The Pottery from Lease Rigg, North Yorkshire

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Introduction

The pottery from the 1976-80 excavations was examined by the authors and a full catalogue, listing the material by context, sherd count, number of vessels and weight was produced and is available in the site archive. Details of decoration, condition and use are also given.

The pottery is mainly of Roman date and mostly dates to the late 1st century with a smaller group of early 2nd century date. A small quantity of sherds may pre-date the foundation of the fort and a handful of later Roman and medieval sherds were also present.

The Pottery

Condition

All the pottery was heavily abraded, so that it was not possible to identify burnishing or surface treatment. Much of it was also very soft, sometimes with a harder surface concretion, formed partly from adhering soil. Furthermore it was mainly in a very friable condition, with a network of cracks visible throughout the sherd. In some cases these had caused the sherd to shatter at some stage after excavation and the bags now contain numerous fragments. This has severely limited our ability to identify the fabric, unless the inclusions are actually standing proud of the sherd surface since creating a fresh break was quite likely to lead to the complete disintegration of the sherd. Despite these conditions, some large fragments survive and the mean weights of most of the wares are comparable with those found on sites in York, where burial conditions were much less harsh. This indicates that below the topsoil and subsoil much of the pottery has received little mechanical weathering but that chemical weathering has affected the whole collection.

Iron Age to Roman Handmade Wares

Forty-six sherds of handmade coarseware of Iron Age to early Roman date were found. Examination at x20 magnification using a stereo-microscope suggests that they can be grouped into four different fabrics. The most common fabric contains angular voids which originally held sparry calcite (IACALC). The next most common contains large angular rock fragments of various types (IAERR). Two sherds contained rounded limestone fragments (IALIM). The remaining sherds contain an angular quartz sand, probably all derived from medium to coarse-grained sandstones (IASST).

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Calcite-Tempered Ware (IACALC)

There are slight variations in the fabric of these sherds. The most common fabric contains abundant sparry calcite voids up to 4.0mm across and has a fine-textured groundmass in which no inclusions can be seen. The next most common fabric is almost identical but contains rare quartz grains of two types: overgrown grains c.0.2-0.3mm across (probably derived from Upper Jurassic sandstones, Kent 1982, 68-75) and rounded, polished quartz grains, ranging from c.0.2mm to 1.0mm across, some coated with haematite derived from Lower Cretaceous Ferruginous sands or Red Chalk (Kent 1980, 82-91). In the third fabric, represented by a single example, these quartz inclusions are moderately abundant whilst in the fourth fabric, again represented by a single example; there are only sparse sparry calcite voids and sparse angular rock inclusions, up to 2.0mm across. This fourth fabric is the only one for which a source on the south side of the Vale of Pickering is not assured. The remaining fabrics are all represented in collections of prehistoric, Roman and Anglo-Saxon calcite-tempered wares from West Heslerton (Vince forthcoming) and numerous other sites (2004, CTW). Thin section analysis has established that the calcite is derived from veins cutting the chalk, and in unleached examples the country rock is sometimes seen adhering to the calcite. The calcite is more robust that the chalk and can be found as large nodules in the fields at the foot of the chalk scarp (D Powlesland pers comm).

Calcite-tempered ware was produced continuously from the Bronze Age to the early Anglo-Saxon period and in a combined petrological and chemical analysis no clear difference between Iron Age and late Roman samples was found (Vince forthcoming). Early Anglo-Saxon vessels from West Heslerton, however, tended to have the moderate quartzose sand found in Fabric 3.

All of the Lease Rigg sherds come from handmade jars. Two rim forms were present: a rounded, everted rim (of which DN5 is a particularly short example) and a flat-topped, rounded form (DN6 and DN12). The latter form is clearly contemporary with the occupation of the fort and the example from Trench I X (DN12) consists of several large unabraded sherds and was found in the fill of a gully running behind and parallel to the rampart. DN6 also comes from the fill of a Roman feature, a pit in Tr C III. However, several of the other sherds are small and abraded, and one is also coated with iron panning. These sherds could be of Iron Age or Roman date. The sherd of the fourth fabric, a rolled-out rounded rim (DN7) is a good candidate for an Iron Age date.

