Mortaria production at Pentney, in the Lower Nar Valley, West Norfolk

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Abstract

*This paper presents the results of forty years of fieldwalking undertaken by Michael de Bootman on a small part of his father's farm at Pentney in the Lower Nar Valley, West Norfolk. This remarkable period of concentrated and continuous fieldwalking has produced a large assemblage of Roman mortaria fragments, including wasters. Although no excavation has been undertaken, geophysical survey in the fieldwalked area revealed what is almost certainly a kiln, possibly a pair, located centrally within a roadside trapezoidal enclosure. The large fragmentary pottery assemblage, recovered from the ploughed land above the kiln(s), forms a conservative group of primarily oxidised reeded rim mortaria thought to have been produced between the late third and fourth centuries AD. The pottery forms are very similar to vessels produced in the Nene Valley (*c. *55km to the west across the Fen basin) so this report not only provides evidence for the local production of mortaria in West Norfolk but also raises questions about the wider interconnectedness of pottery manufacture at this time.*

Keywords: Norfolk; Lower Nar Valley; late Roman period; field survey; pottery production; mortaria; distribution.

1. Introduction

The aim of this paper is to focus on the publication of mortaria production at Pentney in West Norfolk (HER 15170; TF 7273 1283), while also demonstrating that this specialist pottery-making activity did not take place in isolation. Pentney is one of seven known Roman pottery production sites in the Lower Nar Valley, which together formed a ceramic industry that dominated the supply of coarse wares and mortaria in West Norfolk during the mid-to-late Roman era (Fig. 1). Consequently, not only the mortaria kiln(s), but this whole industry is of great importance to the study of Roman pottery both regionally and nationally (Note 1).

2. Kiln Sites in the Nar Valley

In addition to Pentney six other contemporary Roman pottery production sites have been located (Fig. 2), although it should be noted that Pentney is, so far, the only site known to have been making mortaria. The six sites in question comprise:

- **Tottenhill.** The earliest recorded discovery of a Roman pottery kiln in the Nar Valley was in 1937 at Tottenhill during aggregate extraction (HER 2268; Clarke 1939, 94, 102). In addition, finds of fired clay, kiln bars and unbaked pottery in the immediate vicinity were recorded in 1908 and 1940, which suggests other kilns had been destroyed without record.
- **Shouldham.** In the early 1970s two pottery kilns were recorded by archaeological excavation; in addition surface concentrations of production waste and kiln material have been noted (HER 4282; Smallwood 1971, 9-10; 1999, 11-6).
- **Blackborough End.** During building works in 1989 a single kiln was excavated at Blackborough End (HER 3391; Gurney 1990). Close-by, in 1980, Roman pottery, burnt daub and iron slag had been noted during construction of a house (HER 17753).
- **Narborough and Marham.** In 1989 the lead author recorded kiln bars and over-fired pottery at Narborough (HER 3908). This lies close to another site in Marham (HER 18255), and the two may represent parts of one complex. A recent geophysical survey on the latter has also confirmed the presence of magnetic anomalies indicative of additional kilns.
- **East Winch.** Four kilns (Lally *et al.* 2018, 24-30) and their associated pottery (Peachey 2018) have recently been excavated as a consequence of aggregate extraction (HER 37413).
- **Watlington.** Eight pottery kilns have recently been excavated at Watlington (HER 39457 and 39458). Although some of this material has been assessed by both Alice Lyons and Andrew Peachey the site remains unpublished.

3. Roman Activity at Pentney

As a child in the late 1970s the lead author found Roman pottery sherds on the surface of his father's arable fields at Pentney (NHER 15170; de Bootman 1983; 1984), which as early as 1981 the late Tony Gregory noted in the Norfolk Heritage and Environment Record (NHER) as 'likely to be associated with production'. The lead author has maintained and developed his interest over a period of 40 years and as a result Pentney has benefitted from levels of fieldwalking, field observations, limited

excavation and geophysical investigations not seen on any of the other Nar Valley production sites.

