53%	14.29%	20.00%		72	1368	7	95	37
M03	3a	1.39%	2.34%	0.00%	0.00%		72	1368	7	95	37
O12	3a	1.39%	0.22%	0.00%	0.00%		72	1368	7	95	37
R11	3a	9.72%	7.16%	14.29%	2.11%	35.14%	72	1368	7	95	37
R12	3a	1.39%	0.22%	0.00%	0.00%		72	1368	7	95	37
R13	3a	1.39%	1.32%	14.29%	15.79%	64.86%	72	1368	7	95	37
R21	3a	2.78%	0.44%	0.00%	0.00%		72	1368	7	95	37
R22	3a	1.39%	1.83%	0.00%	0.00%		72	1368	7	95	37
S22	3a	1.39%	0.07%	0.00%	0.00%		72	1368	7	95	37
Z21	3a	9.72%	1.54%	0.00%	0.00%		72	1368	7	95	37
B10	3b	1.10%	0.86%	20.00%	4.86%		91	1857	5	144	71
G01	3b	53.85%	54.50%	0.00%	0.00%	73.24%	91	1857	5	144	71
G11	3b	31.87%	33.39%	40.00%	20.83%	26.76%	91	1857	5	144	71
G41	3b	4.40%	4.15%	0.00%	0.00%		91	1857	5	144	71
R11	3b	1.10%	0.22%	0.00%	0.00%		91	1857	5	144	71
R22	3b	5.49%	5.39%	20.00%	69.44%		91	1857	5	144	71
S22	3b	2.20%	1.51%	20.00%	4.86%		91	1857	5	144	71
B01	3c	0.68%	0.04%	0.00%	0.00%		147	7139	6	213	204
F01	3c	0.68%	0.22%	0.00%	0.00%		147	7139	6	213	204
F02	3c	0.68%	0.01%	0.00%	0.00%		147	7139	6	213	204
G01	3c	15.65%	3.14%	0.00%	0.00%		147	7139	6	213	204
G11	3c	58.50%	88.78%	16.67%	46.95%	26.96%	147	7139	6	213	204
G41	3c	2.04%	0.35%	16.67%	4.23%		147	7139	6	213	204
R11	3c	8.16%	4.51%	0.00%	0.00%	67.65%	147	7139	6	213	204
R12	3c	7.48%	0.74%	33.33%	35.68%		147	7139	6	213	204
R14	3c	0.68%	0.14%	0.00%	0.00%		147	7139	6	213	204
R21	3c	1.36%	0.20%	0.00%	0.00%	4.90%	147	7139	6	213	204
R22	3c	0.68%	0.17%	0.00%	0.00%		147	7139	6	213	204
R23	3c	0.68%	1.50%	16.67%	11.74%		147	7139	6	213	204
S22	3c	2.72%	0.20%	16.67%	1.41%	0.49%	147	7139	6	213	204
A01	3d	1.18%	8.35%	0.00%	0.00%		85	1641	5	94	67
B01	3d	1.18%	0.73%	20.00%	5.32%		85	1641	5	94	67
B10	3d	1.18%	3.53%	20.00%	8.51%	11.94%	85	1641	5	94	67
G01	3d	24.71%	32.36%	0.00%	0.00%	53.73%	85	1641	5	94	67
G11	3d	52.94%	46.74%	20.00%	18.09%	16.42%	85	1641	5	94	67
O12	3d	1.18%	0.24%	20.00%	22.34%		85	1641	5	94	67
R11	3d	1.18%	0.79%	0.00%	0.00%	17.91%	85	1641	5	94	67
R12	3d	1.18%	0.91%	0.00%	0.00%		85	1641	5	94	67
R13	3d	9.41%	5.00%	20.00%	45.74%		85	1641	5	94	67
R21	3d	5.88%	1.34%	0.00%	0.00%		85	1641	5	94	67
B01	4	21.25%	21.83%	18.18%	49.34%		80	1214	11	152	83

Fabric Code	Phase	No%	Wt%	MV%	RE%	BE%	Sno	Swt	Smv	Sre	Sbe
F21	4	1.25%	0.49%	0.00%	0.00%		80	1214	11	152	83
G01	4	18.75%	11.53%	18.18%	15.13%		80	1214	11	152	83
G02	4	3.75%	3.05%	0.00%	0.00%		80	1214	11	152	83
G11	4	26.25%	19.19%	18.18%	9.87%		80	1214	11	152	83
G41	4	1.25%	0.99%	0.00%	0.00%		80	1214	11	152	83
M02	4	1.25%	7.91%	9.09%	4.62%		80	1214	11	152	83
M12	4	1.25%	4.78%	9.09%	5.92%		80	1214	11	152	83
O12	4	1.25%	0.33%	0.00%	0.00%		80	1214	11	152	83
R09	4	1.25%	0.82%	9.09%	3.29%		80	1214	11	152	83
R11	4	1.25%	0.91%	9.09%	7.24%		80	1214	11	152	83
R12	4	1.25%	1.48%	0.00%	0.00%		80	1214	11	152	83
R25	4	1.25%	3.21%	9.09%	4.62%	13.25%	80	1214	11	152	83
S22	4	2.50%	1.98%	0.00%	0.00%	24.10%	80	1214	11	152	83
W01	4	1.25%	0.91%	0.00%	0.00%		80	1214	11	152	83
Z211	4	6.25%	9.06%	0.00%	0.00%	12.05%	80	1214	11	152	83
Z23	4	7.50%	10.30%	0.00%	0.00%	50.60%	80	1214	11	152	83
Z31	4	1.25%	1.24%	0.00%	0.00%		80	1214	11	152	83
A01	5a	0.22%	0.17%	0.00%	0.00%		449	9639	67	903	630
B01	5a	0.22%	0.02%	0.00%	0.00%		449	9639	67	903	630
B10	5a	0.22%	0.16%	1.49%	1.11%		449	9639	67	903	630
C11	5a	0.22%	0.25%	0.00%	0.00%		449	9639	67	903	630
C12	5a	0.67%	0.19%	2.99%	3.10%		449	9639	67	903	630
C13	5a	1.11%	0.90%	2.99%	1.99%		449	9639	67	903	630
F01	5a	1.11%	3.49%	1.49%	11.07%	31.75%	449	9639	67	903	630
F11	5a	0.22%	0.05%	0.00%	0.00%		449	9639	67	903	630
G01	5a	31.18%	36.68%	16.42%	16.61%	35.56%	449	9639	67	903	630
G02	5a	6.01%	6.47%	8.96%	10.96%	2.06%	449	9639	67	903	630
G11	5a	17.82%	13.90%	17.91%	5.32%	9.68%	449	9639	67	903	630
G41	5a	6.46%	4.80%	8.96%	11.41%	4.92%	449	9639	67	903	630
M01	5a	1.34%	2.04%	4.48%	5.54%	5.56%	449	9639	67	903	630
M02	5a	0.22%	0.36%	1.49%	0.89%		449	9639	67	903	630
M04	5a	1.34%	1.92%	1.49%	1.55%		449	9639	67	903	630
M05	5a	0.22%	0.27%	1.49%	1.00%		449	9639	67	903	630
M21	5a	0.22%	0.79%	1.49%	1.33%		449	9639	67	903	630
M22	5a	0.22%	0.11%	0.00%	0.00%		449	9639	67	903	630
O14	5a	0.45%	0.07%	0.00%	0.00%		449	9639	67	903	630
O31	5a	0.22%	0.01%	0.00%	0.00%		449	9639	67	903	630
Q02	5a	0.22%	0.04%	0.00%	0.00%		449	9639	67	903	630
R09	5a	12.69%	13.54%	16.42%	14.17%	3.17%	449	9639	67	903	630
R11	5a	2.67%	1.22%	1.49%	1.66%		449	9639	67	903	630
R12	5a	1.78%	0.57%	0.00%	0.00%		449	9639	67	903	630
R13	5a	6.46%	6.89%	2.99%	3.88%		449	9639	67	903	630
R14	5a	0.45%	0.16%	1.49%	0.44%		449	9639	67	903	630
R21	5a	1.11%	1.70%	1.49%	4.65%	3.33%	449	9639	67	903	630
R22	5a	0.89%	1.02%	1.49%	1.66%		449	9639	67	903	630
R23	5a	1.56%	1.53%	1.49%	1.00%	3.97%	449	9639	67	903	630
S22	5a	0.45%	0.03%	0.00%	0.00%		449	9639	67	903	630
S31	5a	0.22%	0.10%	1.49%	0.66%		449	9639	67	903	630
W01	5a	0.22%	0.09%	0.00%	0.00%		449	9639	67	903	630



<b>Fabric Code</b>	<b>Phase</b>	<b>No%</b>	<b>Wt%</b>	<b>MV%</b>	<b>RE%</b>	<b>BE%</b>	<b>Sno</b>	<b>Swt</b>	<b>Smv</b>	<b>Sre</b>	<b>Sbe</b>
W03	5a	0.22%	0.04%	0.00%	0.00%		449	9639	67	903	630
Z21	5a	0.22%	0.01%	0.00%	0.00%		449	9639	67	903	630
Z22	5a	0.67%	0.30%	0.00%	0.00%		449	9639	67	903	630
Z23	5a	0.22%	0.04%	0.00%	0.00%		449	9639	67	903	630
Z32	5a	0.22%	0.05%	0.00%	0.00%		449	9639	67	903	630
A01	5b	0.87%	16.47%	0.00%	0.00%		115	3012	15	178	213
C12	5b	1.74%	3.75%	6.67%	15.17%		115	3012	15	178	213
F02	5b	0.87%	0.03%	0.00%	0.00%		115	3012	15	178	213
F05	5b	0.87%	0.07%	6.67%	2.81%		115	3012	15	178	213
F06	5b	0.87%	0.13%	0.00%	0.00%		115	3012	15	178	213
F21	5b	0.87%	0.13%	6.67%	2.25%		115	3012	15	178	213
G01	5b	40.00%	38.21%	20.00%	34.83%	20.66%	115	3012	15	178	213
G02	5b	3.48%	2.52%	6.67%	3.37%		115	3012	15	178	213
G11	5b	10.43%	9.13%	6.67%	2.25%		115	3012	15	178	213
G13	5b	2.61%	0.43%	0.00%	0.00%		115	3012	15	178	213
G41	5b	2.61%	6.71%	0.00%	0.00%	26.29%	115	3012	15	178	213
M02	5b	2.61%	3.69%	6.67%	7.87%		115	3012	15	178	213
O01	5b	0.87%	0.30%	6.67%	3.93%		115	3012	15	178	213
O12	5b	1.74%	0.90%	0.00%	0.00%	3.29%	115	3012	15	178	213
O14	5b	0.87%	0.07%	0.00%	0.00%		115	3012	15	178	213
Q01	5b	0.87%	0.93%	0.00%	0.00%	19.25%	115	3012	15	178	213
R09	5b	10.43%	7.70%	13.33%	15.73%	10.33%	115	3012	15	178	213
R11	5b	0.87%	0.40%	0.00%	0.00%		115	3012	15	178	213
R12	5b	1.74%	1.69%	6.67%	3.93%		115	3012	15	178	213
R13	5b	0.87%	0.17%	6.67%	3.93%		115	3012	15	178	213
R14	5b	0.87%	0.10%	0.00%	0.00%		115	3012	15	178	213
R21	5b	1.74%	0.56%	0.00%	0.00%		115	3012	15	178	213
R22	5b	5.22%	1.93%	0.00%	0.00%	2.35%	115	3012	15	178	213
S22	5b	4.35%	3.45%	6.67%	3.93%	17.84%	115	3012	15	178	213
S31	5b	0.87%	0.23%	0.00%	0.00%		115	3012	15	178	213
W03	5b	0.87%	0.30%	0.00%	0.00%		115	3012	15	178	213
A01	5c	7.59%	46.25%	0.00%	0.00%		79	2108	12	131	246
B01	5c	5.06%	4.27%	8.33%	12.21%	8.13%	79	2108	12	131	246
F21	5c	1.27%	0.24%	8.33%	3.82%		79	2108	12	131	246
G01	5c	6.33%	2.85%	8.33%	6.11%		79	2108	12	131	246
G02	5c	1.27%	0.71%	0.00%	0.00%		79	2108	12	131	246
G11	5c	15.19%	3.42%	25.00%	38.17%		79	2108	12	131	246
G41	5c	10.13%	14.18%	8.33%	3.05%	14.64%	79	2108	12	131	246
M01	5c	1.27%	1.85%	0.00%	0.00%	6.91%	79	2108	12	131	246
M04	5c	1.27%	1.71%	0.00%	0.00%		79	2108	12	131	246
M11	5c	1.27%	6.17%	0.00%	0.00%	21.14%	79	2108	12	131	246
R09	5c	5.06%	1.09%	0.00%	0.00%		79	2108	12	131	246
R11	5c	2.53%	0.62%	0.00%	0.00%		79	2108	12	131	246
R12	5c	2.53%	2.28%	8.33%	12.98%		79	2108	12	131	246
R13	5c	2.53%	0.71%	8.33%	6.87%		79	2108	12	131	246
R21	5c	6.33%	1.33%	0.00%	0.00%		79	2108	12	131	246
R22	5c	11.39%	4.51%	8.33%	6.87%	10.98%	79	2108	12	131	246
R23	5c	3.80%	0.76%	0.00%	0.00%		79	2108	12	131	246
S22	5c	3.80%	0.47%	8.33%	6.11%		79	2108	12	131	246

<b>Fabric Code</b>	<b>Phase</b>	<b>No%</b>	<b>Wt%</b>	<b>MV%</b>	<b>RE%</b>	<b>BE%</b>	<b>Sno</b>	<b>Swt</b>	<b>Smv</b>	<b>Sre</b>	<b>Sbe</b>
W02	5c	7.59%	5.93%	0.00%	0.00%	38.21%	79	2108	12	131	246
Z211	5c	1.27%	0.47%	0.00%	0.00%		79	2108	12	131	246
Z32	5c	1.27%	0.09%	8.33%	3.82%		79	2108	12	131	246
Z33	5c	1.27%	0.09%	0.00%	0.00%		79	2108	12	131	246
A01	5d	2.10%	7.50%	0.00%	0.00%		143	3106	20	384	208
B01	5d	12.59%	8.44%	10.00%	6.25%		143	3106	20	384	208
C11	5d	1.40%	1.13%	0.00%	0.00%	4.81%	143	3106	20	384	208
F01	5d	4.20%	0.68%	0.00%	0.00%		143	3106	20	384	208
F02	5d	0.70%	0.03%	0.00%	0.00%		143	3106	20	384	208
F06	5d	2.80%	0.39%	0.00%	0.00%		143	3106	20	384	208
F21	5d	0.70%	0.03%	0.00%	0.00%		143	3106	20	384	208
G01	5d	10.49%	7.18%	15.00%	7.29%	12.02%	143	3106	20	384	208
G02	5d	0.70%	0.68%	0.00%	0.00%		143	3106	20	384	208
G11	5d	21.68%	15.20%	20.00%	8.07%	12.98%	143	3106	20	384	208
G13	5d	2.80%	0.58%	0.00%	0.00%		143	3106	20	384	208
M04	5d	0.70%	2.64%	5.00%	4.17%		143	3106	20	384	208
O01	5d	0.70%	0.13%	0.00%	0.00%		143	3106	20	384	208
O13	5d	0.70%	0.06%	0.00%	0.00%		143	3106	20	384	208
R09	5d	14.69%	34.32%	10.00%	28.39%	70.19%	143	3106	20	384	208
R11	5d	6.99%	2.03%	10.00%	2.86%		143	3106	20	384	208
R12	5d	2.10%	0.68%	0.00%	0.00%		143	3106	20	384	208
R13	5d	1.40%	0.19%	10.00%	2.60%		143	3106	20	384	208
R15	5d	0.70%	0.68%	5.00%	3.13%		143	3106	20	384	208
R21	5d	0.70%	0.55%	0.00%	0.00%		143	3106	20	384	208
R22	5d	1.40%	10.21%	10.00%	30.47%		143	3106	20	384	208
R26	5d	0.70%	4.76%	5.00%	6.77%		143	3106	20	384	208
S22	5d	0.70%	0.19%	0.00%	0.00%		143	3106	20	384	208
S31	5d	2.80%	0.97%	0.00%	0.00%		143	3106	20	384	208
W02	5d	2.80%	0.32%	0.00%	0.00%		143	3106	20	384	208
Z21	5d	0.70%	0.06%	0.00%	0.00%		143	3106	20	384	208
Z22	5d	0.70%	0.03%	0.00%	0.00%		143	3106	20	384	208
Z24	5d	0.70%	0.26%	0.00%	0.00%		143	3106	20	384	208
Z32	5d	0.70%	0.10%	0.00%	0.00%		143	3106	20	384	208
C11	6	0.46%	0.40%	0.96%	2.59%		868	15137	104	1235	525
C13	6	0.69%	0.64%	2.88%	3.40%		868	15137	104	1235	525
F11	6	0.23%	0.12%	0.96%	0.81%		868	15137	104	1235	525
G01	6	20.85%	22.40%	22.12%	22.75%	54.29%	868	15137	104	1235	525
G02	6	2.76%	2.95%	1.92%	3.40%	0.57%	868	15137	104	1235	525
G11	6	23.39%	18.79%	4.81%	2.59%	2.86%	868	15137	104	1235	525
G15	6	0.12%	0.13%	0.96%	0.49%		868	15137	104	1235	525
G31	6	0.46%	0.71%	0.00%	0.00%	1.90%	868	15137	104	1235	525
G41	6	9.10%	11.67%	2.88%	8.83%	10.29%	868	15137	104	1235	525
M01	6	1.15%	1.49%	3.85%	4.05%		868	15137	104	1235	525
M02	6	0.12%	0.07%	0.00%	0.00%		868	15137	104	1235	525
M12	6	0.92%	1.59%	0.96%	2.59%		868	15137	104	1235	525
O12	6	0.12%	0.35%	0.00%	0.00%		868	15137	104	1235	525
O13	6	3.57%	0.11%	0.96%	1.21%		868	15137	104	1235	525
O14	6	0.23%	0.17%	0.00%	0.00%		868	15137	104	1235	525
R09	6	2.53%	6.43%	7.69%	5.91%	21.90%	868	15137	104	1235	525