Limestone-tempered Ware (IALIM)

Two sherds contained abundant well-rounded voids and had a fine-textured groundmass with no visible inclusions. One contained rare polished, rounded quartz grains up to 0.3mm acoss. The fine-textured groundmass points to an Upper Jurassic (Ampthill or Kimmeridge) or Lower Cretaceous (Speeton) clay or to the use of a boulder clay derived from such clays. The

rounded voids could have contained chalk or a Jurassic limestone. Fabrics with a similar appearance are known from West Heslerton in the Vale of Pickering and were probably produced locally. Effectively, therefore, this fabric could be considered as a variant of the calcite-tempered ware. Like some of the calcite-tempered wares, the featureless body sherd was externally burnished.

Erratic-Tempered Ware (IAERR)

Nineteen sherds, representing no more than 11 vessels and weighing 209gm in total contained sparse to moderate fragments of rocks and minerals, between c.2.0mm and 4.0mm across. Three fabric groups were identified at x20 magnification.

The first (7 sherds from 6 vessels) contains angular fragments of grey to black basic igneous rocks. Most of these have a fine crystalline groundmass and one is vesicular. Minor inclusions consist of fine-grained white sandstone composed of loosely-cemented, overgrown quartz; red fine-grained sandstone; and a cream-coloured laminated mudstone. The groundmass varies in texture. Most have a fine, sandy groundmass, whilst others have few inclusions visible at x20 magnification and one has a variegated groundmass, indicating the presence of clays varying in iron content.

Vessels tempered with angular basic igneous rock are common in the later Bronze Age and Iron Age from the Tees Valley in the north to the Lindsey Marshes in the south. Whether they were produced locally exploiting the erratic rocks found in the local glacial till or were produced at one or more centres is not yet known and can only be determined by a programme of analysis using thin section and chemical analysis. It is likely that this ware continued to be produced for some time during and after the Roman conquest although at Melton, in the Humber estuary on the fringes of the distribution it seems that this ware fell out of use very quickly whilst other, limestone-tempered handmade wares, definitely continued in use into the early 2nd century. None of the Lease Rigg sherds has a fresh appearance and where more than one sherd is present in a content this is most likely due to disintegration after excavation. On balance it is mostly likely that these sherds pre-date the fort.

The next most common fabric, 4 sherds from 3 vessels, weighing 18gm in total, contains angular fragments of quartzite with hackly surfaces. These cannot be identified at x20 magnification but do not occur in association with either the basic igneous rock or with biotite granite (see below). One sherd, classed with this fabric, contains large subangular quartz grains up to 4.0mm across which are absent in the other examples and could be a very abraded piece of Dressel 20 amphora. The groundmass of these sherds is similar to that of the basic igneous rock-tempered pieces and includes another example with a variegated groundmass. One rim is present, from a small jar with a simple rounded everted rim (DR14).

Vessels tempered with what appears to be fire-cracked quartzite are found in the prehistoric period in midland and northern England and these sherds, with the possible exception of the putative Dressel 20 sherd, were probably in use before the construction of the fort.

The third fabric, consisting of 8 fragments from 2 vessels (probably originally just 2 sherds) and weighing 93gm in total, contains angular fragments of biotite granite ranging from c.0.5mm to 4.0mm across. One sherd also contains sparse fine-grained white sandstone fragments up to 4.0mm across. The groundmass in both vessels is variegated.

Vessels tempered with biotite granite fragments occur in the Iron Age, Roman period and early Anglo-Saxon period in northern England. The granite is probably Shap Granite from the Lake District, which was carried south-eastwards along what later became the Tees valley and southwards down the east coast and the Vale of York.

Despite the clear differences in inclusion types between these three fabric groups, it is uncertain whether they were actually made by different potters. The groundmass suggests that there may be two parent clays used: the first contains abundant angular to subangular quartz sand and the second contains sparse angular quartz and has a variegated texture, visible only where a substantial area of the fabric is oxidized. The variegated clay is very similar in colour range and texture to the Middle Jurassic clays which outcrop around the fringes and river valleys within the North Yorkshire Moors. In the medieval period these were exploited at Scarborough, various sites in the Hambleton Hills, Castle Howard and Ruswarp Bank. The sandier clay, however, is more similar to pottery made from lacustrine deposits, which exist in many of the larger river valleys surrounding the moors (the Tees valley, the Vale of York, the Vale of Pickering) and probably occur as smaller outcrops within the moors area as well as extensively further afield.