Of five coarse ware kilns excavated at Pentney in the 1980s two were comparatively well-preserved with sunken combustion chambers, whilst the other three were built only slightly below the ground surface and had been severely damaged by ploughing. These kilns produced a standard range of utilitarian jars (decorated with distinctive rusticated and combed motifs), storage vessels, beakers, bowls and dishes, in a distinctive dark grey, gritty coarse ware fabric. In addition, the large collection of pottery gathered via field walking includes the same spectrum of reduced ware, comprising utilitarian vessels, but with an additional range of more unusual specialist wares such as strainers, cheese-presses, tripod bowls, face pots, 'baby feeders', lug-handled forms, indented-beakers, flagons and bottles, together with white-slipped wares, which so far are not known from other Lower Nar Valley production sites (Note 2).

The location of Pentney is also worthy of note, as while all the other known coarse ware pottery production sites lay well away from the current and old courses of the River Nar, Pentney sits on its northern bank where it disgorges from the 'upland' into the 'fen basin' of the Lower Nar Valley. Two miles to the east, and again on its banks, is the large Roman site at Narford which has long been assumed to be a market centre (Gurney 2005). Indeed, a comprehensive geophysical survey conducted between 2011 and 2014, undertaken by the lead author, confirmed Narford as a sizeable small town. This may suggest the potters who were making mortaria and other specialist wares at Pentney had close links with Narford (see discussion). Industrial activity at Pentney, however, did not only include pottery production but also iron smelting, exploiting the rich local bog ore deposits. Certainly, surface evidence and a recent fluxgate gradiometer survey (detailed below, Section 4) indicate both industries were intensive and undertaken on a commercial scale.

4. Geophysical Survey

Between 2016 and 2017 a fluxgate gradiometer survey was undertaken by the lead author as part of his ongoing geophysical research programme in West Norfolk. The survey covered an area of 30 hectares at Pentney, and while fuller interpretation and

dissemination of this survey will be published separately a few interim observations are included here.

The extent of Roman period activity covers *c.*18 hectares, straddling a newly discovered major east-to-west Roman road which broadly runs parallel to the River Nar and heads towards the Roman small town at Narford. Most of the site is sandwiched between this road and the old course of the River Nar.

Significantly, the recent geophysical survey (Figs 3 and 4) has provided evidence that in addition to the five excavated kilns, 40 more 'kiln-like' features are present on the site. It should be noted, however, that some of these magnetic abnormalities may be pits filled with industrial waste, ovens or even corn-dryers. Nonetheless, the full tally of kilns was probably much higher when those likely to have been built close to the surface, and which have thus not survived, are also considered.

5. Mortaria Production

5.1 Introduction

It is in this context, of Pentney being a large ceramic production centre, that publication of its products, particularly the mortaria, becomes especially important to regional and national pottery studies (Hartley and Tomber 2006, 82; Swan 1984, 121). To this end the geophysical investigations of the area of the kilns and analysis of a sample of its products are characterised here.

5.2 The Kilns

In 1983-4 the lead author noted a concentration of mortarium sherds was discretely located in a 20m x 20m area. Twenty-five years later in 2008, a small-scale fluxgate gradiometer survey was undertaken to locate the presumed mortarium kiln(s) the results of which clearly show a kiln (or kilns) located within an enclosure.

The ditched enclosure revealed by the survey is trapezoidal and encompasses an area of *c*. 165m², measuring 5.40m wide at the west end and 13.20m at the east, with the north and southern boundaries being between 19m and 21m in length. An entrance lay in the north-east corner. In the centre a magnetically enhanced anomaly of *c*. 31m²

shows the presence of at least one, possibly a pair, of kilns (Fig. 3). Two kilns seem plausible as it would permit rotation between firings. What is apparent is that mortarium production was carried out separately from areas engaged in the production of other coarse wares. The 2016-7 fluxgate gradiometer survey, which encompassed the area covered in 2008, showed that in the intervening period the enclosure and its immediately surrounding area had suffered significant damage as a consequence of a slight increase in ploughing depth (Fig. 3).