Fabric Code	Phase	No%	Wt%	MV%	RE%	BE%	Sno	Swt	Smv	Sre	Sbe
R11	6	1.15%	1.19%	3.85%	3.72%	2.29%	868	15137	104	1235	525
R12	6	1.96%	3.83%	1.92%	5.67%		868	15137	104	1235	525
R13	6	1.84%	4.38%	1.92%	2.59%		868	15137	104	1235	525
R21	6	2.42%	2.10%	0.96%	3.89%		868	15137	104	1235	525
R22	6	0.81%	1.27%	0.96%	1.94%	5.90%	868	15137	104	1235	525
R23	6	1.15%	2.50%	1.92%	3.72%		868	15137	104	1235	525
S22	6	0.46%	0.24%	0.96%	0.24%		868	15137	104	1235	525
S31	6	0.12%	0.11%	0.00%	0.00%		868	15137	104	1235	525
W02	6	0.12%	0.17%	0.00%	0.00%		868	15137	104	1235	525
W03	6	0.12%	0.39%	0.96%	1.21%		868	15137	104	1235	525
Z11	6	21.66%	15.00%	35.58%	18.38%		868	15137	104	1235	525
Z21	6	0.81%	0.40%	0.00%	0.00%		868	15137	104	1235	525
Z211	6	0.23%	0.29%	0.00%	0.00%		868	15137	104	1235	525
Z22	6	0.12%	0.03%	0.00%	0.00%		868	15137	104	1235	525
Z23	6	0.12%	0.01%	0.00%	0.00%		868	15137	104	1235	525
Z31	6	0.23%	0.07%	0.00%	0.00%		868	15137	104	1235	525

**Table 4.57:** Form occurrence by phase

Phase	Fabric	Form	No	Wt	MV	RE
0	B10	J1.1	1	13	1	4
0	F01	D1.1	1	10	1	9
0	G03	J1.1	2	84	1	24
0	M02	M1.1	2	89	1	17
0	M04	M1.3	2	56	1	12
0	M04	M1.4	1	77	1	8
0	M23	M1.1	1	105	1	14
0	Z11	J2.1	2	42	1	14
0	Z11	J3.2	1	14	1	3
3a	G01	J3.1	1	14	1	8
3a	G11	D1.1	1	2	1	12
3a	G11	J3.1	1	7	1	4
3a	G11	J3.2	2	125	1	35
3a	M01	M1.1	1	144	1	19
3a	R11	D1.2	1	16	1	2
3a	R13	D2.1	1	18	1	15
3b	B10	B2.1	2	32	1	14
3b	G11	J2.1	4	125	1	16
3b	G11	J3.2	3	83	1	14
3b	R22	CJ1.1	5	100	1	100
3b	S22	dr31	2	34	1	14
3c	G11	J1.1	12	1824	1	100
3c	G41	D1.1	2	19	1	9
3c	R12	BK1.1	2	11	1	11
3c	R12	J1.1	5	33	1	65
3c	R23	B2.1	1	107	1	25
3c	S22	dr31	2	12	1	6
3d	B01	D1.2	1	12	1	5
3d	B10	B1.1	2	116	1	16
3d	G11	J3.1	4	84	1	17
3d	O12	F1.1	1	4	1	21
3d	R13	J1.1	4	44	1	43
4	B01	J1.2	4	164	1	67

Phase	Fabric	Form	No	Wt	MV	RE
4	B01	J1.3	1	19	1	8
4	G01	J1.1	1	8	1	7
4	G01	J4.1	2	54	1	16
4	G11	J3.1	1	9	1	5
4	G11	J3.2	2	14	1	10
4	M02	M1.1	1	96	1	7
4	M12	M2.1	1	58	1	9
4	R09	B1.1	1	10	1	5
4	R11	B1.1	2	22	1	22
4	R25	D1.1	1	39	1	7
5a	B10	D1.1	2	30	1	20
5a	C12	J1.1	3	18	1	28
5a	C13	B1.1	4	84	1	18
5a	F01	F1.1	1	84	1	100
5a	G01	J1.1	1	22	1	7
5a	G01	J3.1	8	125	1	55
5a	G01	J3.2	1	64	1	18
5a	G01	SJ1.1	1	114	1	9
5a	G01	WMJ1.1	4	488	1	61
5a	G02	J1.1	6	203	1	51
5a	G02	J2.1	3	125	1	41
5a	G02	J3.1	1	13	1	7
5a	G11	D1.1	3	38	1	13
5a	G11	J1.2	1	5	1	6
5a	G11	J3.1	3	24	1	11
5a	G11	J3.2	1	23	1	4
5a	G11	L1.1	1	8	1	5
5a	G41	J2.1	7	190	1	92
5a	G41	J2.2	7	102	1	11
5a	M01	M1.1	5	152	1	50
5a	M02	M1.1	1	35	1	8
5a	M04	M1.3	12	370	1	28
5a	M05	M1.1	1	26	1	9

Phase	Fabric	Form	No	Wt	MV	RE
5a	M21	M1.1	1	76	1	12
5a	R09	B1.1	16	280	1	50
5a	R09	B1.3	1	197	1	24
5a	R09	B3.1	3	168	1	20
5a	R09	D2.1	1	42	1	13
5a	R09	D2.2	1	7	1	4
5a	R09	J1.1	4	36	1	17
5a	R11	B1.2	3	18	1	15
5a	R13	CJ1.1	1	44	1	25
5a	R13	D1.1	1	17	1	10
5a	R21	J1.3	1	134	1	42
5a	R22	J3.1	1	61	1	15
5a	R23	CJ1.1	1	34	1	9
5b	C12	J1.1	2	113	1	27
5b	F21	B1.1	1	4	1	4
5b	G01	J1.1	1	6	1	4
5b	G01	J3.1	3	77	1	25
5b	G01	SJ1.2	3	495	1	33
5b	G02	J3.1	1	20	1	6
5b	G11	J1.1	1	7	1	4
5b	M02	M1.1	3	111	1	14
5b	O01	B1.1	1	9	1	7
5b	R09	B1.1	1	33	1	12
5b	R09	D1.1	2	34	1	16
5b	R12	B1.1	1	35	1	7
5b	R13	J1.1	1	5	1	7
5b	S22	Bdr37	1	15	1	7
5c	B01	D2.1	2	70	1	16
5c	F21	B1.1	1	5	1	5
5c	G01	WMJ1.1	1	47	1	8
5c	G11	CJ1.1	2	9	1	30
5c	G11	J3.1	1	5	1	8
5c	G11	O1.1	2	16	1	12
5c	G41	J5.1	1	7	1	4
5c	R12	J1.2	1	47	1	17
5c	R13	BK1.1	1	9	1	9
5c	R22	J2.3	1	13	1	9
5d	B01	D1.1	1	28	1	5
5d	B01	J1.1	2	69	1	19
5d	G01	J1.1	1	19	1	4
5d	G01	J3.1	2	64	1	24
5d	G11	J1.1	1	13	1	5
5d	G11	J1.2	1	25	1	5
5d	M04	M1.1	1	82	1	16
5d	R09	B1.1	6	790	1	109
5d	R11	B1.1	2	36	1	14
5d	R11	D1.1	1	9	1	4
5d	R13	D1.1	1	5	1	7
5d	R13	D2.2	1	1	1	3
5d	R15	J1.1	1	21	1	12
5d	R22	F1.1	1	298	1	100
5d	R22	J2.3	1	19	1	17
5d	R26	B1.1	1	148	1	26
6	C11	L1.1	2	56	1	32

Phase	Fabric	Form	No	Wt	MV	RE
6	C13	J1.1	2	42	1	19
6	C13	J1.2	2	52	1	23
6	F11	BK1.1	2	18	1	10
6	G01	B1.1	1	37	1	9
6	G01	D1.1	2	116	1	22
6	G01	J1.1	5	33	1	18
6	G01	J3.1	16	482	1	157
6	G01	J3.2	4	95	1	31
6	G01	J4.1	2	44	1	26
6	G01	SJ1.2	3	216	1	23
6	G01	WMJ1.1	1	46	1	6
6	G02	J1.1	2	89	1	42
6	G11	D1.1	3	29	1	14
6	G11	J1.2	1	11	1	7
6	G11	J2.1	1	9	1	5
6	G11	J3.1	2	7	1	6
6	G41	J1.1	6	342	1	97
6	G41	J2.1	1	26	1	12
6	M01	M1.1	5	123	1	35
6	M01	M1.3	1	19	1	7
6	M01	M2.1	1	23	1	8
6	M12	M1.1	4	226	1	32
6	O13	D1.1	31	17	1	15
6	R09	B1.1	5	451	1	46
6	R09	D2.1	1	29	1	10
6	R09	D2.2	1	11	1	6
6	R09	D3.1	1	135	1	11
6	R11	D1.1	1	5	1	4
6	R11	D2.1	1	4	1	6
6	R11	D3.1	1	30	1	12
6	R11	J2.1	2	46	1	24
6	R12	SJ1.1	3	367	1	70
6	R13	B1.1	1	70	1	12
6	R13	CJ1.1	1	42	1	20
6	R21	J1.1	4	99	1	48
6	R22	J1.2	2	35	1	24
6	R23	B1.1	3	111	1	35
6	R23	J2.2	1	7	1	11
6	S22	Bdr31r	2	8	1	6
6	W03	B1.1	1	59	1	15
6	Z11	B1.1	1	20	1	7
6	Z11	J1.1	7	145	1	40
6	Z11	J2.1	5	32	1	19
6	Z11	J3.1	1	25	1	4
6	Z11	J3.2	4	81	1	24
6	Z11	J4.1	1	64	1	9
6	Z11	J5.1	10	118	1	54
6	Z11	J5.2	2	42	1	22
6	Z11	J6.1	1	17	1	4
7	M04	M1.2	2	198	1	33
7	S22	dr37	1	13	1	7

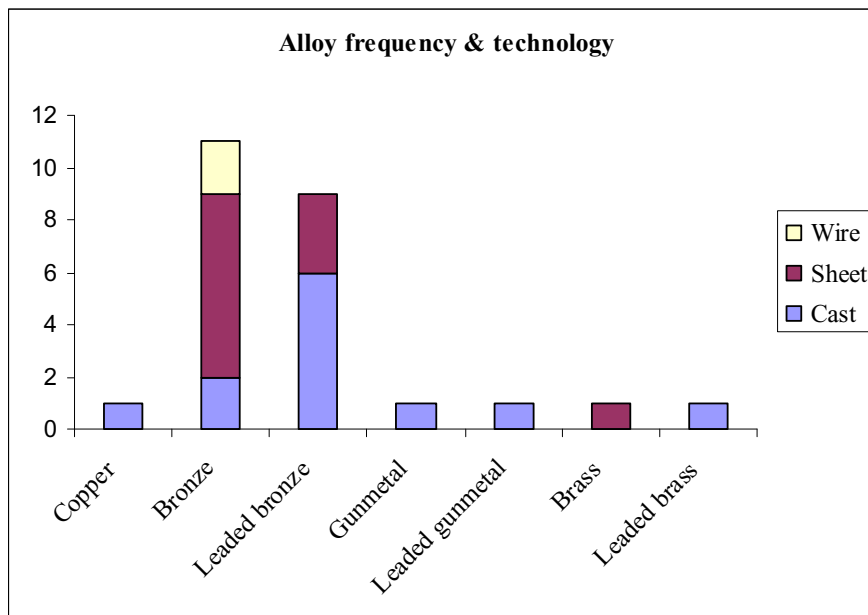
**Table 4.58:** Non-ferrous assemblage divided by type and phase. This excludes stray finds of the Bronze Age punch and Medieval items.

Category	Phase				Totals
	3/4	5	6	unstrat	
<b>Cu alloy/silver</b>					
Ornaments	1	2	1	2	6
Fittings	2	6	1	2	11
Vessels		1	1		2
Working evidence		2		2	4
Other	2			1	3
<b>Lead</b>					
Weights		1		4	5
Repairs/patches		1	2	5	8
Cylinders	3		1	17	21
Working evidence	2		1	1	4
Uncertain	1	1			2
<b>Totals</b>	11	14	7	34	66

**Table 4.59:** Metrology of lead weights from Quarry Farm, using a value of 27.288g (and in brackets, 27.125 g) for the Roman ounce (Collingwood & Wright 1991, 1).

Find	Mass (g)	Likely intended unit	Nominal mass (g)
115	281.3	10 or 11 oz	10 oz 272.9 (271.3) 11 oz 300.2 (298.4)
116	120.5	5 oz	136.4 (135.6)
121	195.4	7 oz	191.0 (189.9)
122	303.5	11 oz	300.2 (298.4)

**Table 4.60:** Range of copper alloys used according to technology



**Table 4.61:** Range of iron objects present. \*Undiagnostic material from unstratified contexts (e.g. nails) is excluded.