It is very likely that the inclusions in these three fabrics were deliberate temper, prepared by the potters rather than collected from a gravel deposit or present as clasts in the local boulder clay since samples of boulder clay collected from various points along the east coast always have a more varied suite of inclusions, both in rock type and in size and roundness. This cultural tradition, of crushing or fire-cracking selected rocks to use as pottery temper, seems to have started in the Bronze Age (Wardle 1991) and continued in the Iron Age (Freestone and Humphrey 1992;Freestone and Middleton 1991; 2004). However, study of vessels from Piercebridge, from 3rd century assemblages, suggests that in some parts of the north it continued well into the Roman period and then re-emerged as the main potting tradition in the early Anglo-Saxon period (Cooper & Vince forthcoming).

Sandstone-Sand-Tempered Ware (IASST)

Twp sherds of sandstone-sand tempered ware were recorded, weighing 38gm in total. The fabric contains abundant angular quartz grains, up to 2.0mm across, most of which show signs of overgrowth. The groundmass is black with no distinctive features.

The sherds both come from jars and one have a rounded, everted rim.

This sand, probably derived from Lower Carboniferous Millstone Grit, forms much of the fluvio-glacial sand in the Vale of York and is coarser in texture than the Jurassic calcareous grits of the North Yorkshire Moors, nor do deposits solely composed of this coarse quartz occur locally. These two sherds, therefore, were produced somewhere outside of the North York Moors.

Amphora

Fifty-six sherds of amphora were recovered, representing no more than 17 vessels (and perhaps as few as two!). Their total weight is 3.137Kg.

Most of the sherds come from a globular amphora of Dressel 20 form and standard Baetican fabric, produced in the Guadalquivir valley. They include one rim and two handle fragments, the remainder being body sherds.

A body sherd from an amphora in an off-white, calcareous fine-textured fabric, probably a Gauloise type, was also present.

Finewares by Barbara Precious

Oxidized wares

One hundred and eleven sherds of oxidized ware, representing no more than 67 vessels and weighing 1.183gm, were recorded. A sample of the sherds, including all featured sherds, was examined at x20 magnification and divided into three fabric groups. By far the most common, accounting for 95 sherds, no more than 60 vessels and 981gm in total, is usually oxidized throughout, even the thickest parts of the vessel, and contains abundant subangular quartz grains and sparse muscovite laths up to 0.2mm across. Many of the quartz grains are overgrown. The groundmass is reddish yellow, 7.5YR 6/6, soft and powdery.

Jars are the most common form (DN2, DN11 and DN16) followed by flagons (DN15 and DN18), a bowl, and a storage jar. The flagons include a large, two-handled vessel with a simple triangular rim (DN15), and a smaller, ring-necked vessel similar to Gillam 2 (DN18), both late 1st century forms. The jars include small vessels with simple everted rims (DN2 and DN11) and larger vessels with a flat-topped, template-cut rim (DN 16). The bases are either

plain or have foot rings and in both cases were finished by turning. These features are all typical of later 1st and early 2nd-century wares.

Fabric 2 probably consists of a single vessel, a ring-neck flagon whose rim is beaded, a form which typologically is dated to the Trajanic/early Hadrianic period. The fabric is similar in colour to Fabric 1 but the inclusions are coarser and more varied in character. Specifically, they include fragments of a fine-grained sandstone with a brown cement, rounded dark brown clay pellets, rounded quartz grains and overgrown grains. The vessel has a fine-textured groundmass which is dark grey in colour with an oxidized external margin. Traces of a white external slip are present.

Fabric 3 contains abundant fine angular fragments of basic igneous rock, ranging up to c.0.5mm across together with abundant angular quartz similar to that in Fabric 1. The groundmass is similar to Fabric 1. The only example recognised comes from a jar with a simple flat top (DN19).

Fabrics 1 and 2 are similar at x20 magnification to Eboracum ware, produced immediately outside the fortress at York from the late 1st to the early 3rd centuries. However, Fabric 1 appears to be finer in texture than EBOR ware and is probably the same fabric but with a different firing, to the main greyware fabric at Lease Rigg. Furthermore, the similarity between Fabric 1 and Fabric 3, whose erratic rock temper suggests a local source, makes a local origin for Fabric 1 more likely.

Samples of five Fabric 1 vessels (DR2, DR11, DR15, DR16 and DR18) and the Fabric 2 vessel (DR4) were examined in thin section (DR15 and 4) and using Inductively-Coupled Plasma Spectroscopy. The results (Vince 2007) indicate that there is little difference between the two oxidized fabrics in chemical composition although the Fabric 2 sample has a finer-textured groundmass, similar to that of one sample of greyware (DR10).