5.3 The Pottery

5.3.1 The pottery collection and methodology

A total of 659 sherds from mortaria, weighing 17.432kg, collected from the field surface, were analysed as part of this project. This total includes the majority of the sherds of mortaria retrieved but did not include 415 mainly smaller body and basal sherds donated to King's Lynn Museum in 1993 (KLM:1993.186). The Roman pottery was analysed following the guidelines of the Study Group for Roman Pottery (Barclay *et al*. 2016). The total assemblage (i.e. the 659 sherds) was studied, and a full catalogue was prepared (in archive). Sherds were examined using a hand lens (x10 magnification) and were defined based on inclusion types present. Vessel forms were recorded, and vessel types selected for illustration. Sherds were counted and weighed to the nearest whole gram. In addition, three sherds were sent to Dr Patrick Quinn for petrographic analysis, the results of which are described in the Appendix.

5.3.2 The Pentney mortaria fabrics

Oxidised ware

Visual examination shows that typical examples occur in a sandy fabric, with sparse chalk (or limestone) and fine flint inclusions, externally oxidised to a burnt orange colour (commonly with a grey core), together with a hard, irregular fracture and rough feel. The vessels were consistently fired to a lighter external colour rather than using a slip; indeed, only one example of a white slipped mortarium was recorded in the entire assemblage.

Detailed work on Pentney mortarium fabrics includes Kay Hartley's descriptions of the central Norfolk Spong Hill assemblage (Hartley 1995, 97, M7-M9). While

Tomber and Dore (1998, 171) carried out the first thin-section analysis on Pentney mortaria for the National Roman Fabric Reference Collection. In turn new petrographic analysis was also commissioned for this report (see Appendix). Combined, these descriptions provide a remarkably consistent characterisation of the fabric.

Reduced ware

Only ten sherds of a similar but reduced fabric have been found, including three reeded rim sherds and one spout (Fig. 5 P4) suggesting that there was limited deliberate production of a grey ware fabric. If so Pentney could be the source of the grey ware mortarium component of the assemblage from Caister-on-Sea (type EA-A), although this was discounted at the time of publication as no Pentney grey ware sherds were known (Darling and Gurney 1993, 193-4).

Trituration grits

Both the oxidised and reduced mortaria are lined with iron slag trituration grits varying in size and density, and very occasional quartz and flint pieces are also seen. This is an example of one industry (pottery production) benefitting from the waste product of another (iron working).

5.3.3 Forms

Mortaria

Mortaria were designed as specialised mixing bowls and in Britain are primarily diagnostic of the Roman era (Tyers 1996, 117-35), although their origins and uses are known to be complex (Cramp *et al.* 2011; Symonds 2012). Although represented by fragmentary remains the mortaria produced at Pentney could be identified as sixteen individual types which are described and illustrated below. Only one recorded sherd illustrates a complete vessel profile (Fig. 5 P1).

Production is typified by vessels of a hammer-head reeded rim design, of which types P1 and P10 are the most common examples (Table 1). The bowls are typically 280mm in diameter. A small number of bead and flanged (but not reeded) examples were also recorded. Only fourteen spouts were found, and they occur in seven rim types - all bar one was formed by a simple thumb pull. This sole exception is a

reduced ware vessel type P4 (Fig. 5) where the bead is pulled outwards to form the sides of the spout with thumb impressed terminals.

[Insert Table 1 about here]

The Pentney mortaria were never stamped by their makers and are stylistically very similar to those produced in the Lower Nene Valley (Hartley and Perrin 1999, 129-32). Although no scientific dating has been undertaken, examples from other sites have consistently been recovered from contexts dated to the mid/late third to fourth century AD (Hartley 1995).

Flagons and a bowl

A small number of large reeded rim oxidised flagons (Fig. 8 F1) may be a secondary product of the kiln. Mortaria and flagons have previously been recorded as being manufactured together, presumably because they were both oxidised and were specialist vessels which needed a skilled potter to produce (Lyons 2003, 50). A bowl may also have been produced on this part of the site (Fig. 8 B1).