	Phase 3/4	Phase 5	Phase 6	Phase 7 & U/S*	Total
<b><i>Tools</i></b>					
Knives		5	1		6
Agriculture (goad & scythe)	1	1			2
Craft (awl, punch, chisel)		3	2		5
?/other (stylus)		1	1		2
<b><i>Weapons</i></b>					
Arrow		1			1
<b><i>Domestic</i></b>					
Locks/keys	1		2		3
<b><i>Fittings</i></b>					
Handle		2	1		3
Double-spiked loop			1		1
Strapping &c	1	1	1		3
T-clamp	2		1		3
Clamp		1			1
Joiner's dog	2			1	3
Looped fitting		2	1		3
Hook				1	1
Washer	1				1
Flanged collar		1			1
Bar		1			1
Staple			1		1
Chain	1				1
?			1		1
<b><i>Tacks/nails/hobnails</i></b>					
Square-headed nail (Manning type 1)	21	21	4		46
Angular-headed nail (Manning type 2)		1			1
T-headed nail (Manning type 3)	1	1			2
Tack (Manning type 8)		1			1
Hobnails	11				11
<b><i>Offcuts/blacksmithing waste</i></b>	3	6	4		13
<b><i>Other/identified</i></b>	3	5	4		12
<b>TOTALS</b>	48	54	25	2	129

**Table 4.62:** Quantities of iron objects, nails and hobnails at a selection of sites.

Site	Iron objects	Nails	Hobnails	Notes	Reference
Quarry Farm	68	50	11	Excludes hoard	This paper
Alchester (northern extramural area), Warwickshire	200*	2791	1470	*excludes unidentified fragments (569)	Booth & Evans 2001
Beddington Villa, Surrey	73	3151	457		Jackson <i>et al.</i> 2005, 83-7
Causeway Lane, Leicester	65	3448	507		Connor & Buckley 1999
Fosse Lane, Shepton Mallet, Somerset	170	2854	331		Leach, P 2001
Shiptonthorpe, East Yorkshire	55	810	5		Millett 2006
Strageath, Perth and Kinross	334*	761**	353**	*excludes unidentified fragments **minimum number	unpublished NMS data
Inveresk, East Lothian	156	762	351		Hunter forthcoming
Catterick, Yorkshire	1180	not recorded	336		Cool 2002, 24-43

**Table 4.63:** Composition of the hoard

Category	Material
<i>Wood-working tools (10)</i>	Adze-hammer Pruning hook Paring chisel Cooper's crozes (2)
<i>Leather-working tools (2)</i>	Awl
<i>Metal-working tools (3)</i>	Files (3)
<i>Other tools (3)</i>	Knife
<i>Weighing (2)</i>	Steelyard
<i>Vehicle fittings (4)</i>	Nave linings (3)
<i>Structural fittings (4)</i>	Hinge L-staple (2)
<i>Other fittings (17)</i>	Collars (3) Vessel handle (1) Ferrule (1) Staple (1) Buckle loop (1) Copper alloy sheet mounts (2)
<i>Nails (8)</i>	Square-headed nails (4)
<i>Leather straps (3)</i>	Fragments in corrosion products

**Table 4.64:** Fragment counts for the species present (\* = partial skeleton; X = present)

	Phases									
	3a	3b	3c	3d	4	5a	5b	5c	6	6 Pits
Cattle	15	3	3	11	4	37	21	7	43	78
Cattle size					1	2	2			7
Sheep/goat	3	1	3	7	1	9	2	2 *	3	16
Sheep				1		1 *	*			
Goat?										1
Sheep size										2
Pig	3	3		1		4	1	*	4	5
Horse	5	1		1		12	5		6	9

	Phases									
	3a	3b	3c	3d	4	5a	5b	5c	6	6 Pits
Dog						2				1 *
Red deer	1					2			3	1
D. fowl									1	
Goose										1
Frog/toad					1					
Fish sp.						X				
Totals	27	8	6	21	7	71	32	11	60	122
Grand Total	365									

**Table 4.65:** Animal bone: identifiable fragments  
Approximate counts of identifiable fragments from 762 complex (\* = skeleton)

Species/Context	762	F777	F938	F940	F1417
Cattle	17	32	7	7	
Sheep/goat	2	11	3	2	
Sheep			1		
Pig		3			
Horse	2?	3	1		1
Dog		*			
Red deer	1				

**Table 4.66:** Cattle epiphyses in approximate order of fusion (ages of fusion after Silver 1969).

	Phase 3			Phase 5			Phase 6		
	Fused	Just fused	Unfused	Fused	Just fused	Unfused	Fused	Just fused	Unfused
<b>by 18 months</b>									
Scap tub				1					
Acet symph	1			1			1		
Prox rad				1			4		
Dist hum	1			1			2		
Prox Ph 2	1						2		
Prox Ph 1	1			4			1		
<b>by 2-3 years</b>									
Dist tib				3			1		1
Dist mc				1			2		
Dist mt							1		
<b>by 3.5-4 years</b>									
Prox cal							1		1
Prox fem		1		1					
Dist rad							2		
Prox hum							1		
Prox tib									
Dist fem				1	1	1			
P&D uln									
<b>by &gt;5 years</b>									
Ant vert ep				4					1
Post vert ep				4					2



**Table 4.67:** Sheep/goat epiphyses in approximate order of fusion (after Silver 1969).

	Phase 3			Phase 5			Phase 6		
	Fused	Just Fused	Unfused	Fused	Just Fused	Unfused	Fused	Just Fused	Unfused
<b>by 1 year</b>									
Dist hum							1		
Prox rad							1		
Scap tub									
Acet symph				1					
<b>by 1-2 years</b>									
Prox Ph 2									
Prox Ph 1									
Dist tib									
Dist mc									1
Dist mt									
<b>by 2.5-3.5 years</b>									
Prox fem			1						
Prox cal							1		
Dist fem									
Prox tib									
Dist rad									
Prox hum									
P&D uln									
<b>by &gt;5 years</b>									
Ant vert ep									1
Post vert ep									1

**Table 4.68:** Tooth eruption and wear: approximate ages of eruption after Silver 1969 (U = unerupted/deciduous; S/W = slight wear; H/W = heavy wear)

		Phase 3			Phase 5			Phase 6		
		U	S/W	H/W	U	S/W	H/W	U	S/W	H/W
<b>Cattle</b>										
5-6m	M1		1	3			1			5
5-18m	M1/M2		2			9	4	5	8	16
15-18m	M2			2		4	4		3	5
24-30m	P2	1						1		
18-30m	P3	1					2	1		3
24-30m	M3		2	2	1	6	1	1	13	7
28-36m	P4	2	1	1				2	1	2
<b>Sheep/goat</b>										
3-5m	M1			2						1
3-12m	M1/M2		1				1			2
9-12m	M2		2			3			2	
21-24m	P2									
21-24m	P3									
18-24m	M3	1	1			1			1	2
21-24m	P4	1		1						1
<b>Pig</b>										
4-6m	M1					1				1
4-13m	M1/2	1		1	1					
7-13m	M2			1						2
12-16m	P2								1	
12-16m	P3									1
12-16m	P4				1					1
17-22m	M3		1	1				1	3	

**Table 4.69:** Stone geological identification

**Box 11**

Context 787: Medium grained buff quartz sandstone with abundant mica flakes. Dark brown cements and iron spotting. Very hard.

Context 271: Red brown fine quartz sandstone. Some iron colour banding. Buff cement.

Context 994: Two pieces of medium quartz sandstone with burn marks.

Context 1092: Thin flat quern fragment of coarse sandstone with some pale cement (dolomitic) visible. Some notable large quartz grains to 10mm not seen in any other previous sample.

Context 879: 4 piece as 1092 with dark mineralized (iron or manganese?) band. Even larger quartz grains to 15mm.

Context 3: 3 small pieces of rotten dolerite. Cleveland Dyke rock.

Context 2:

1 Rounded piece of dolerite (Cleveland Dyke) probably an original weathered spheroid common in the dyke.

2 pieces of coarse dolerite with phenocrysts up to 5-8mm

1 piece fine grained dyke rock probably taken from close to edge of dyke (chilled margin)

2 pieces of fine hard sandstone pale yellow/buff coloured. Could be worked or may be glacial drift pebbles.

Context 270: Small piece of pale grey calcareous limestone or evaporite deposit with unusual mud cracked surface.

Context 492: Micaceous flagstone (siltstone) fine grained.

Context 599: Soft calcareous limestone or evaporite deposit. Full of voids. Pale grey colour.

See 311 - this is probably an unburnt sample of the same material.

Context 11: Weathered Dolerite spheroid from Cleveland Dyke.

Context 1220: Bituminous coaly shale.

Context 3: Large number of dolerite (Cleveland Dyke) fragments

Context 136: Coarse igneous rock with large phenocrysts. Uncertain identification. May be drift pebble.

Context 330: Dolerite. Cleveland Dyke.

Context 1016: Uncertain igneous rock.

Context 1314: Probably dolerite, Cleveland Dyke.

Context 720: As 1092 and 879.

Context 797: Hand axe in fine grained, greeny/grey volcanic ash.

Context 723: 2 pieces coarse dolerite?

Vitrified stone: Glazed surface with glassy coating to one side. Hard light, possibly silica rock.

**Box 21**

Context 236: Iron brown medium grained quartz sandstone. Similar to quern 64. Mica flakes visible, sub-rounded grains. Smooth worked surface.

Context 1007: Fine grained quartz sandstone. Used as mould? Surface.

**Box 22**

Context 740: Medium to fine quartz sandstone with some visible mica flakes. Some slight cross-bedding visible. Some colour spotting. Surface finely worked.

Context 311: Altered (burnt?) vuggy calcareous limestone or evaporite deposit. Very soft, friable and ochreous white to yellow and brown.

Context 1337: Medium to fine quartz sandstone with gypsum lenses. Fine exposed surfaces. Used as a mould? Surface.

**Box 23**

Context 409: Medium to fine grained quartz sandstone with abundant white mineral (gypsum) lenses. Brown cement. Some cross-bedding.

Context 1278: Fine grained quartz sandstone. Pale buff (dolomitic) cement. No lenses. Fine surfaces. Quern has used natural flat lower surface.

**Box 24**

Context 1463: Carved architectural feature with hole. Fine grained quartz sandstone with buff (dolomitic) cement.

Context 1466: Medium to fine grained, red/brown quartz sandstone. Dark colour. Some visible mica flakes. Grinding striations added to base.

Context 318: Mid brown, fine grained sandstone. Rare mica flakes visible. Abundant worked surface marks.

**Box 25**

Context 236: Medium grained dark brown sandstone with angular cavities/sub rounded lense like cavities. Other lenses filled with white mineral, probably gypsum.

Context 409 (structure 268): Medium to fine grained quartz sandstone with brown blotching and pale (dolomitic) cement. Finely worked surface.

Context 454: As item 409

**Box 26**

Context 268: Small block as in 409 but with cross-bedding structure visible and micaceous linings to bedding.

Context 268: Large block as above but more massively bedded.

Context 454: As above but may not be worked.

**Box 28**

Context 1227: 2 fragmentas of 1 large worked building stone. Medium to fine grained pale brown to buff sandstones. Some with pale mud lenses seen in other samples. Some cross-bedding visible.

Context F469: Block of bright red ripple marked micaceous siltstone. Thinly laminated internal structure. Natural flaggy bedding.

**Querns**

QF03/64: Medium grained quartz sandstone brown to buff coloured. Rounded to sub-rounded grains. No visible mica. Coarsely worked surface.

QF03/720: Fine grained quartz sandstone. Pale buff coloured cement (dolomitic?). Very hard. Finely worked surface.

Table 4.70: Lithics

Context	Typological description	retouch?	Probable date	Abrasion	edge damage	Patination	Staining	RM	Hammer mode	Butt type	Dorsal scar count	Knapping pattern	% dorsal cortex	RCE	portion	Length	Width	Thickness	Notes
1	flake		undiagnostic	0	0	1	0	2	3	9	2	bi	40	0	distal	27.7	24.9	13.3	
1	flake		undiagnostic	0	2	1	0	3	1	1	3	multi	0	0	whole	31	22.4	7.1	
1	flake		LM/EN	0	2	1	0	3	1	1	4	uni	0	4	whole	35.7	20.2	9.2	laminar flake scars on dorsal
1	flake		LM/EN	0	1	0	0	2	3	5	5	uni	20	4	whole	24	14.3	4.2	laminar flake scars on dorsal
1	burnt chunk		undiagnostic	0	1	1	0	2	3	9	2	?	90%	0	distal	30.2	11	10.8	burnt
1	flake		undiagnostic	0	1	0	0	1	3	9	2	bi	60%	0	distal	28.5	20.2	10.9	
1	blade		M/EN	0	1	0	0	3	3	11	8	uni	0	0	whole	39.3	13.9	6.2	laminar flake scars on dorsal
1	chunk		undiagnostic	0	1	1	0	3	3					0	whole	26.8	17.3	9.3	v. poor rm - shatter from knapping, but technologically uninformative
1	flake		undiagnostic	0	1	1	0	3	1	2	3	bi	0	4	whole	27.3	11.2	6.3	
1	blade		M/EN	0	1	1	0	3	3	11	6	uni	0	4	whole	30.9	13.2	4.2	laminar flake scars on dorsal
1	flake		undiagnostic	0	1	1	0	3	1	1	2	multi	0	0	proximal	13.8	19.7	18.8	
1	flake		LM/EN	0	1	1	0	3	3	5	3	multi	0	0	whole	15.3	8.6	2.1	laminar flake scars on dorsal
1	flake		undiagnostic	0	1	1	0	3	3	5	1	uni	0	0	whole	14.7	13.1	3.1	
1	flake		LM/EN	0	1	1	0	3	1	11	3	uni	0	4	proximal	15.7	18	14.5	
1	flake		undiagnostic	0	0	0	0	3	3	9	3	?	0	0	mesial	20.7	6.5	4.6	
1	flake		undiagnostic	0	1	0	0	3	1	13	1	multi	0	0	whole	22.1	18	5.2	
1	flake		LM/EN	0	1	0	0	3	1	11	3	uni	0	4	whole	19.4	11.7	3.4	laminar flake scars on dorsal
1	blade		M/EN	0	1	2	0	3	3	9	3	uni	0	0	mesial	19.2	11.3	4.5	laminar flake scars on dorsal
1	flake		undiagnostic	0	1	0	0	3	1	2	4	bi	0	4	siret	27.3	11.4	7.7	
1	flake		undiagnostic	0	0	0	0	3	1	1	4	multi	0	4	proximal	9.8	21.2	5.5	
1	flake		undiagnostic	0	1	1	0	3	1	1	2	uni	0	4	whole	22.7	13.6	5.8	
1	chip		undiagnostic	0	0	0	0	2	3	0						<2	<2	<2	
1	chip		undiagnostic	0	1	1	0	3	3	5	1	uni	0	4	proximal	<2	<2	<2	
1	chip		undiagnostic													<2	<2	<2	
1	chip		undiagnostic													<2	<2	<2	
1	chip		undiagnostic													<2	<2	<2	
1	chip		undiagnostic													<2	<2	<2	
1	flake		undiagnostic	1	2	1	0	3	3	5	5	bi	0	4	whole	29.9	20.2	5.5	
1	chunk		mid-later bronze age	1	1	0	0	2	1	9	1	uni	30%	4	whole	32.4	19.9	13.9	shattered & nasty
2	blade		M/EN	0	0	0	0	3	2	3	5	uni	0	4	whole	32.2	14.7	3.1	
2	flake		M/EN	0	0	0	0	2	1	11	3	uni	30%	4	whole	21.1	17	3.9	
2	flake		undiagnostic	0	2	0	0	2	3	3	0	uni	100%	0	whole	21.5	16.8	5.8	
2	flake		undiagnostic	0	0	1	0	3	1	1	4	multi	0	0	whole	26.2	22.1	5.5	
2	flake		undiagnostic	0	0	0	0	3	1	4	0	uni	100%	0	proximal	19.5	21.5	8.2	