Black Burnished wares

Fifty-one sherds of black burnished wares were recorded, representing no more than 7 vessels and weighing 400gm. All of the sherds were examined at x20 magnification and all but one were identified as Dorset BB1 on the basis of the character of the rounded quartz sand, which includes milky grains absent from local sands and some polished grains.

Most of the sherds come from one or more jars similar to Gillam form 122 (DN13). There is no sign of burnishing on the jar rim and none of the body sherds show signs of lattice burnishing although one sherd from a horizontally burnished shoulder has a horizontal groove which might mark the top of the decorated zone (as in Gillam 126).

One of the sherds did not show any of the diagnostic features of BB1 fabric and may be from another source.

Greywares

Sixty-nine sherds of greyware were recorded, representing no more than 50 vessels and weighing in total 393gm. All of the rims and a proportion of the body sherds were examined at x20 magnification and all have similar fabrics.

The fabric contains abundant fine quartz up to 0.2mm across, most of which is overgrown with very clear crystal faces. Sparse rounded clay/iron grains up to 0.3mm across also occur. The groundmass is fine-textured with a micaceous sheen (i.e. muscovite or sericite within the clay fraction). In some examples there is an oxidized margin below the grey surfaces and this margin is light blue to off-white. Most, however, are uniformly fired grey.

Most of the sherds come from small or medium sized jars with rounded everted rims (DN3 and DN17) or in one case a shouldered jar with a rounded rim (DN10). A small beaker (DN8); a bowl (DN9) and a lid (not illustrated) with a wire-cut top complete the list of forms. The only decoration consists of three body sherds from rusticated jars, none large enough to see any pattern in the rustication. The form of these vessels is consistent with a late 1st century date.

A small number of the jars show signs of sooting.

The fabric suggests the use of a light-firing clay whilst the sand is consistent with the Jurassic calcareous grits. Both of these materials could have been obtained from the Esk valley. However, the fabric is also very similar in appearance to that produced in the Crambeck area in the late Roman period, which does not imply that the greyware was produced at Crambeck, but does indicate a wider potential source area, which can only be refined through further analysis.

Samples of six greyware vessels, including beaker DR8 and jars DR10 and DR17, were examined in thin section (2 samples, one not illustrated and the other DR1) and using Inductively-Coupled Plasma Spectroscopy (Vince 2007). The results indicate that one of the thin-sectioned samples (DR10) has a finer groundmass than the other but that the chemical composition of all six is similar and cannot be distinguished from the samples of the oxidized ware or mortaria of fabrics M4 and M5.

The Samian Ware by Barbara Precious (See Table 1, below)

The samian assemblage consists of 16 sherds weighdarlighing 158 grams (mean weight 9.9 gm) and is distributed throughout the fort area of the site, with a small concentration in context X I. The group is composed of *circa*14 individual vessels; but due high degree of abrasion it is not possible to give a precise figure. Indeed, the abrasion is so severe that all

the slip has been lost from the majority of the sherds - some of which are reduced to less that 1millimetre in section. Thus there are no fresh breaks by which to determine sherd joins. Fortunately, there is a sufficiently a high proportion of footring bases that can be measured for diameters, and all of these seem to be from different vessels. Although the abrasion is severe, it is possible to distinguish two different samian fabrics.

Table 1

context	cname	form	dec	nov	alter	nosh	weight
A I 21	SAMSG	18-18/31			Vvabr	1	7
B III 1	SAMSG				Vvabr	1	2
C I 1	SAMCG	18/31-31			Vvabr	1	20
C I 1	SAMSG				Vvabr	1	1
C II 1	SAMSG				Vvabr	1	1
X I 1	SAMSG	18?		1?	Vvabr	2	4
X I 1	SAMSG	18-18/31		1?	Vabr;Enc	2	22
X I 1	SAMSG	18-81/31			Vabr	1	14
Y II 1	SAMSG	D			Vvabr	1	3
Z VI	SAMSG	18			Vabr;Enc	1	60
Z IX 2	SAMSG	18-18/31			Vvabr;Enc	1	8
Z X 1	SAMSG	CU11?	BA		Vabr	1	8
UNST	SAMSG	18-18/31			Vvabr	1	5
UNST	SAMSG	37?			Vabr	1	3
	TOTAL					16	158

South Gaulish samian (SAMSG)

There are 15 sherds weighing 138 grams of samian from the South Gaulish kilns of La Graufesenque, and almost all have the typical white flecked, pinkish-red fabric of these kilns. Three of these sherds are too small and abraded to be assigned a form type. Almost all of the remainder are dish forms, the exceptions being a sherd of mould-decorated ware and a curved flange fragment with the scant remains of barbotine decoration.