Illustrated mortarium type series (Figs 5 - 8)

P1: Hammer headed with a reeded rim with three evenly spaced grooves. Rounded bead and distal end, with a distinctive curve under the rim giving it an upwards trajectory. Rim diameter ranges between 140-300mm (280mm most common).

P2: Hammer headed with a reeded rim which has three grooves and a sub-square distal end. Rim diameter ranges between 150-280mm (280mm most common).

P3: Hammer headed with a reeded rim which has three grooves and a square distal end. Rim diameter 220mm (one example only).

P4: Hammer headed with a reeded rim which has three grooves and a square distal end. Rim diameter 280mm (one example only).

P5: Hammer headed with a reeded rim which has two grooves with a rounded bead and distal end. Rim diameter 220-260mm (two examples only).

P6: Hammer headed with a reeded rim which has two evenly spaced grooves with a rounded bead and distal end. Rim diameter 220-300mm (280mm most common).

P7: Hammer headed with a reeded rim which has two grooves close to the bead. Rim diameter 160-300mm (280mm most common).

P8: Hammer headed with a reeded rim which has two grooves, one at the bead and one at the distal end. Rim diameter 260-280mm (260mm most common).

P9: Hammer headed with a reeded rim which has three grooves, rounded under scored bead with a rounded flange, widening towards the distal end. 240-320mm rim diameter (280mm most common).

P10: Hammer headed with a reeded rim which has three grooves, rounded under scored bead, with an underscored distal end. Rim diameter 140-320mm (280mm most common).

P11. Rounded bead with a plain, short, thick flange. Rim diameter 300mm (one example only).

P12. Rounded bead with a plain, slightly curved, flange. Rim diameter 220-300mm (280mm most common).

P13. Wall-sided. Rim diameter 300mm (one example only).

P14. Hammer headed with a reeded rim which has four grooves, rounded bead and distal end. Rim diameter 180-300mm (280mm most common).

P15. Hammer headed with a reeded rim which has three grooves, curved flange. Rim diameter 260-280mm (two examples only).

P16. Hammer headed with a reeded rim which has three grooves and a triangular flange. Rim diameter 260-280mm (280mm most common).

Illustrated other forms

F1. Cupped rim [Better as 'cup-mouthed' perhaps as otherwise 'rim' is used here twice in the description] flagon with a large reeded rim. Possibly a minor product of the kiln.

B1. Small bowl with out-curving everted rim, decorated with a single fine groove in the rim. Possibly a minor product of the kiln.

7. Discussion

The research presented within this paper has demonstrated that Pentney was an important West Norfolk industrial centre with both pottery (coarse wares and mortaria) and iron being produced in the mid-to-late Roman period. This successful production strategy, combining ceramic and ferrous working, was likewise seen locally at Snettisham (Lyons 2004, 58), East Winch and Ashwicken (Lally *et al*. 2018, 80, fig. 37) and also regionally within the Nene Valley (Fincham 2004, 102-28).

Other examples from further afield are seen around Holme-on-Spalding-Moor, East Yorkshire (Halkon and Millett 1999) and at Otby Moor north of Market Rasen in Lincolnshire (Jones 1988, 26-7, fig. 20; see Swan 1984 Kiln Gazetteer Online: Claxby and Walesby).

Within this busy industrial community the production of mortaria was a specialist activity, with the kilns located within a separate enclosure. Mortaria, although a relatively common household utensil, were not as ubiquitous (or as easy to replace) as coarse wares. Mortaria were more difficult to make; more resources and space would have been needed and the end product would have therefore been of more significant value.