Context	Typological description	retouch?	Probable date	Abrasion	edge damage	Patination	Staining	RM	Hammer mode	Butt type	Dorsal scar count	Knapping pattern	% dorsal cortex	RCE	portion	Length	Width	Thickness	Notes
3	flake		undiagnostic	0	0	0	0	2	1	2	1	multi	70%	0	whole	37.9	25.7	11.6	
3	blade		M/EN	0	0	0	0	2	2	5	4	uni	20%	4	whole	23.6	10	3.1	
3	flake		undiagnostic	1	1	1	0	3	1	1	3	multi	0	0	whole	28	17.9	4.8	
3	burnt chunk		undiagnostic													<2	<2	<2	burnt
3	fragment		undiagnostic													<2	<2	<2	
3	burnt flake		undiagnostic	1	2	1	0	3	3	9	4	bi	0	0	mesial	26.7	17.2	5.2	burnt
3	blade		M/EN	0	1	1	0	3	3	9	4	uni	0	0	mesial	30.6	18.8	3.3	
3	flake		undiagnostic	0	1	1	0	3	2	5	5	uni	5%	4	whole	33.7	19.4	5.4	relatively controlled
3	flake		undiagnostic	0	1	0	1	3	3	5	1	uni	40%	4	proximal	20.9	9.2	3.9	natural on back
3	flake		undiagnostic	0	1	1	0	2	1	3	0	0	60%	0	whole	42	27.3	17	
8	blade		undiagnostic	0	2	2	0	3	3	9	2	uni	0	0	distal	24.8	16.1	3.3	
9	flake		undiagnostic	0	1	1	0	3	1	5	8	multi	0	0	whole	35.3	26.5	13.5	
48	flake		earlier bronze age?	0	0	0	2	3	1	5	8	multi	0	2	whole	67.3	69	28.6	ad hoc knapping pattern, and has split from core, but large and relatively well controlled - initial core working? Who knows?
63	blade		M/EN	0	0	0	0	3	3	11	7	uni	5%	0	proximal	34.9	11.9	3.2	
77	burnt chunk		undiagnostic	0	1	0	2	3	1	9	3	uni	0	4	mesial	21.4	31.9	9.3	burnt
86	chunk		undiagnostic	0	0	0	0	2	3	9	?	?	20%	0	?	25.4	18.7	10.2	
150	flake		undiagnostic	0	2	0	0	3	3	9	4	?	0	0	distal	20.3	14.1	3.9	
152	flake		undiagnostic	0	0	0	0	2	1	2	2	uni	45%	4	whole	33.8	23.4	13.1	cherty
154	blade		M/EN	0	1	1	0	2	1	2	4	uni	10%	4	proximal	24.5	15.3	3.7	
223	flake		undiagnostic	0	0	1	0	2	1	1	1	multi	40%	0	whole	18.3	15.7	3.4	
235	flake		undiagnostic	0	0	0	0	2	1	2	4	multi	30%	0	whole	26.7	21	9.5	
235	burnt chunk		undiagnostic													35	19.7	7.2	burnt
235	flake		undiagnostic	0	0	0	0	3	1	11	2	multi	0	0	whole	19.7	18.4	3.9	
236	chip		undiagnostic													<2	<2	<2	
236	flake		undiagnostic	0	1	0	0	3	2	6	3	bi	0	4	whole	21.7	24.2	4.2	thinning flake
236	flake		undiagnostic	0	2	0	0	3	3	1	4	multi	0	4	whole	38.2	19.3	6.2	
236	flake		undiagnostic	0	1	0	0	3	3	9	3	multi	10%	0	distal	23.9	19.2	6.7	
236	flake		undiagnostic	0	0	0	0	3	3	11	2	uni	50%	4	whole	19.9	18	4.3	
236	endscraper	yes	M/EN	0	1	2	0	3	1	3	1	multi	30%	0	whole	25.9	19.5	7.1	
246	flake		undiagnostic	0	0	0	0	2	1	1	3	uni	45%	4	whole	16.2	25.6	7.1	
258	round scraper	yes	undiagnostic	0	0	0	0	2	1	1	1	uni	40%	0	whole	33.4	31.9	33.1	?Thumbnail scraper? Quite big, but retouch relatively invasive and goes nearly all the way round
271	flake		undiagnostic	0	0	0	0	2	1	4	1	bi	60%	0	whole	41.8	44.1	19.5	these three v. similar rm unit
271	flake		undiagnostic	0	0	0	0	2	3	2	0	uni	100%	0	whole	20.5	20.4	5.8	these three v. similar rm unit
271	chunk		undiagnostic	0	0	0	0	2	3	9	1	uni	60%	0	whole	17.6	22.2	7.1	these three v. similar rm unit
286	chip		undiagnostic													<2	<2	<2	

Context	Typological description	retouch?	Probable date	Abrasion	edge damage	Patination	Staining	RM	Hammer mode	Butt type	Dorsal scar count	Knapping pattern	% dorsal cortex	RCE	portion	Length	Width	Thickness	Notes
287	flake		undiagnostic	0	1	0	0	3	3	9	1	multi	70%	0	distal	23.3	15.5	4.5	Dorsal largely natural
287	blade		M/EN	0	1	1	0	3	2	5	5	uni	0	0	whole	32.6	9.2	2.7	
318	burnt chip		undiagnostic													<2	<2	<2	burnt
320	blade		M/EN	0	1	2	0	3	1	11	2	uni	0	0	proximal	12.7	10.7	2.8	
320	flake		undiagnostic	0	1	0	0	3	1	9	3	multi	0	0	distal	37.2	20.9	7.5	
333	flake		undiagnostic	0	1	0	0	3	3	2	2	multi	0	0	proximal	17.1	27.3	8.2	
360	flake		undiagnostic	0	0	1	0	3	3	5	4	multi	0	0	whole	26.6	15.8	4.1	
360	blade		M/EN	0	1	2	0	3	3	9	3	bi	0	0	mesial	23.7	7.8	2.8	
360	flake		M/EN	0	1	1	0	3	1	1	4	uni	0	0	siret	21.9	10.2	3.2	
360	chip		undiagnostic													<2	<2	<2	
360	chip		undiagnostic													<2	<2	<2	
365	chip		undiagnostic													<2	<2	<2	
369	chip		undiagnostic													<2	<2	<2	
369	chip		undiagnostic													<2	<2	<2	
369	burnt chip		undiagnostic													<2	<2	<2	burnt
384	flake		undiagnostic	0	0	1	1	3	1	9	1	multi	0	0	distal	19.7	26.4	5.7	
429	burnt chip		undiagnostic													<2	<2	<2	burnt
447	chip		undiagnostic													<2	<2	<2	
467	burnt chunk		undiagnostic													41.4	27.1	18.3	burnt
467	flake		undiagnostic	0	0	0	0	2	2	9	2	multi	20%	0	whole	33.7	10.6	5.1	
467	burnt chunk		undiagnostic													22.2	12	9.8	burnt
467	flake		undiagnostic	0	1	1	0	2	3	5	4	multi	20%	0	whole	24.8	15	4.7	
467	flake		undiagnostic	0	1	0	0	3	3	9	3	uni	30%	0%	distal	15.7	17.1	5.3	
467	casually retouched flake	yes	undiagnostic	0	1	0	0	3	3	9	4	uni	0	0	distal	21.2	22	5.1	distal 40% relict ventral
467	blade		M/EN	0	0	0	0	3	1	11	4	uni	0	0	proximal	19.6	10.4	2.6	
480	burnt chip		undiagnostic													<2	<2	<2	burnt
492	burnt flake		undiagnostic													28.8	31.7	13.8	burnt
492	burnt chunk		undiagnostic													16.4	18.9	8.9	burnt
492	burnt chunk		undiagnostic													23.6	12.6	10.5	burnt
492	chip		undiagnostic													<2	<2	<2	
492	burnt flake		undiagnostic	0	1	2	0	3	3	2	3	multi	0	4	whole	21	20.7	6.9	burnt
492	flake		undiagnostic	0	2	0	0	2	3	5	2	uni	30%	0	whole	21.2	9.2	4.6	
492	flake		undiagnostic	0	0	0	0	3	1	1	2	multi	0	0	whole	34.5	23.1	7.5	
492	flake		undiagnostic	0	1	0	0	3	3	2	3	uni	0	0	whole	23.3	10.3	3.7	
492	chip		undiagnostic													distal	<2	<2	<2
492	flake		undiagnostic	0	1	1	0	3	1	9	3	multi	0	0	mesial	22.5	22.5	6	
492	chip		undiagnostic	0	2	2	0	3	3	9	2	multi	0	0	distal	<2	<2	<2	

Context	Typological description	retouch?	Probable date	Abrasion	edge damage	Patination	Staining	RM	Hammer mode	Butt type	Dorsal scar count	Knapping pattern	% dorsal cortex	RCE	portion	Length	Width	Thickness	Notes
492	blade		M/EN	0	1	1	0	2	3	11	5	bi	20%	4	whole	28.1	14.4	5.6	
492	flake		M/EN	0	1	2	0	3	1	1	3	multi	0	4	whole	16.6	19.3	4.6	
492	blade		M/EN	0	2	2	0	3	1	11	5	bi	0	0	whole	26.5	12.1	3.4	
492	flake		undiagnostic	0	0	2	0	3	1	1	4	multi	0	4	whole	22.6	19	6.2	
492	flake		undiagnostic	0	0	0	0	3	1	5	0	0	0	0	whole	34.8	18.8	4.1	back is largely patinated ventral
492	flake		undiagnostic	0	1	0	0	3	3	9	2	?	0	0	mesial	13.3	25.3	5.9	
492	burnt flake		undiagnostic	0	3	0	0	2	1	1	1	uni	20%	4	siret	21.2	19.2	6.4	burnt
492	burnt chunk		undiagnostic	0	2	0	0	3	3	9	5	multi	0	0	mesial	31.4	26.2	11.7	burnt
511	blade		M/EN	0	1	0	0	3	3	9	4	uni	0	0	distal	27.6	8.8	2.8	
521	flake		undiagnostic	2	1	0	2	2	1	1	3	uni	60%	0	whole	53.3	27.4	5.3	
566	blade		M/EN	0	0	0	0	2	3	9	4	uni	10%	0	distal	23.1	12.7	3.9	
566	flake		undiagnostic	0	2	0	0	2	3	5	0	uni	100%	0	proximal	22.2	11.7	3.3	
566	flake		undiagnostic	0	1	0	0	2	1	5	3	uni	30%	4	whole	25.3	15.8	6.4	
566	flake		undiagnostic	0	0	0	0	2	3	5	0	uni	100%	0	whole	21.3	15.7	3.6	
661	blade		M/EN	0	0	0	0	3	2	11	9	uni	0	4	whole	26.9	14.8	3.7	
668	chunk		undiagnostic	0	0	0	0	2	3	9	?	?	?	?	?	12.1	20.8	10.1	
668	flake		undiagnostic	0	0	2	0	2	1	9	0	uni	100%	0	whole	20.9	19.4	6.5	
683	blade		M/EN	0	1	0	0	2	2	11	5	multi	20%	0	whole	32.6	17.4	4.4	
689	blade		M/EN	0	1	0	0	3	3	11	3	uni	0	4	whole	28.2	11.2	5.4	
719	blade		M/EN	0	1	1	0	3	3	5	4	uni	0	4	whole	26.8	9.7	2.7	
720	tranchet axe sharpening flake	yes	M/EN	0	1	0	0	3	1	9	5	multi	0	*	whole	51.5	20.5	18	Cherty * = complex alternate on dorsal
720	flake		early neo?	0	0	0	0	3	1	5	6	uni	0	4	whole	25	12.7	2.4	
723	flake		undiagnostic	0	1	1	0	2	3	5	2	bi	40%	0	whole	28.5	20	5.5	
723	flake		neolithic/earlier bronze age	0	0	0	0	2	1	1	4	uni	10%	4	whole	32.4	26.9	8.1	
726	burnt chip		undiagnostic													<2	<2	<2	burnt
726	burnt chip		undiagnostic													<2	<2	<2	burnt
726	chip		undiagnostic													<2	<2	<2	
747	flake		undiagnostic	0	1	2	0	2	3	9	2	uni	30%	0	mesial	29.5	19.7	7.5	
751	burnt chunk		undiagnostic													<2	<2	<2	lost; dropped on floor
752	bifacially worked flake	yes	mid-later bronze age	0	1	0	3	2	1	2	1	multi	20%	0	whole	51.1	46	17.4	
754	scraper	yes	undiagnostic	0	1	2	0	3	3	9	2	multi	0	0	distal	18	13.9	6	
762	burnt chunk		undiagnostic	0	0	0	2	2							broken	23.7	24.1	5.6	burnt
806	blade		M/EN	0	0	0	0	3	1	1	6	uni	0	4	whole	32.6	13.7	5.4	
825	flake		undiagnostic	0	1	0	0	3	3	2	2	uni	0	0	whole	26.5	13.7	4.8	
840	flake		undiagnostic	0	1	1	0	3	3	9	3	multi	0	0	mesial	26.4	29.7	5.9	

Context	Typological description	retouch?	Probable date	Abrasion	edge damage	Patination	Staining	RM	Hammer mode	Butt type	Dorsal scar count	Knapping pattern	% dorsal cortex	RCE	portion	Length	Width	Thickness	Notes
840	flake		undiagnostic	0	2	1	0	3	1	8	1	uni	5%	4	whole	22	25	5.9	
840	flake		undiagnostic	0	1	2	0	3	3	9	0	0	0	0	distal	16.9	18	7	
840	flake		undiagnostic	0	1	2	0	3	3	5	4	multi	0	0	whole	20.2	10.1	4.7	
894	burnt chip		undiagnostic													<2	<2	<2	burnt
894	flake		undiagnostic	0	0	0	0	2	1	9	5	uni	70%	4	whole	23.8	30.5	11.2	
898	small round scraper	yes	undiagnostic	0	0	0	0	3	3	9	4	multi	0	0	whole	28.8	25.9	14.1	retouch all around circumference of flake, especially proximal; has resulted in stepping on distal - unsuccessful?
898	flake		M/EN	0	0	2	0	3	3	5	3	uni	0	0	whole	22.9	12.8	3.5	
898	flake		M/EN	0	1	0	0	3	1	2	4	uni	0	4	whole	5.8	28.3	5.9	
898	flake		undiagnostic	0	0	1	0	2	1	9	2	multi	10%	0	distal	17.8	24.8	6.7	
898	flake		undiagnostic	1	3	2	0	3	3	5	3	bi	0	4	whole	20.1	14	3.6	
898	flake		undiagnostic	0	0	0	0	2	3	5	5	uni	20%	4	whole	20.1	18.1	4.7	
898	flake		early neo?	0	1	1	0	3	1	1	6	uni	0	4	proximal	35.7	23.8	7.4	
898	flake		M/EN	0	0	1	0	3	1	5	3	uni	0	4	proximal	15.6	15.9	3.6	
919	burnt flake		undiagnostic	0	2	0	0	2	3	9	2	uni	30%	0	distal	20.2	25.4	7.8	burnt
998	blade		M/EN	0	0	1	0	3	3	5	5	uni	0	4	whole	31.9	9.5	4.4	
1016	flake		undiagnostic	0	0	0	0	2	3	5	1	uni	70%	0	whole	28.2	12.5	3.7	
1120	burnt flake		undiagnostic	0	1	0	0	3	3	5	2	uni	0	4	proximal	25.1	12.3	6.5	burnt
1120	burnt flake		undiagnostic	0	1	2	0	3	3	5	2	uni	0	0	whole	19.1	11.2	2.7	burnt
1120	chunk		undiagnostic	0	1	2	0	2	1	9	0	0	40%	0	whole	23.9	43	17.9	shattered when struck; back is largely natural, not cortical
1162	chip		undiagnostic													<2	<2	<2	
1164	chip		undiagnostic													<2	<2	<2	
1242	chip		undiagnostic													<2	<2	<2	
1242	chip		undiagnostic													<2	<2	<2	
1242	burnt chip		undiagnostic													<2	<2	<2	burnt
1242	flake		undiagnostic	0	1	2	0	3	1	9	3	multi	0	0	proximal	33.8	22	13.4	
1242	flake		undiagnostic	0	0	0	0	3	3	5	3	multi	0	0	whole	28.9	15.1	5.3	
1243	rd scraper	yes	undiagnostic	0	0	0	0	3	1	2	0	multi	70%	0	whole	24.6	30.4	7.2	irregular, steep scraper retouch all around
1243	?microlith	yes	mesolithic	0	0	1	0	3	3	9	2	uni	0	0	mesial	15.5	8.8	1.7	steep, concave backing retouch along right edge
1243	chip		undiagnostic													<2	<2	<2	
1243	chip		undiagnostic													<2	<2	<2	
1243	burnt chip		?mesolithic													<2	<2	<2	burnt
1243	flake		undiagnostic	0	0	1	0	3	2	5	4	multi	0	1	proximal	39.1	20.4	12.2	has removed badly crushed parallel core edge on dorsal; platform itself shows steppign below