The decorated sherd is unstratified from outside the fort area and to the southwest of the site. Although very abraded, the remains of two probable arms, possibly two figures, can be determined delineated by a bead row border. The sherd is curved and is likely to be from a Dr 37 bowl, thus indicating a Flavian date for this vessel.

A curved fragment with a vestige of barbotine decoration came from **Z X 1**. There is no slip, but the fabric is typical of the South Gaulish kilns. As the underside of the sherd has flaked off it is not possible to determine the exact form of this vessel, which could be either the

flange of a Curle 11 or the rim of a Dr. 36. The curvature of the sherd appears to favour the former vessel type, but both forms are generally present from the Flavian period.

A more conclusive Flavian date for occupation in the fort area is provided by an almost complete profile of a Dr 18 dish (**Z VI**). This sherd is the largest in the samian assemblage and, although very abraded and encrusted, the majority of the slip survives. The rim is broken and the lack of an external offset at the wall/floor junction or an internal ridge indicates a Flavian rather than mid- first century example (Webster 1996, 32).

Several other dishes with flat, footring bases occur within this South Gaulish assemblage (c. 6 vessels). As they are so fragmentary and abraded it is not possible to give a definite identification, therefore these sherds are broadly described as type Dr18 or 18/31. The latter are generally dated to the late Flavian into the early Trajanic period. However the flat bases are more indicative of form Dr18.

As would be expected of a military assemblage of this date, dishes are the most common form, but there is a distinct lack of cups that would normally accompany these vessels.

Central Gaulish samian (SAMCG)

A single sherd of Central Gaulish samian (**C I 1**) in a brown, micaceous fabric with a mixed, granular matrix stands out from the redder South Gaulish fabrics. This sherd, weighing 20 grams, is extremely abraded and no slip survives. It consists of a relatively flat, footring base that is likely to be a dish form, possibly that of Dr 18/31, but not certainly. As this fabric is not imported until c. AD 120, a broad Hadrianic-Antonine date is suggested for this vessel.

The Fine Wares by Barbara Precious (See Table 1, below)

The finewares consists of 27 sherds weighing 34 grams (mean 1.3 gms); a total of five vessels including a smashed beaker from **XI 1** (22 sherds, 15 grams). Almost all of the assemblage came from the fort area. In contrast to the samian (above), there is little abrasion of the finewares.

Although this group is comprised solely of colour-coated wares (CC), it is not an homogenous assemblage. For example, several of the sheds are decorated with clay roughcasting, but the fabrics differ. Apart from a lid with a bead and flanged lip (Drawing 21), the group is composed entirely of beaker forms.

Table 2

context	cname	form	dec	nov	alter	refid	nosh	weight
V I 1	CC	LBF				D21	1	11
X I 1	CC	BKCOR	RCC	1	Abr		22	15
Z X 1	CC	BKRC	RCC				1	2

Z XI 1	CC	BK				1	3
Z XII 22	CC	BKRC	RCC			1	2
Z Z 1	CC?	BK			Vburnt	1	2
	TOTAL					27	34

Colour-coated roughcast ware (CC, RCC)

The earliest vessel type, a cornice-rimmed beaker with clay roughcast decoration, came from **XI 1**, which is also the location of three samian dishes of at least Flavian date. The beaker is fragmented and abraded (22 sherds, 15 grams), but it is possible to discern the rim and a scored, horizontal line that delineates the shoulder from the zone of roughcasting. The shoulder is relatively high and the remains of the lower body are consistent with a high-shouldered, ovoid rather than a bag-shaped profile. Vessels of this type are generally dated to the Flavian or Flavian-Trajanic period.

The fabric of both the body and roughcasting is buff coloured and fairly soft with sparse white mica and moderate silt-sized quartz (0.1mm, occasionally 0.2 mm). A dark brown to dark grey colour-coat covers the vessel. It is not possible to source the ware-type, although it is reminiscent of some early Colchester fabrics.