The market for Pentney ceramic products was strong in the local West Norfolk economy with a notable coarse ware collection from Hockwold cum Wilton (Gurney 1986, 83), with coarse wares and mortaria found at Spong Hill (Hartley 1995), and mortaria found at Flitcham (HER 3481), Grimston (HER 3579), Gayton Thorpe (HER 3743), Narford (HER 3907) and Narborough (HER 3907). Pentney products were almost certainly in use at the Roman Saxon Shore fort of Brancaster, although the coarse wares were thought to originate from Shouldham at the time of publication (Andrews 1985, 89 and 95); moreover, Pentney mortaria may have been mis-interpreted as originating from the Nene Valley *in lieu* of a viable local source (Hartley 1985, 100, M13). It is also known that small quantities of Nar Valley coarse wares travelled up the eastern sea-board route and have been recorded on Hadrian's Wall (Paul Bidwell pers. comm.) and also on the Antonine Wall, as at Greta Bridge (Casey and Hoffman 1998) and Camelon (Vivien Swan pers. comm.) respectively. Increasing awareness of the industry, combined with further analysis, may reveal that larger quantities of Nar Valley material, including mortaria, were traded along this route. Nar Valley products are, however, rare at the civitas capital of *Venta Icenorum* (Lyons in prep.) which suggests its market was focussed in western Norfolk, the Fen-edge and the eastern sea-board, towards the military border walls.

Enabling this distribution, Pentney was ideally located on the banks of the River Nar and beside a (newly discovered) road to allow exportation of its goods, *via* the settlement at Narford. Indeed, Pentney should perhaps be regarded as the industrial

suburb/satellite of the small town at Narford. This close relationship between the manufacturing centre at Pentney and settlement at Narford provides new evidence for how the rural economy of Roman Norfolk functioned at this time. [This deduction concerns me as it is basically unproven so I feel you need to have some qualification or 'possiblies' in here. This interpretation (interpretive model if you like) fits a general assumption of the role of 'Small Towns' but that is not certainly their role. Can you make a stronger case here or just say it is conceivable?]

In addition, the relationship between the Nar and Nene Valley manufacturing centres can be addressed. The near identical style of the Nar and Nene Valley mortaria suggest that the two industries were linked, with the Pentney mortarium kiln(s) established as a satellite of this larger industry (Darling and Gurney 1993, 193; Hartley 1995, 98). The economic incentive to establish a satellite industry at this time may have been provided by the construction of the Brancaster Saxon Shore fort, only 30km to the north of Pentney, as it is thought this was a state-run collection and transhipment centre (Hinchliffe with Sparey-Green 1985, 198; Cotterill 1993, 237). If this is the case the well-connected location of Pentney combined with its natural resources were enough to offer a potential migrant potter, or satellite workshop, the market (with possible military contracts) and infrastructure to successfully produce and sell their wares.

Notes

Note 1. A monograph by de Bootman and Lyons, discussing the wider Nar Valley industry, is in the early stages of preparation.

Note 2. It is beyond the limit of this paper to describe these vessels, but they will be fully published in the wider monograph (de Bootman and Lyons in prep.).

Appendix: Petrographic analysis of Roman mortaria from Pentney
Patrick Sean Quinn

Background, sample materials and aims of analysis: Thin section petrographic analysis has been undertaken on three sherds of Roman pottery recovered from a field with kiln evidence in Pentney with the purpose of characterising their raw materials and production technology, and relating them to previously published fabrics.

Methodology: Small pieces of the three ceramic sherds were impregnated with epoxy resin and prepared as standard 30 μm petrographic thin sections at the Institute of Archaeology, University College London. The thin sections were characterized petrographically under the polarizing light microscope and interpreted in terms of their constituent raw materials and manufacturing technology. The fabric of the samples was compared to the system proposed by Tomber and Dore (1998) as well as petrographic studies of contemporaneous ceramics from the same general area (Vince 2007; Quinn 2012). Photomicrographs of the three thin sectioned samples are presented in Figures 9-11.