Context	Typological description	retouch?	Probable date	Abrasion	edge damage	Patination	Staining	RM	Hammer mode	Butt type	Dorsal scar count	Knapping pattern	% dorsal cortex	RCE	portion	Length	Width	Thickness	Notes
1243	flake		undiagnostic	0	1	1	0	2	3	9	2	multi	20%	0	distal	17.2	18.3	7.1	
1243	blade		M/EN	0	0	2	0	3	2	6	3	uni	0	4	whole	38.7	14.9	3.6	platform trimming
1243	blade		undiagnostic	0	2	1	0	3	3	9	6	multi	0	0	distal	29.8	13.5	5.2	
1243	flake		M/EN	0	0	2	0	3	1	11	3	uni	0	4	whole	16.3	10.6	3.1	
1243	blade		M/EN	0	0	0	0	3	3	9	7	multi	0	1	distal	28.7	11.4	14.9	parallel laminar scars, attempt to start platform at right angles on dorsal at right angles to predominant flaking
1243	blade		M/EN	0	0	0	0	3	2	2	4	uni	0	4	whole	33.4	12	3.2	parallel laminar scars
1243	flake		undiagnostic	0	1	2	0	3	3	9	2	multi	0	0	siret	22.3	8	3.4	
1243	flake		undiagnostic	0	1	2	0	3	3	9	1	multi	0	0	distal	25.1	9	5.8	
1243	flake		M/EN	0	1	0	0	2	3	11	1	uni	50%	0	whole	25.1	7.9	3.5	
1243	blade		M/EN	0	0	1	0	3	3	11	3	uni	0	0	whole	14.8	4.8	1.2	
1243	blade		M/EN	0	1	2	0	3	3	9	2	uni	0	0	mesial	22.3	6.9	3.6	burnt
1276	blade		M/EN	0	1	1	0	3	3	2	5	uni	0	0	proximal	32.1	11	3.5	
1284	chunk		undiagnostic	0	0	0	0	2	1	3	0	0	20%		whole	34.8	19.3	13.4	
1300	chunk		undiagnostic	0	1	1	0	3	3			multi	0	0		15.3	25.7	15.1	
1316	blade		M/EN	0	0	2	0	3	2	5	5	uni	0	4	proximal	24.8	9.8	3	
1429	chip		undiagnostic												proximal	<2	<2	<2	
1462	flake		undiagnostic	0	1	1	0	3	3	9	2	uni	0	0	distal	19.6	11.6	3.4	
+	flake		undiagnostic	2	1	0	0	2	3	3	4	multi	10%	0	whole	36.2	13.4	8.2	
+	burnt chunk		undiagnostic													24.6	14.9	6.5	burnt
+	blade		M/EN	0	0	0	0	2	2	11	4	uni	10%	0	proximal	53	23.5	9.1	
+	flake		undiagnostic	0	0	0	0	2	1	1	1	uni	30%	4	whole	25.6	26.1	8	
+	flake		undiagnostic	0	0	0	0	3	1	2	4	multi	0	0	whole	30.3	22.3	8.6	
+	flake		undiagnostic	0	0	0	0	2	2	5	3	multi	50%	0	whole	27.9	18.1	7.6	
+	flake		undiagnostic	0	2	2	0	2	2	5	1	multi	40%	0	whole	27.9	13.2	3.5	
+	blade		M/EN	0	1	0	0	3	2	5	3	uni	0	0	whole	27.1	14.3	4.9	
+	flake		undiagnostic	0	2	1	0	3	3	5	3	multi	0	0	proximal	21.9	16.3	4.8	
+	blade		M/EN	0	1	0	0	2	2	2	3	uni	10%	0	proximal	26	14.1	3	
+	burnt flake		undiagnostic	0	2	0	0	2	3	9	0	uni	100%	0	whole	23.2	21.5	3.6	burnt
+	blade		M/EN	0	2	1	0	2	1	8	3	uni	10%	4	whole	35.3	12.6	5	
+	fragment		undiagnostic	0	1	0	0	2	3	9	2	multi	10%	0	mesial	9.6	35.6	5.1	
+	flake		undiagnostic	0	0	0	0	2	1	1	1	uni	60%	4	whole	43.3	37.8	21.4	shattered when struck; back is largely natural, not cortical
+	flake		undiagnostic	0	1	2	0	2	1	5	2	uni	60%	0	whole	33.9	18.2	7.2	
+	burnt flake		undiagnostic	0	2	0	0	3	3	9	3	multi	0	0	siret	33.8	17.2	9	burnt
+	blade		M/EN	0	1	0	0	3	3	9	6	bi	0	0	distal	15.8	10.2	2.1	
+	flake		undiagnostic	0	0	0	0	3	1	1	2	multi	0	0	proximal	26.3	27.6	7.4	
+	flake		undiagnostic	0	2	0	0	3	3	5	4	?	0	0	siret	28.6	8.6	3.4	

Context	Typological description	retouch?	Probable date	Abrasion	edge damage	Patination	Staining	RM	Hammer mode	Butt type	Dorsal scar count	Knapping pattern	% dorsal cortex	RCE	portion	Length	Width	Thickness	Notes
U/S	flake		undiagnostic	0	1	0	0	3	1	2	9	multi	0	4,1	whole	47	26	14.1	
U/S	chip		undiagnostic													<2	<2	<2	
U/S	chip		undiagnostic													<2	<2	<2	
U/S	flake		undiagnostic	0	1	1	0	3	3	9	2	uni	0	0	distal	21.2	13.3	4.9	
U/S	flake		undiagnostic	0	1	0	0	2	1	1	1	uni	20%	4	siret	23.2	13.9	7	
U/S	flake		undiagnostic	0	0	1	0	3	1	4	3	multi	<5%	0	siret	35.2	23.2	6.7	
U/S	flake		undiagnostic	0	0	0	0	1	3	9	3	bi	10%	0	distal	36.7	15.5	8.1	
U/S	flake		undiagnostic	0	1	0	0	3	1	1	3	uni	0	4	whole	28.9	43.9	4.8	
U/S	flake		M/EN	0	2	1	0	3	3	1	4	uni	0	0	proximal	24.6	26.8	4.7	

**Table 4.71:** Summary statistics for debitage (excluding chips) (mm)

	Length	Width	Thickness	Maximum Dimension
Mean	26.41 ± 8.74	18.51 ± 8.37	6.99 ± 4.7	27.7 ± 8.22
Range	5.8 – 67.3	4.8 - 69	1.2 – 33.1	12.7 - 69

**Table 4.72:** Artefact totals for whole assemblage

Artefact	Number	% of Assemblage
Blades	36	15.7 %
Flakes	114	49.6 %
Fragments	14	6.1 %
Chips	37	16.1 %
Retouched artefacts	9	3.9 %
Cores	20	8.7 %
Total	230	100 %

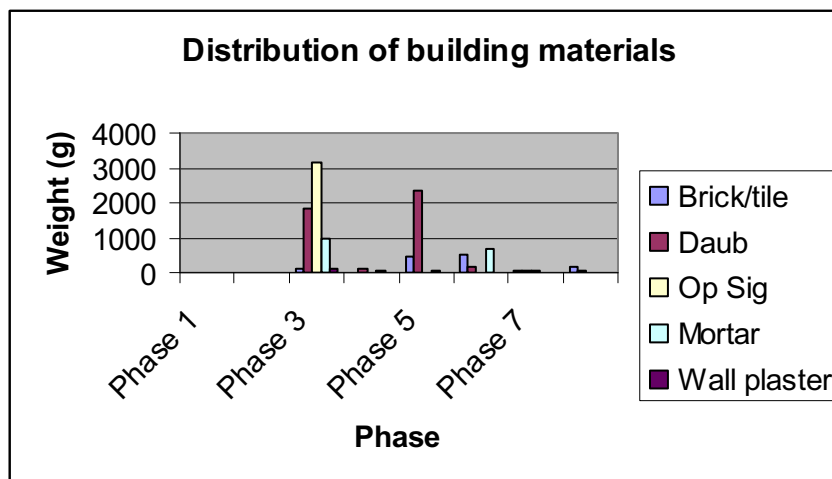
**Table 4.73:** Core types

Core type	Number of cores	Contexts
Bipolar blade cores	2	17, +
Unipolar blade core	5	1; 1016; +; u/s
Blade core, 2 unopposed platforms	1	+
Flake core, 2 unopposed platforms	2	+
Unipolar flake core	5	413, +, U/S
Single platform flake core, alternate flaking	2	3
2 unopposed platforms, alternate flaking	1	2
Migrating platform flake core	2	3, U/S
Total	20	

**Table 4.74:** Retouched and typologically distinct artefacts

Type	Number of artefacts	Contexts
Scrapers	4	258, 754, 898, 1243
Endscrapers	1	236
Casually retouched flake	1	467
Bifacially retouched flake	1	752
Microlith	1	1243
Tranchet axe resharpening flake	1	720

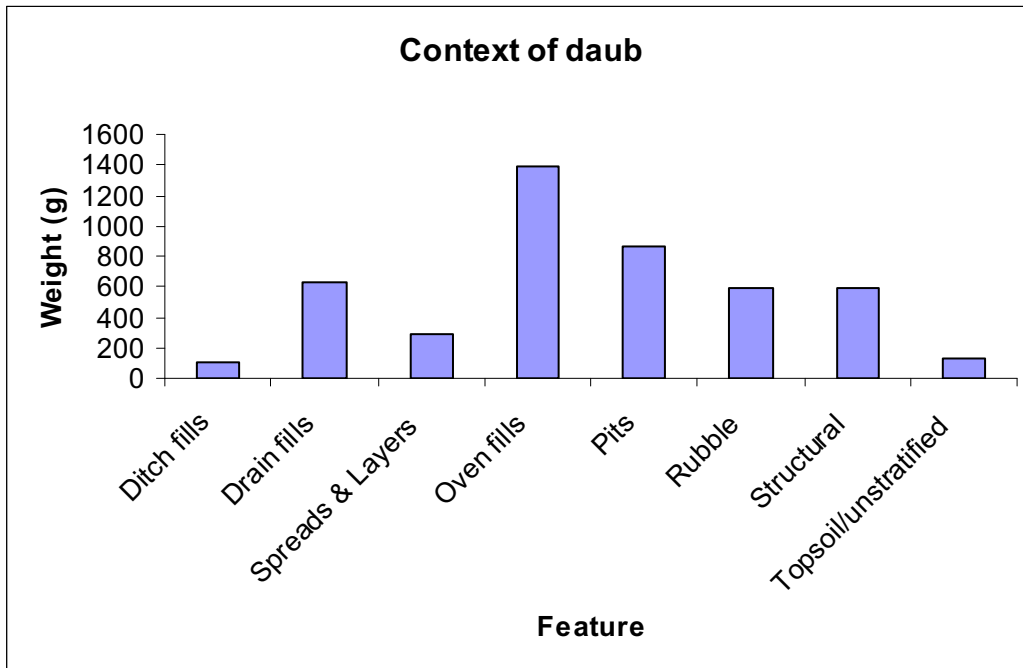
**Table 4.75:** Distribution of building materials recovered.



**Table 4.76** Archive listing of daub

<b>Context</b>	<b>No. of fragments</b>	<b>Weight (g)</b>	<b>Notes</b>
241	1	17	wattle impressions
338	1	76	
409	7	403.5	
413	3	97	
912	20	54	abraded
48	1	6	
419	11	11	abraded
466	12	47.9	1 with wattle/finger impression
584	10	549	2 with finger impressions, 2 with possible wattle impressions
641	1	5	
1313	20	563.2	
894	8	84.5	abraded
964	2	50.5	very abraded
271	2	49.5	
272	1	9.9	
370	26	633.2	2 with possible wattle impressions; abraded
371	2	51.9	
386	9	546	
490	3	40.7	
1007	5	74.5	exposed to intense heat
220	3	31.7	1 with wattle impression
333	1	15	
375	12	39	abraded
287	1	31.8	
1069	1	38	abraded
660	2	138	1 with flat surface
318	1	111	heavily fired
233	2	15.8	abraded
236	1	12.2	
318	83	297.3	abraded
1107	2	42.4	
1108	8	156.8	abraded
10	10	99.4	1 with wattle/finger impression
114	1	2.3	
323	4	67.3	abraded
492	1	81.5	

**Table 4.77:** Context of daub finds



**Table 4.78** Wall plaster

Context	No. of fragments	Weight (g)	Notes
641	19	106	white wall plaster, flat and smoothed on one face only. One with red-tint on smoothed surface, ?paint. Max T 6 mm.
981	5	12.3	white wall plaster, flat and smoothed on one face only. Max T 8.5 mm.

**Table 4.79:** Mortar

Context	No. of fragments	Weight (g)	Fabric	Notes
323	9	690	A	Fragments of white-grey vesicular ?mortar with 50-10% tiny tile/daub grit inclusions. One large lump - unlikely to have derived from wall plaster or between tiles. No original surfaces remaining
386	2	73.5	A	White, vesicular mortar/plaster with tiny brick/daub inclusions. 1 fragment burnt.
516	2	33.7	B	Coarse, compact mortar with flecks of crushed tile/brick. Light-brown in colour. One smoothed surface. Max T 13 mm.
863	2	50	A	Small abraded fragments of white mortar/plaster with small ?brick/daub inclusions
1025	26	902.5	A	White vesicular mortar/plaster with c. 10% brick/daub inclusions.

**Table 4.80:** *Opus signinum*

SF No.	Context	No. of fragments	Weight (g)	Notes
108	302	6	2322	6 large flat fragments, no longer joining. Likely to be pieces from an internal floor. Max T 49 mm.
	947	12	510.5	
	302	4	321.8	
	492	1	61	
	516	12	20	small abraded fragments
	492	1	6	

**Table 4.81: Querns**

No	SF/Ctxt/Ph	% surv	Lithological description	Type	Comments	Illust
1	1571/740/3a	50	poss Coal Measures (CM)	Saddle	Half saddle	Yes
2	-/1466/3a	50	V red fine s/s	Saddle	Grooves on g/f	Yes
3	-/994/5d	<20	Pink local fine s/s	Saddle	?Sharpening grooves of g/f	No
4	64/782/?	<90	Fine med s/s, poss CM	Beehive	Substantially complete	Yes
5	-/720/6	<90	V fine local s/s	Beehive	Re-used in paving	Yes
6	-/236/5d	<50	Med s/s poss Jurassic	Disk	Many pits and fossil? casts	Yes
7	16/7873d	<25	Med micaceous s/s	Millstone	Grooved g/f – poss upper stone	Yes
8	-/994/5d	<10	Pink local fine s/s	Disk/Mls t	Dressed g/f and rynd slot	Yes
9	-/720/6	<20	Millstone Grit	Disk/Mls t	Poss same stone as /1092 & /879 group	No
10	-/1092/5a	<20	Millstone Grit	Disk/Mls t	Poss same stone as /720	No
11	-/879/5b	>10	Millstone Grit	Disk/Mls t	Poss same stone as /720	No
12	-/F325/	95	Millstone Grit	Millstone	In paving at base of pit	Yes
13	-/905/	>10	Mayen lava	?	Worn fragment	No

## Appendix 5: environmental data tables

**Table 5.1:** Environmental samples assessed and/or analysed - context order (Z= barren, plain number=seeds in assessed samples, F+number = fully analysed plus number of seeds in assessment)