Petrographic composition and technology: All three samples are characterised in thin section by a similar petrographic fabric composed of rounded sand-sized quartzose inclusions and rounded opaques in a generally calcareous matrix with microfossils and textural features (Figs 9-11). The sand-sized mineral and rock inclusions range up to 2mm in size and have a generally equant, well-rounded shape. They are composed mainly of quartz and polycrystalline quartz but also contain other compositions including chert (Fig. 10 F), which can be iron stained, quartz arenite (sample Pentney 3 - Fig. 11 A), weathered feldspar (sample Pentney 1) and foliated polycrystalline quartz. This material, which is more abundant in sample Pentney 2, appears to have been added as temper, given that it differs from the calcareous clay and fossils around it. The source of the temper could have been a loose, moderately well-sorted sand deposit such as alluvium with clasts from a range of rock types. There is no evidence of the crushing of consolidated sand or sandy material such as arenaceous rock. The rounded quartzose sand has a somewhat uneven distribution within sample Pentney 2, perhaps further suggesting that it was added as temper.

Three other main types of inclusions occur in the samples. These are fossiliferous limestone, microfossils and spherical opaque, ferruginous inclusions. The latter occur throughout the samples and have a more or less similar size and shape to the aforementioned quartzose sand (Fig. 9 A and E; Fig. 10 D). This might suggest that they were also part of the same sand temper. Indeed, a large opaque inclusion enclosing a quartz clast is present in sample Pentney 1. The ferruginous inclusions are otherwise featureless and completely opaque. They are surrounded by thin ring voids in many cases. Some less well-defined seemingly more plastic opaque features occur in the samples, though it is not clear how these are related to the spherical bodies.

Large (up to 3 mm) limestone inclusions occur rarely in all samples (Fig. 10 B). These are micritic and can contain macrofossil shell and foraminifera microfossils. In samples Pentney 1 and 3 they exhibit iron staining. One such large piece in sample Pentney 2 contains sparse angular quartz silt and sand clasts. Foraminifera tests occur as small (c. 0.125 mm) inclusions within all samples (Fig. 9 C; Fig. 10 B, D-F) and clearly derive from the same limestone material as the larger micritic inclusions. They are generally well-preserved but contain calcite infillings in their spherical chambers. The clay matrix is generally calcareous, though it varies in terms of the proportion of fine calcite both between and within samples. Sample Pentney 2 contains numerous conspicuous streaks and bodies of light coloured highly calcareous clay within the otherwise less calcareous darker matrix (Fig. 10 A and C). These seem to represent the remnants of intentional clay mixing of calcite-rich marl with non-calcareous clay that may not be present in the other samples due to better homogenization. The calcareous material represented in the plastic features may have derived from the same micritic material that is present as aplastic inclusions in the samples. The presence of foraminifera microfossils throughout the samples may also be accounted for in this way given that specimens are present in the plastic features in sample Pentney 2 (Fig. 10 C). The ceramics may have been partially redistributed in the samples, particularly sample Pentney 1, which has dog tooth growth within voids (Fig. 9 D). The samples have relatively low porosity made up of meso- and macro-elongate voids and occasional vughs. The samples are optically active suggesting a firing temperature of <850°C. The good preservation of calcite, particularly the foraminifera, might indicate a lower temperature still. Firing was oxidising, though the core of samples Pentney 1 and 2 were not well penetrated by oxygen.

Raw Materials and Links with Other Material: The fabric of the three samples from Pentney appears to be closely related to Nar Valley Oxidised Ware (NAR OX) as described in Tomber and Dore (1998, 171). These authors note that NAR OX has a "poorly mixed, calcareous clay abundant limestone, sometimes fossiliferous, together with foraminifera and shell ... flint and quartz, with fewer opaques, sandstone, quartzite and polycrystalline quartz", all of which are characteristics of the three sherds analysed in this report.

The geology of the Nar Valley is characterised by sedimentary rock of Lower and Upper Cretaceous, including the Gault Clay and the Lower Chalk, covered by Quaternary river terraces, peat and glacial deposits. The latter might be the source of

the sand that appears to have been added as temper to the ceramics. The presence of flint seems to agree with the use of local superficial sandy material containing flint reworked from the chalk. Whether the alluvium or glacial material contains iron-rich inclusions such as those which occur in the ceramics is not known. This could have derived from the anoxic, iron-rich peat deposits. The marine sediments of the Gault and the Lower Chalk are possible candidates for the calcareous fossiliferous material in the ceramics. Though the Gault contains micro- and macrofossils, it is not normally as calcareous as the calcite-rich micritic material seen the samples. This could have originated from the Chalk.

Micropalaeontological analysis of the ceramics (Quinn and Day 2007) could provide biostratigraphic data with which to tie the source of the limestone material down to a more specific bedrock deposit. Other petrographic studies on NAR OX seem to be rare. Some interesting parallels exist in a study of Anglo-Saxon and Medieval Pottery from nearby Cambridgeshire by Vince (2007). One fabric contained rounded quartz and opaque inclusions as well as sandstone and chert inclusions. This sandy material bears similarities to that which appears to have been added to the Pentney ceramics. Vince (2007, 10) writes that "The rounded quartz and opaques sand is reminiscent of fabrics from the Cambridgeshire/Norfolk border (e.g. Pott Row Grimston and Blackborough End) and a lower Cretaceous origin is fairly certain".

Calcareous clay and micritic limestone inclusions with foraminifera has been reported from samples of Roman kiln superstructure analysed by Quinn (2012) in Flixton, Suffolk. In the absence of primary deposits of chalk, the source of this was interpreted as the chalky till of the Lowestoft Formation Diamicton. This could be an alternative source of the calcareous material used in the Pentney samples.

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[Add website link for the Kiln Gazetteer – currently not accessible!]

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Vessel Form	Type	Sherd Count	Weight(g)	Weight (%)
Mortaria	P1	81	2697	15.47
	P2	4	139	0.80
	P3	1	39	0.22
	P4	1	27	0.15
	P5	2	48	0.28
	P6	29	741	4.25
	P7	25	1024	5.87
	P8	11	396	2.27
	P9	11	688	3.95
	P10	47	1961	11.25
	P11	1	80	0.46
	P12	14	578	3.32
	P13	1	90	0.52
	P14	5	166	0.95
	P15	5	160	0.92
	P16	8	371	2.13
	Body and base sherds	403	8160	46.81
Flagon	F1	7	20	0.11
Bowl	B1	3	47	0.27
Totals		**659**	**17432**	**100.00**

Table 1. The quantified pottery assemblage, listed by vessel form and type

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Captions for Figures

Fig 1. Location of the Nar Valley in the county of Norfolk.

Fig 2: Location of [Roman? Yes/No] sites around the Lower Nar Valley and the modern day course of the River Nar. [Please supply as a list the site names for the sites identified as 1-8. Presumably the blue expanse was open water in Roman times – can you supply the appropriate phrase for this caption please. Apologies if I have missed this from an earlier version from you; I could not see anything of this sort]

Fig 3: Fluxgate gradiometer survey of the mortaria kiln/s and surrounding area.

Fig 4: Interpretation based on the 2008 Fluxgate gradiometer survey.

Fig 5: Pentney mortaria rim forms.

Fig 6: Pentney mortaria rim forms.

Fig 7: Pentney mortaria rim forms.

Fig 8: Pentney mortaria rim forms and related vessels.

Fig 9: Thin section photomicrographs of Roman ceramics analysed from Pentney, Norfolk, in this report: Samples 1 and 2. Image width = 2.9 mm, except C and D = 1.45 mm. PPL = plane polarised light, XP = crossed polars.

Fig 10: Thin section photomicrographs of Roman ceramics analysed from Pentney, Norfolk, in this report: Samples 2 and 3. Image width = 2.9 mm, except C = 1.45 mm. PPL = plane polarised light, XP = crossed polars.

Fig 11: Thin section photomicrographs of Roman ceramics analysed from Pentney, Norfolk, in this report: Sample 3.. Image width = 2.9 mm. PPL = plane polarised light, XP = crossed polars.

[It may be that figs 9 - 11 are combined]