Phase	Context	Description	Seeds	Barren sample	Fully analysed
6	2	Upper fill of hollow F4	16		
6	3	Lower fill of hollow F4	3		
3a	11	Fill of ditch F12	1		
3a	13	Fill of ditch F14	4		
3d	17	Same as 8 DITCH F6	2		
4	19	Fill of ditch F20	Z	1	
5a	21	Fill of ditch F22	2		
5b	23	Fill of ditch F24	1		
5a	27	Same as 9 FILL OF DITCH F7	Z	1	
3a	33	Fill of gully 11	Z	1	
3a	38	Same as 13 FILL OF DITCH f14	Z	1	
3b	48	Fill of ditch F49	5		
6	50	Fill of ditch F51	1		
6	54	Fill of ditch F55	1		
4	56	Fill of ditch F20	Z	1	
5b	61	Fill of ditch F62	Z	1	
5b	63	Fill of ditch F62	1		
3a	64	Fill of pit F65	Z	1	
5a	66	Fill of ditch F60	Z	1	
2	70	Fill of F113=ditch	Z	1	
6	84	Fill of pit F85	Z	1	
3b	89	Same as 46 DITCH F47	Z	1	
3a	95	Same as 82 DITCH F83	Z	1	
3a	97	Fill of ditch F98	2		
3b	99	Fill of ditch F49	2		
4	101	Fill of gully F102	Z	1	
4	103	Fill of gully F104	1		
5b	108	Same as 74 DITCH F62	Z	1	
6	110	Fill of ditch F109	2		
3a	111	Same as 13 DITCH F14	Z	1	
5b	116	Fill of ditch F62	1		
5b	119	Same as 73 DITCH F62	Z	1	
3a	120	Stone spread	3		
5a	121	Same as 9 DITCH F7	Z	1	
5a	123	Fill of gully F124	Z	1	
3a	125	Same as 13 DITCH F14	Z	1	
3b	127	Same as 48 DITCH F49	Z	1	
3a	135	Fill of pit F142	Z	1	
6	136	Fill of gully F137	1		
5a	139	Same as 15 DITCH F7	Z	1	
6	145	Fill of hollow F144	2		
3b	157	Fill of ditch F158	Z	1	
2	164	Fill of gully F165	Z	1	
3a	166	Same as 8 DITCH F6	Z	1	
2	168	Fill of pit F169	Z	1	
3a	183	Fill of gully F184	Z	1	
6	186	Same as F88= a ditch cut	1		
null	188	Cancelled	Z	1	
5a	190	Fill of ditch F191	Z	1	
5a	192	Fill of ditch F193	Z	1	

Phase	Context	Description	Seeds	Barren sample	Fully analysed
3a	215	Upper fill of pit F217	F+16		1
3a	216	Lower fill of pit F217	130		
3a	221	Fill of posthole F222	F+10		1
5b	232	Fill of ditch F231	3		
5d	233	Layer – sand silt	Z	1	
5b	239	Fill of ditch F240	1		
5b	243	Fill of ditch F242	1		
5b	246	Fill of ditch F242	F+11		1
6	257	Fill of pit F256	1		
5c	261	Layer - stone rubble	2		
6	270	Fill of pit F269	Z	1	
1	283	Fill of pit F284	Z	1	
5a	311	Fill of F310 a rectangular stone structure	Z	1	
5a	313	Layer – clay	1		
3a	316	Fill of F315; F317 a culvert	1		
5d	318	Fill of F319 an oven	2		
5a	330	Same as 312 F366 cut of pit at base of F310 that rect stone struct	F+10		1
5b	333	Layer - clay	Z	1	
3a	338	Fill of F339 oven	2		
6	345	Fill of pit F346	1		
6	347	Fill of pit F348	1		
6	349	Fill of pit F350	3		
5a	357	Fill of stakehole F358	Z	1	
3a	361	Layer – sand silt	4		
5a	370	Fill of stone drain F274	3		
5b	375	Fill of stoke pit	3		
5a	378	Upper fill of flue F301	Z	1	
4	379	Lower fill of flue F301	F+121		1
5b	392	Fill of gully F393	2		
5d	394	Fill of pit F395	2		
5c	399	Upper fill of F401 a pit	Z	1	
3a	402	Fill of pit F403	1		
1	415	Fill of pit F416	F+218		1
2	417	Fill of pit F418	F+52		1
3b	419	Fill of F420 an oven	3		
3a	444	Fill of F340 oven construction cut	1		
5d	447	Fill of pit F448	2		
3a	457	Fill of gully F458	Z	1	
3b	466	Fill of oven F420	4		
5a	490	Fill of flue F339 at mouth of stoke pit	F+124		1
5a	493	Fill of flue F489	Z	1	
5a	494	Fill of flue F489	1		
3b	506	Fill of pit F505	F+10		1
4	515	Fill of flue linking F301/F310	1		
4	516	Fill of flue linking F301/F310	F+90		1
4	542	Grave fill	2		
5c	544	Fill of pit F543	1		
3a	552	Fill of gully F553	5		
5c	554	Fill of gully F555	6		
5d	560	Fill of gully F561	1		
5a	586	Fill of grave F587	6		
5a	588	Fill of grave F589	1		
5a	616	Hearth	2		



Phase	Context	Description	Seeds	Barren sample	Fully analysed
5b	620	Layer – sand silt clay	Z	1	
3c	623	Fill of F624 slot cut	1		
3d	641	Fill of ditch F1199	F+303		1
5c	659	Clay bonding of F656 - a wall	Z	1	
5d	672	Fill of F566 has flues therefore assume oven	F+81		1
5c	680	Fill of gully F679	Z	1	
5b	682	Fill of pit F681	2		
5c	686	Fill of pit F685	2		
5c	717	Layer – clay silt	1		
1	723	Fill of pit F724	4		
5b	750	Layer – silt	4		
3a	754	Fill of stone lined drain F756	1		
6	762	Layer – silt sand gravel	5		
6	763	Fill of pit F777	Z	1	
3b	768	Fill of ditch F769	4		
3a	770	Fill of ditch F771	Z	1	
3b	772	Fill of ditch F773	3		
3c	774	Fill of ditch F775	1		
3c	783	Oven lining	4		
5b	789	Fill of gully F790	Z	1	
5c	793	Fill of gully F794	1		
3c	795	Fill of pit F796	1		
3c	805	Fill of oven F781	8		
3a	807	Fill of ditch F809	1		
6	826	Fill of pit F777	2		
4	829	Fill of F801=F891 a construction cut	3		
3c	834	Fill of pit F833	Z	1	
3b	836	Fill of posthole F835	5		
3c	840	Fill of oven F664	F+12		1
3c	841	Fill of pit F842	1		
6	845	Fill of F846 rectangular pit	1		
3b	850	Fill of posthole F849	2		
3b	854	Fill of posthole F853	Z	1	
3a	856	Fill of slot F855	7		
3c	858	Fill of pit F857	Z	1	
3b	861	Fill of posthole F860	2		
3c	863	Fill of pit F862	Z	1	
3c	865	Fill of posthole F864	6		
5a	868	Fill of pit F867	Z	1	
3b	871	Fill of posthole F870	F+11		1
5a	873	Fill of pit F872	F+310		1
3c	882	Fill of pit F881	124		1
5a	884	Fill of gully F884	3		1
5a	885	Fill of gully F886	Z	1	
1	898	Fill of gully F1002	Z	1	
3c	906	Fill of oven F664	F+396		1
3a	912	Fill of pit F915	112		
5a	924	Fill of pit F874	F+272		1
5a	927	Fill of pit F872	F+175		1
3d	937	Fill of pit F938	6		
3b	951	Fill of posthole	1		
3c	953	Fill of post pit F952	1		
3c	959	Fill of posthole F958	1		
3b	963	Fill of posthole F962	1		

<b>Phase</b>	<b>Context</b>	<b>Description</b>	<b>Seeds</b>	<b>Barren sample</b>	<b>Fully analysed</b>
4	964	Fill of F801=F891 a construction cut	F+56		1
5a	967	Fill of pit F968	3		
3c	979	Fill of gully F980	1		
5a	982	Ditch cut	Z	1	
5b	983	Oven cut	F+16		1
5d	994	Fill of pit F995	F+39		1
6	998	Fill of ditch F999	Z	1	
6	1000	Fill of pit/hearth F1001	Z	1	
3c	1023	Fill of pit F1022	Z	1	
3c	1025	Fill of posthole F1024	Z	1	
5a	1030	Fill of pit F1058	4		
3d	1054	Same as 1013	Z	1	
3c	1094	Fill of pit F1093	3		
5a	1099	Fill of pit F1098	Z	1	
5d	1108	Fill of flue F761	F+181		1
5d	1109	Fill of flue F761	F+44		1
3a	1223	Same as 1156 FILL GULLY 1157	Z	1	
5a	1229	Fill of pit F1101	9		
3d	1236	Fill of pit F1237	Z	1	
3d	1318	Fill of oven flue F1311	2		
3a	1449	Fill of pit F1450	2		
3b	1453	Fill of grave cut F1455	29		

**Appendix 5.2: Charred plant remains from fully analysed samples (counts, not standardised)**

Material from 912 and 216, both from 3a, was sufficiently badly preserved that only qualitative data were obtained, these are discussed in the phase level results above. Pale highlighted taxon names are those classed as “weeds” for the triangular plots

code	eco	Biolab. Code	3557	3558	3552	3553	3560	3565	3564	3569	3567	3562	3556	3561	3547	3555	3559	3566	3568	3570	3571	3554	3548	3563	3549	3550	3551
291	aa	Context number	415	417	215	221	506	871	840	906	882	641	379	516	964	330	490	873	884	924	927	246	983	672	994	1108	1109
575	aa	Phase/period.	1	2	3a	3a	3b	3b	3c	3c	3c	3d	4	4	4	5a	5a	5a	5a	5a	5a	5b	5b	5d	5d	5d	5d
335	aa	Sample number																			24						
553	aa	Volume floated (litres)				1	11	2		20	5	25	4		4	8	1	17	5	13	15		25	10	29	31	52
2345	cc	Triticum dicoccon-type	103																								
2106	cc	Hordeum naked	54	8														4					1				
2125	cc	Hordeum indet.	66	80	6	1			2			2				1	1						10				
2124	cc	Cerealia undiff.	13	84	6		2		27		2	52	60	130	6	4	8	145		95		21	24	21	27	249	264
2105	cc	Hordeum hulled	14	11	12		1		23	4		27	1	16	23		2	46		13	2	10	47	22	11	35	60
2102	cc	Avena grain	2		2		2		9	62	2	46	26	23	7		1	29		19	30	3		4		13	180
2118	cc	Triticum sp(p). grain	112	53			35	2	80	59	22	483	34	116	5	1	5	620	2	302	1204	26		113	52	474	918
2117	cc	Triticum aestivum grain			1				1	3	12		4										1		3		
2344	cc	Triticum spelta-type											10	4													
2382	cs	Triticum spelta glume	1		5	11	18	1	399	150	2	1612	693	517	23	22	1	306		258	1095	154	1	106	54	360	2409
2341	cs	Triticum glume			5		4	2	102	133	2		18	10	27							80	96		43		123
2649	cs	Triticum spelta spikelet			1				38	37	2	7	86	39	5	2	2	4		4	118	10			5	13	57
2122	cs	Triticum brittle rachis internode				1			58	75		464	571	30				80		52	154	3		10	14	29	117
2097	cs	Avena awn			1	1	1		2	2		3		53	2	1						6	1		4	65	573
2099	cs	Avena sativa floret base											1	1													9
2113	cs	Hordeum rachis internode			6		2		9	1		15	4	2	9			12		2		3		6	3	4	27
2114	cs	Hordeum 6-row rachis frag			6				7	1		4	3	1	6			13		2		6	7			1	21
2425	cs	Hordeum basal internode							1			2		1	1			1						1			
2123	cs	Culm nodes		1						2	5			7			1				1						
2116	cs	Secale rachis internode								3	1											1					
2886	cs	Triticum aestivum rachis node								1							1					20			2		12
2544	cs	Triticum dicoccon glume base	1												1												
2417	cs	Triticum dicoccon spikelet	11												1												
2043	ce	Linum usitatissimum	13						1																		
2095	ct	Corylus avellana nut frag.	4	2			1		2					1					1								
2086	ce	Vicia faba												3										3			
2154	ct	Rubus fruticosus							1																		
2001	ca	Agrostemma githago										5	1								1					1	6
2002	ca	Anthemis cotula										1					7						2			4	21
2021	ca	Chenopodium album	105	12			7		9		10	6		2	16		2	9									90
2055	ca	Fallopia convolvulus	49	12						2	1														2		
2058	ca	Polygonum laph./persicaria	84	8					3	1		3		1				3		6						1	
2014	cw	Carex (lenticular)	54	109					2												8	24		1			
2057	ca	Polygonum lapathifolium	21																			5					
2432	cx	Gramineae <2mm	66		3		8		7		2	8		2	8	2		33		11	64	2	12		10	16	435
2259	cg	Gramineae >4mm										11		1	3								3				6
2748	cg	Gramineae 2-4mm		1			1					1		3				5		5	5				2	2	6
2049	cg	Plantago lanceolata					1		6					2		4		4		12	5		1		1		30
2072	ch	Danthonia decumbens	1		1		15	2	102	2	4	1		5	3	4	1	6		7	57	3			10	2	12
2015	cw	Carex (trigonus)	5		1		1		19	2	10	25		16	1		1			7	5		2		3		

code	eco	Biolab. Code	3557	3558	3552	3553	3560	3565	3564	3569	3567	3562	3556	3561	3547	3555	3559	3566	3568	3570	3571	3554	3548	3563	3549	3550	3551
2069	cr	Rumex obtusifolius-type		6	1		3		4	7	1	2	1	5	3	1		2		1		1	2		2	6	204
2431	cr	Tripleurospermum maritimum							5			30	1		1	1	4	9		12	16	3			8	7	390
2103	cx	Bromus sp(p). grain					1		5	22	4	4	8	64	1	1		20			424	5			2	12	189
2023	cr	Chenopodiaceae undiff.			1				5			15		2						6	21		6		4	6	141
2066	cr	Raphanus raphanistrum pod			1		2		6	3		1		8				1		1	23	1			6	2	12
2606	cr	Veronica chamaedrys	4	1							2	2			2												3
2029	cr	Galium aparine			1		1				35	7		7		1		6				1			1	1	3
2427	ct	Stellaria holostea							1																		
2039	cx	Legume <4mm	1	7	1		1			2		6	1		1	1	4	6		5			9		20	14	81
2144	cw	Juncus					1					45			2					6					29		
2178	cw	Montia font. chond.	1						1			45		10		3		12			248				16	7	12
2008	cx	Arrhenatherum elatius - tuber	1				2		2			11													2		
2094	ca	Stellaria media	1									15						6			8		1			4	123
2053	ca	Polygonum aviculare	2						1	1		2		1						2							
2159	cw	Ranunculus flammula					2																				
2075	ca	Spergula arvensis					1																				
2011	cr	Brassica sp(p).							2																		
2228	cw	Lycopus europaeus							1																		
2059	ca	Polygonum periscaria							1																		
2162	ca	Fumaria sp(p)							1																		
2186	cr	Potentilla erecta-type																							2		
2142	cr	Cirsium sp(p).																	3								
2064	cx	Ranunculus repens-type											1					1		2							
2201	cx	Rosaceae undiff.																				3					
2067	cg	Rumex acetosa								1																1	
2174	cw	Stellaria graminea										15															
2062	cx	Polygonaceae undiff.					3					15								3			1				
2077	cx	Trifolium sp(p).										15										1	5				
2036	cr	Lapsana communis																					1				
2257	cw	Isolepis setaceus										1													1		
2046	ca	Papaver sp(p).																			8		1				279
2246	cx	Compositae undiff.																			32						207
2359	wa	Papaver dubium																									156
2068	cr	Rumex acetosella																							2	36	
2252	cx	Luzula sp(p).																									21
2164	cx	Cruciferae undiff.																									12
2310	ca	Thalspi arvense																									12
2214	ca	Urtica urens																									12
2234	cx	Galium sp.												1													3
2165	cx	Viola sp(p).														1				1	16						3
2163	cr	Raphanus raphanistrum																									6

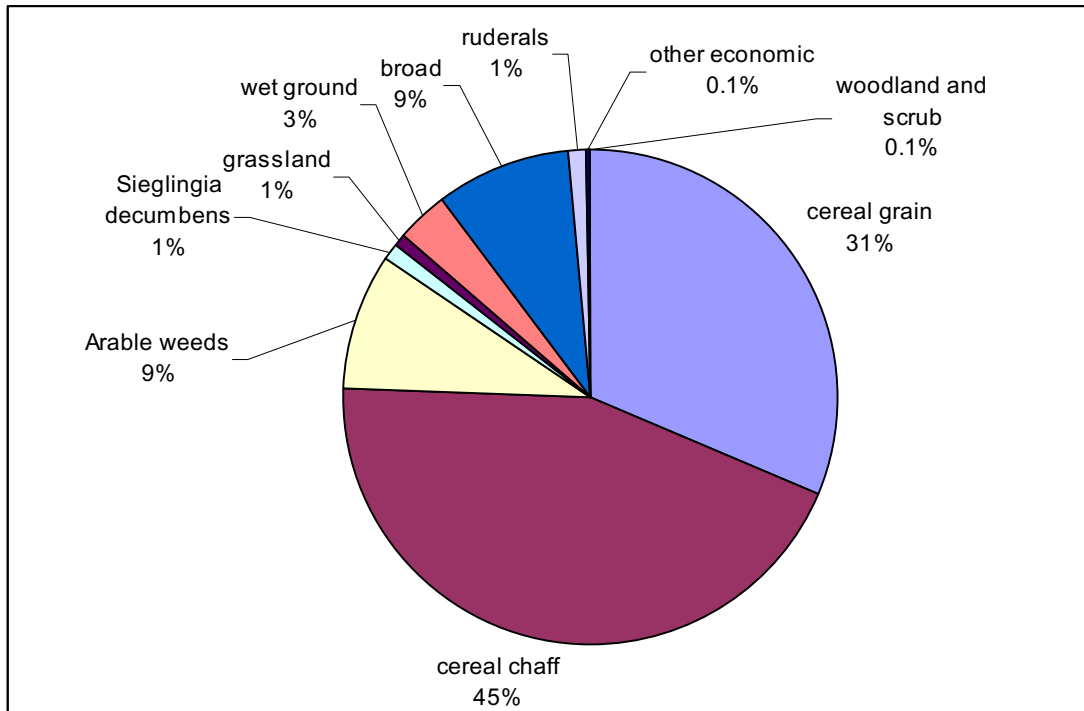
**Table 5.3: Samples by phase**

phase	assessed	analysed	barren	% barren
1	4	1	2	50.00
2	4	1	3	75.00
3a	30	2	12	40.00
3b	18	2	4	22.22
3c	19	3	4	21.05
3d	6	1	2	33.33
4	10	3	3	30.00
5a	31	6	15	48.39
5b	18	2	6	33.33
5c	9	0	3	33.33
5d	9	4	1	11.11
6	20	0	5	25.00
null	1	0	1	100.00

**Table 5.4: Samples by context type**

	assessed	analysed	barren	% barren
clay layer	4		2	50.00
context cancelled	1	1		
ditch fill	47	2	24	51.06
drain fill	2			
fill hollow	3			
flue fill	10	5	2	20.00
grave fill	4			
gully fill	21	1	11	52.38
hearth/pit fill	2		1	50.00
mineral layer - sand, gravel, mortar	6		2	33.33
oven/stoke pit fill	12	4		
pit fill	49	10	16	32.65
post pit/hole fill	13	2	3	23.08
slot fill	4	1		
spread	1			

**Table 5.5:** Proportions of taxa by broad ecological category



**Table 5.6:** Cereal grain records

	% of total assemblage	# occurrences	# seeds
Triticum sp(p). grain	20.31	22	4513
Cerealia undiff.	5.58	20	1240
Avena grain	2.07	18	460
Hordeum hulled	1.71	20	380
Hordeum indet.	0.76	9	169
Triticum dicoccon	0.46	1	103
Hordeum naked	0.30	4	67
Triticum aestivum grain	0.11	7	25
Triticum spelta	0.06	2	14
cereal grain	31.37		6971

**Table 5.7:** Cereal chaff records

	% total assemblage	Occurrence	Sum
Triticum spelta glume	27.36	23	6079
Triticum brittle rachis internode	7.46	14	1658
Avena awn	3.22	14	715
Triticum glume	2.90	13	645
Triticum spelta spikelet	1.94	17	430
Hordeum rachis internode	0.47	15	105
Hordeum 6-row rachis internode	0.35	13	78
Triticum aestivum rachis node	0.16	5	36
Culm nodes	0.08	6	17
Triticum dicoccon spikelet	0.05	2	12
Avena sativa floret base	0.05	3	11
Hordeum basal internode	0.03	6	7
Secale rachis internode	0.02	3	5
Triticum dicoccon glume base	0.01	2	2
cereal chaff	44.11		9800

**Table 5.8:** Weedy taxa of all kinds

		% taxon's category	sum	% total weed categories
cx	Bromus sp(p). grain	38.56	762	14.13
cx	Gramineae <2mm	34.87	689	12.78
cr	Tripleurospermum maritimum	42.61	487	9.03
cw	Montia font. chond.	47.08	355	6.59
ca	Papaver sp(p).	24.89	288	5.34
ca	Chenopodium album	23.16	268	4.97
cr	Rumex obtusifolius-type	22.05	252	4.67
cx	Compositae undiff.	12.10	239	4.43
ch	Danthonia decumbens	100.00	238	4.41
cr	Chenopodiaceae undiff.	18.11	207	3.84
cw	Carex (lenticular)	26.26	198	3.67
cx	Legume <4mm	8.10	160	2.97
ca	Stellaria media	13.66	158	2.93
ca	Papaver dubium	13.48	156	2.89
ca	Polygonum lapth./persicaria	9.51	110	2.04
cw	Carex (trigonous)	13.00	98	1.82
cw	Juncus	11.01	83	1.54
cr	Raphanus raphanistrum pod frag.	5.86	67	1.24
ca	Fallopia convolvulus	5.70	66	1.22
cg	Plantago lanceolata	53.66	66	1.22
cr	Galium aparine	5.60	64	1.19
cr	Rumex acetosella	3.32	38	0.70
ca	Anthemis cotula	3.03	35	0.65
cg	Gramineae 2-4mm	25.20	31	0.58
ca	Polygonum lapathifolium	2.25	26	0.48
cg	Gramineae >4mm	19.51	24	0.45
cx	Polygonaceae undiff.	1.11	22	0.41
cx	Trifolium sp(p).	1.06	21	0.39
cx	Luzula sp(p).	1.06	21	0.39
cx	Viola sp(p).	1.06	21	0.39
cx	Arrhenatherum elatius - tuber	0.91	18	0.33
cw	Stellaria graminea	1.99	15	0.28
ca	Agrostemma githago	1.21	14	0.26
cr	Veronica chamaedrys	1.22	14	0.26
ca	Thalspi arvense	1.04	12	0.22
ca	Urtica urens	1.04	12	0.22
cx	Cruciferae undiff.	0.61	12	0.22
ca	Polygonum aviculare	0.78	9	0.17
cr	Raphanus raphanistrum	0.52	6	0.11
cx	Galium sp.	0.20	4	0.07
cx	Ranunculus repens-type	0.20	4	0.07
cr	Cirsium sp(p).	0.26	3	0.06
cx	Rosaceae undiff.	0.15	3	0.06
cg	Rumex acetosa	1.63	2	0.04
cr	Potentilla erecta-type	0.17	2	0.04
cr	Brassica sp(p).	0.17	2	0.04
cw	Isolepis setaceus	0.27	2	0.04
cw	Ranunculus flammula	0.27	2	0.04
ca	Spergula arvensis	0.09	1	0.02
ca	Polygonum periscaria	0.09	1	0.02

		% taxon's category	sum	% total weed categories
ca	Fumaria sp(p)	0.09	1	0.02
cr	Lapsana communis	0.09	1	0.02
cw	Lycopus europaeus	0.13	1	0.02

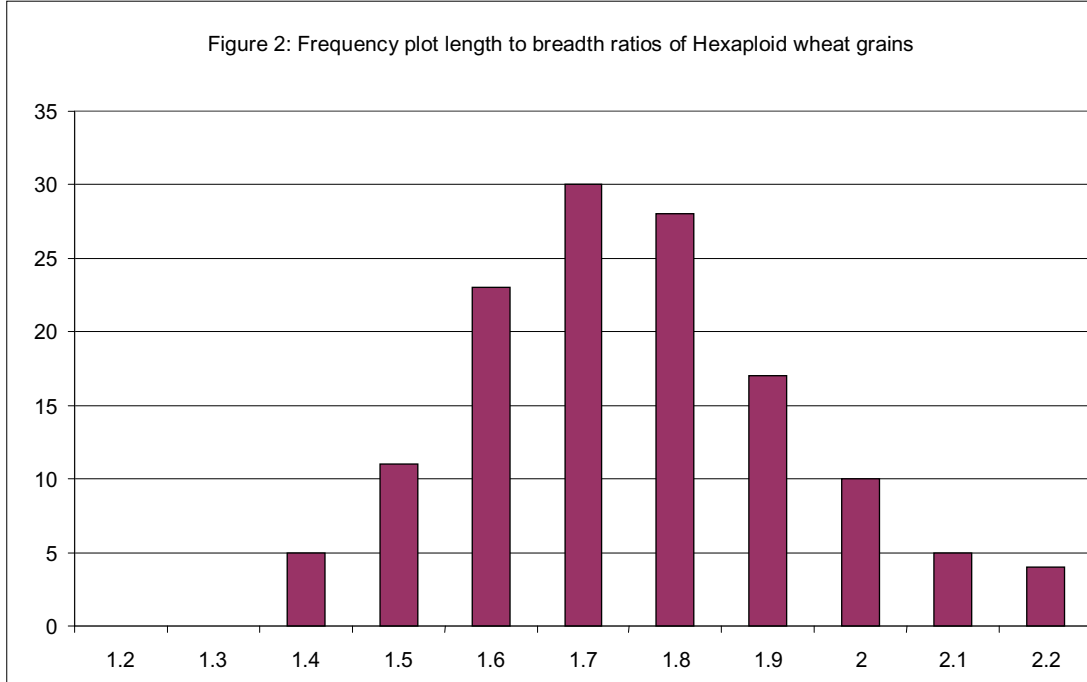
**Table 5.9:** Percentage data by phase

aa	Phase/period.	1	2	3a	3b	3c	3d	4	5a	5b	5d
cc	Cerealia undiff.	1.65	21.3	8.0	1.63	1.77	1.73	7.09	4.21	8.98	6.08
cc	Hordeum hulled	1.77	2.78	16.0	0.81	1.65	0.9	1.45	1.05	11.4	1.39
cc	Triticum sp(p). grain	14.2	13.4		30.1	9.82	16.1	5.61	35.6	5.19	16.9
cc	Hordeum indet.	8.37	20.3	9.33		0.12	0.07		0.03	2	
cc	Hordeum naked	6.84	2.03						0.07	0.2	
cc	Triticum dicoccon	13.1									
cc	Avena grain	0.25		2.67	1.63	4.45	1.53	2.03	1.32	0.6	2.13
cc	Triticum aestivum grain			1.33		0.98		0.14		0.2	0.03
cc	Triticum spelta							0.51			
cs	Triticum spelta glume	0.13		21.3	15.4	33.6	53.6	44.6	28.1	30.9	31.7
cs	Culm nodes		0.25			0.43		0.25	0.03		
cs	Avena awn			2.67	0.81	0.24	0.1	1.99	0.02	1.4	6.95
cs	Hordeum rachis internode			8.0	1.63	0.61	0.5	0.54	0.23	0.6	0.43
cs	Triticum glume			6.67	4.88	14.5		1.99	1.34	19.2	1.8
cs	Triticum spelta spikelet			1.33		4.7	0.23	4.7	2.17	2	0.81
cs	Hordeum 6-row rachis frag			8.0		0.49	0.13	0.36	0.25	2.59	0.24
cs	Triticum brittle rachis int					8.11	15.4	21.7	4.78	0.6	1.84
cs	Hordeum basal internode					0.06	0.07	0.07	0.02		0.01
cs	Triticum aestivum rachis node					0.06			0.35		0.15
cs	Secale rachis internode					0.24				0.2	
cs	Triticum dicoccon spikelet	1.39						0.04			
cs	Triticum dicoccon glume base	0.13						0.04			
cs	Avena sativa floret base							0.07			0.1
ce	Linum usitatissimum	1.65				0.06					
ct	Corylus avellana nut frag.	0.51	0.51		0.81	0.12		0.04	0.02		
ct	Rubus fruticosus					0.06					
ce	Vicia faba							0.11		0.6	
cx	Legume <4mm	0.13	1.77	1.33	0.81	0.12	0.2	0.07	0.27	1.8	1.25
cx	Gramineae <2mm	8.37		4.0	6.5	0.55	0.27	0.36	1.84	2.79	4.99
ca	Chenopodium album	13.3	3.04		5.69	1.16	0.2	0.65	0.18		0.97
ca	Polygonum lapth./persicaria	10.6	2.03			0.24	0.1	0.04	0.15		0.01
ca	Fallopia convolvulus	6.21	3.04			0.18					0.02
cw	Carex (lenticular)	6.84	27.6			0.12			0.53	0.2	
cr	Veronica chamaedrys	0.51	0.25			0.12	0.07	0.07			0.03
ca	Polygonum aviculare	0.25				0.12	0.07	0.04	0.03		
ca	Stellaria media	0.13					0.5		0.23	0.2	1.38
ca	Polygonum lapathifolium	2.66							0.08		
ch	Danthonia decumbens	0.13		1.33	13.8	6.59	0.03	0.29	1.25	0.6	0.26
cw	Carex (trigonus)	0.63		1.33	0.81	1.89	0.83	0.61	0.22	0.4	0.03
cw	Montia font. chond.	0.13				0.06	1.5	0.36	4.39		0.38
cx	Arrhenatherum elatius - tuber	0.13			1.63	0.12	0.37				0.02
cg	Gramineae 2-4mm		0.25		0.81		0.03	0.11	0.25		0.11
cr	Rumex obtusifolius-type		1.52	1.33	2.44	0.73	0.07	0.33	0.07	0.6	2.3

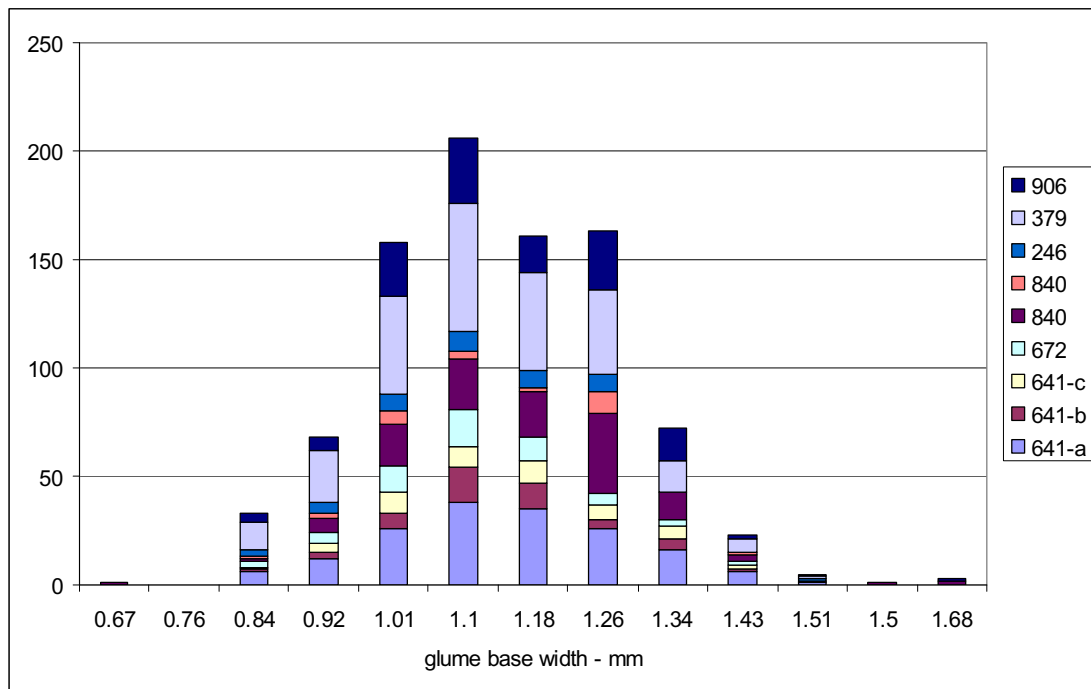


aa	Phase/period.	1	2	3a	3b	3c	3d	4	5a	5b	5d
cr	Chenopodiaceae undiff.			1.33		0.3	0.5	0.07	0.45	1.2	1.64
cr	Galium aparine			1.33	0.81	2.13	0.23	0.25	0.12	0.2	0.05
cr	Raphanus raphanistrum pod			1.33	1.63	0.55	0.03	0.29	0.42	0.2	0.22
cg	Plantago lanceolata				0.81	0.37		0.07	0.42	0.2	0.34
cx	Bromus sp(p). grain				0.81	1.89	0.13	2.64	7.43	1	2.2
cw	Juncus				0.81		1.5	0.07	0.1		0.31
cx	Polygonaceae undiff.				2.44		0.5		0.05	0.2	
cr	Tripleurospermum maritimum					0.3	1	0.07	0.7	0.6	4.39
ca	Agrostemma githago						0.17	0.04	0.02		0.08
ca	Anthemis cotula						0.03		0.12	0.4	0.27
cg	Gramineae >4mm						0.37	0.14		0.6	0.06
cx	Ranunculus repens-type							0.04	0.05		
ca	Papaver sp(p).								0.13	0.2	3.02
cw	Ranunculus flammula				1.63						
ca	Spergula arvensis				0.81						
cr	Brassica sp(p).					0.12					
cw	Lycopus europaeus					0.06					
ca	Fumaria sp(p)					0.06					
ct	Stellaria holostea					0.06					
ca	Polygonum periscaria					0.06					
cg	Rumex acetosa					0.06					0.01
cr	Lapsana communis									0.2	
cx	Trifolium sp(p).						0.5			1.2	
cw	Stellaria graminea						0.5				
cw	Isolepis setaceus						0.03				0.01
cx	Rosaceae undiff.									0.6	
cr	Cirsium sp(p).								0.05		
cx	Compositae undiff.								0.53		2.24
cx	Galium sp.							0.04			0.03
wa	Papaver dubium										1.69
cr	Rumex acetosella										0.41
ca	Thalspi arvense										0.13
ca	Urtica urens										0.13
cx	Cruciferae undiff.										0.13
cx	Luzula sp(p).										0.23
cr	Raphanus raphanistrum										0.06
cr	Potentilla erecta-type										0.02
cx	Viola sp(p).								0.3		0.03
	Total seeds	789	395	75	123	1640	3009	2765	5988	501	9234

**Table 5.10:** Frequency plot length to breadth ratios of Hexaploid wheat grains



**Table 5.11:** Spelt glume base width from nine contexts (legend=context number). N=894.



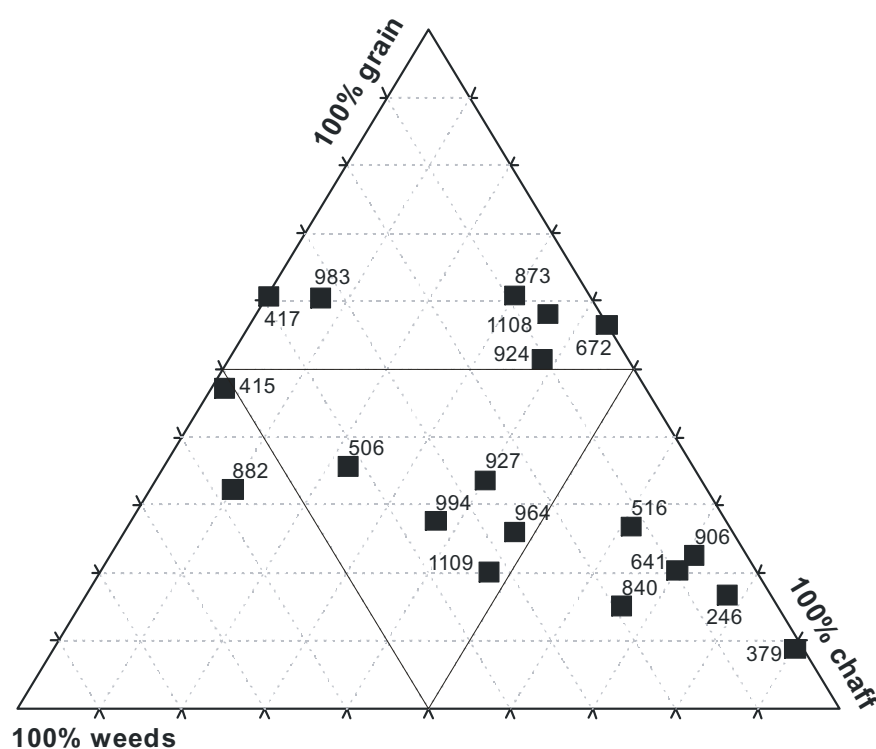
**Table 5.12:** Barley rachis to grain ratios

Context	Phase	total chaff	total grain	grain to chaff ratio
415	1		134	
417	2		99	
1109	5d	48	60	1.25

**Table 5.13:** Glume wheat grain to chaff ratios

Context number	Phase/period.	total grain	total chaff	total	grain:glume	context
415	1	215	24	239	8.96	Pit fill
840	3c	80	573	653	0.14	Oven fill
906	3c	59	357	416	0.17	Oven fill
641	3d	483	1626	2109	0.30	Ditch fill
379	4	44	883	927	0.05	Flue fill
516	4	120	605	725	0.20	Flue fill
873	5a	620	314	934	1.97	Pit fill
924	5a	302	266	568	1.14	Pit fill
927	5a	1204	1411	2615	0.85	Pit fill
246	5b	26	270	296	0.10	Ditch fill
672	5d	113	106	219	1.07	Oven fill
994	5d	52	107	159	0.49	Pit fill
1108	5d	474	386	860	1.23	Flue fill
1109	5d	918	2646	3564	0.35	Flue fill

**Table 5.14:** Proportions of grain to chaff to possible weeds



**Table 5.15:** Wheat to barley grain ratios

Context number	415	417	840	641	516	873	924	927	672	1108	1109
wheat:barley ratio	1.6	0.54	3.24	16.7	7.5	12.4	23.2	602	5.14	13.5	15.3

**Table 5.16:** Radiocarbon dates for Context 415

Laboratory code	Sample	Material	$\delta^{13}\text{C}$ (‰)	Radiocarbon Age (BP)	Calibrated date range (95% confidence)
OxA-17825	Sample 10 [415]	emmer grain	-23.3	3074 ± 26	1420–1260 cal BC
OxA-17863	Sample 11 [415]	naked barley grain	-24.5	3064 ± 31	1420–1250 cal BC

**Table 5.17:** Phase 6 full analysis data (all from 5 litre sediment samples)

	3	54	145	257	347	762	826
<i>Corylus avellana</i> shell	1	2					
<i>Hordeum</i> undiff	3		1			3	1
<i>Hordeum rachis internode</i>	1		1				
<i>Danthonia decumbens</i>		4			1		
<i>Polygonum</i> undiff		1					
Emmer spikelet		1					
Spelt gume base		1					
Cerealia indet			1			1	
<i>Hordeum</i> hulled			1				1
<i>Bromus</i>				1			
2-4mm Gramineae					1		

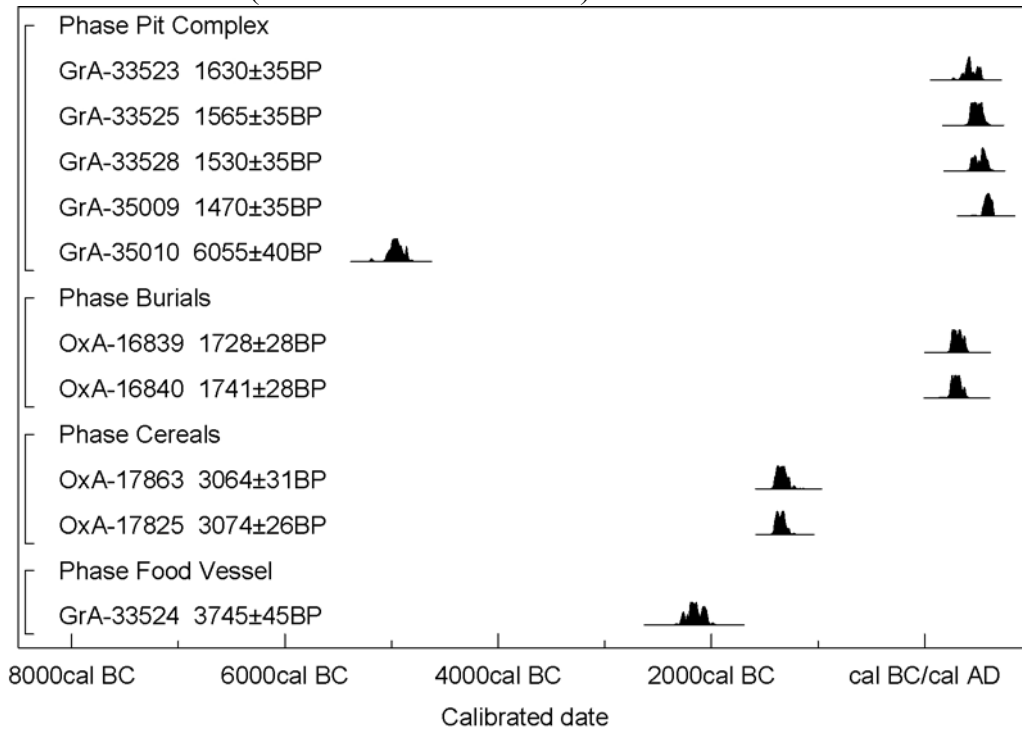
**Table 5.18:** Pollen and spores from context [482]

Context	482
<i>Volume processed (ml)</i>	1
Charcoal	abundant
Fungal spores	few
<i>Lycopodium</i> spores	79
<i>Trees</i>	
<i>Alnus</i> (Alder)	194
<i>Betula</i> (Birch)	2
Betulaceae (Birch family)	2
Pinaceae (Pine family)	1
<i>Quercus</i> (Oak)	4
<i>Shrubs</i>	
<i>Calluna vulgaris</i> (Heather)	3
<i>Corylus</i> (Hazel)	25
<i>Salix</i> (Willow)	2
<i>Herbs</i>	
Apiaceae (Carrot family)	6
<i>Artemisia</i> sp (Mugwort)	1
Asteraceae (Daisy family)	13
Asteraceae (Lactuceae) (Daisy family)	55
Brassicaceae (Cabbage family)	16
Caryophyllaceae (Pink family)	15
<i>Chenopodium</i> sp(p) (Goosefoot)	19
Cyperaceae (Sedges)	2
<i>Plantago lanceolata</i> (Ribwort Plantain)	5
Poaceae sp (Grasses)	146
cf Poaceae sp (Grasses)	222
<i>Ranunculus</i> -type (Buttercup-type)	1
Rosaceae (Rose family)	2
<i>Succisa pratensis</i> (Devil's Bit Scabious)	2
<i>Spores</i>	
<i>Polypodium vulgare</i> (Common Polypody)	6
<i>Pteridium aquilinum</i> (Bracken)	10
<i>Selaginella selaginoides</i> (Lesser Clubmoss)	1
<i>Sphagnum</i> (Moss)	3
Pteridophyte (monolete) undifferentiated (Ferns)	1
Indeterminate	39
<i>Total pollen and spores counted</i>	798
<i>Total concentration of pollen and spores (grains / ml)</i>	136367

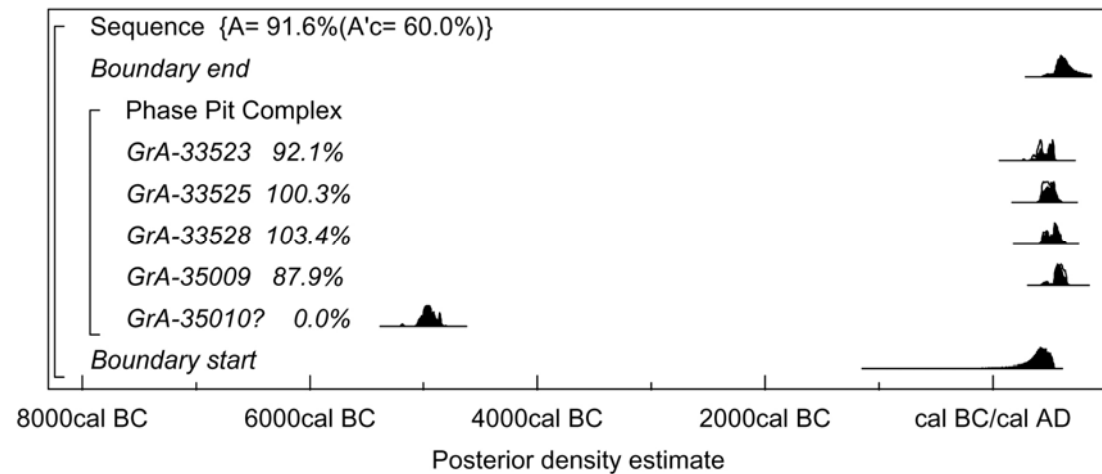
**Table 5.19:** Radiocarbon dates from Quarry Farm, Ingleby Barwick.

Lab ID	Sample ID	Material	Contextual Information	$\delta^{15}\text{N}$	$\delta^{13}\text{C}$	C:N	Radiocarbon Age (BP)	Calibrated Date (95% confidence)
GrA-33523	1 [763]	animal bone, dog, right calcaneum	articulated dog in pit [F777]	---	-20.9	---	1630 $\pm$ 35	cal AD 340-540
GrA-33524	2 [283]	carbonised residue, BA food vessel	pit with 3 BA vessels	---	-28.1	---	3745 $\pm$ 45	2290-2020 cal BC
GrA-33525	3 [270]	charcoal, <i>Betula</i> sp.	pit [F269] sealed by heat-affected cobbles	---	-26.3	---	1565 $\pm$ 35	cal AD 410-580
GrA-33528	4 [345]	charcoal, <i>Betula</i> sp.	pit [F346] sealed by heat-affected cobbles	---	-24.9	---	1530 $\pm$ 35	cal AD 420-610
GrA-35009	5 [257]	charcoal, <i>Betula</i> sp., twig	pit [F256] sealed by heat-affected cobbles	---	-25.4	---	1470 $\pm$ 35	cal AD 530-650
GrA-35010	6 [347]	charcoal, <i>Betula</i> sp., twig	pit [F348] sealed by heat-affected cobbles	---	-23.8	---	6055 $\pm$ 40	5060-4840 cal BC
OxA-16839	7 [F541] Burial 1	human bone, cranium fragment	partial burial in N-S aligned grave [F541]	12.8	-20.2	3.2	1728 $\pm$ 28	cal AD 230-400
OxA-16840	9 [F1436] Burial 4	human bone, cranium fragment	burial in N-S aligned grave cutting Roman corn dryer	12.3	-20.5	3.1	1741 $\pm$ 28	cal AD 230-390
OxA-17825	10 [415]	<i>Triticum dicoccum</i> (emmer wheat), single grain	fill of an isolated pit [F416]		-23.3		3074 $\pm$ 26	1420–1260 cal BC
OxA-17863	11 [415]	<i>Hordeum vulgare</i> var. <i>nudum</i> (naked barley), single grain	fill of an isolated pit [F416]		-24.5		3064 $\pm$ 31	1420–1250 cal BC

**Table 5.20:** Probability distributions of dates from Quarry Farm, Ingleby Barwick, Co Durham. Each distribution represents the relative probability that an event occurred at a particular time. These distributions are the result of simple radiocarbon calibration (Stuiver and Reimer 1993)



**Table 5.21:** Chronological model of 'Pit digging' activity at Quarry Farm, Ingleby Barwick, Co Durham. Figures in outline are the probability distributions of the simple calibrated dates, following Stuiver and Reimer (1993), while those in solid black are the *posterior density estimates* derived from the Bayesian modelling. The brackets down the left side and the OxCal keywords define the model exactly



Archaeological Services  
Durham University

**A Romano-British villa and settlement at  
Ingleby Barwick, Stockton-on-Tees**

**archaeological excavation**

**Part D: illustrations**

*on behalf of*  
**English Heritage**



Report 1709

November 2008

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Plate 5: Anglian fire pits looking east  
Plate 6: Gilt crossbow brooch (Small Find 91)  
Plate 7: Iron hoard (Small Find 112) prior to conservation  
Plate 8: Coopers croze (Small Find 112.6)  
Plate 9: Nave hoop (Small Find 112.19)  
Plate 10: Polychrome glass plate or dish (Small Find 41)