Two further sherds with this type of decoration came from **Z X 1**, and **Z XII 22** respectively. Both are of beaker forms but the sherds are too small and undiagnostic to suggest a particular vessel type. The body sherd and roughcast decoration from **Z X 1** is in a fine, white fabric with no obvious mica and covered with a mid-brown colour-coat. It is a fairly straight-sided sherd, and not obviously from a bag-shaped vessel. As the fragment is so small (3 gms) there is insufficient material to determine a precise source, but the white fabric lacking mica suggests either a source from the Rhineland (KOLN) or possibly the Nene Valley (NVCC). Clay roughcast decoration is present on Romano-British sites from the Flavian period but continues in use to the Antonine. This sherd occurs with South Gaulish samian form Curle 11 indicating that this context is at least Flavian in date. A Hadrianic to early Antonine date would be acceptable for a Cologne product whereas an Antonine date is more likely for a Nene Valley example.

There is only a trace of roughcasting on the footring moulded base of a beaker from **Z XII 22**. The grey/buff coloured fabric and roughcasting is fine and silty with no obvious mica, and is coated with a dark brown colour-coat. As the sherd weighs only 1 gram, the source is indeterminate, but there is a resemblance to early Nene Valley fabrics. A broad later 1st to 2nd century date is suggested for this sherd.

Colour-coated ware

A near profile of a bead and flanged rimmed lid (1 sherd, 11 gms) is black, colour-coated on the exterior but not on the interior (Drawing 21). The form is unusual and probably dates from at least the mid-2nd to the 3rd century. It was found outside of the main fort area in a causeway linking the annexe to the fort (**V I 1**), a later development of the site.

The fabric is pale cream in colour and fine in texture with quartz particles, 0.1-0.2mm in size, and moderate amounts of silt-sized mica most visible in the surfaces. Although it superficially resembles Nene Valley wares the presence of mica precludes this source. It may be from a local source. Small-scale production centres are found at both South Carlton in Lincolnshire (Webster 1944) and Brough-on-Humber (Darling 2005), but neither of the fabrics used at these kilns or those of York resemble the Lease Rigg vessel. However, there may have been, as yet undiscovered, kilns operating in the vicinity.

The final sherd in this category is a fragment of a beaker (2gms) from **Z Z 1** that is similar in both fabric and form to Drawing 21, above. However this sherd is very burnt and so vitrified that the colour-coat has become glassy. There are no diagnostic features, therefore it is not possible to date or source this sherd. However, it should be noted that the bag containing this sherd is marked **Z X 1**, but the sherd is marked **Z Z 1**.

The Mortaria by K Hartley

The mortaria can be grouped into five fabrics, here called Fabrics M1 to M5. Samples of five of these vessels were taken for thin section and chemical analysis and a summary of the results of this analysis are incorporated into this report.

Fabrics M1 and M1v. Noyon (Oise) and Oise/Somme area of Gallia Belgica (Hartley 1998, 200-206; 1998, 75; Hartley and Tomber forthcoming, Section 3)

Description: self-coloured and fairly fine-textured fabric, varying in colour through cream, yellowish to brownish-cream, pink and very pale brown; often powdery in texture. Chemical weathering causes fine crazing on the surface and a progressively soft texture and crumbling when deposited in adverse conditions, i.e. acid soils and/or wet conditions. Inclusions: moderate to fairly frequent, tiny to small, opaque red-brown material with some quartz and some opaque black material. Trituration grit: mixed flint and quartz. One sample of this fabric was taken for thin section and chemical analysis. It has a similar chemical composition to fabric M1v.

Fabric M1v is a pink almost orange-brown variant. A sample of this fabric was taken for ICPS analysis and confirms the similarity of this fabric to Fabric M1.

There are sherds from at least four different mortaria of Type Gillam 238. They are all from mortaria with the classic, wide flat flange which can be dated within the period AD65-110.

The fabric of all is in the crumbling state which occurs regularly when deposition is in acid/wet conditions.

(Not Illustrated) LR 78 A I 20. Fabric 1, Oise/Somme area of Gallia Belgica. The left-facing side of the spout of a mortarium of type, Gillam 238. AD65-110. A heavily worn base/body sherd from the same or a similar mortarium also survives. Thin Section and ICPS sample No. V4118.

(Not Illustrated) LR78 A I 22. Fabric 1, Oise/Somme area of Gallia Belgica. The right-facing side of the spout of a mortarium of type, Gillam 238; the difference in the grooving behind the bead suggests that this fragment is not from the same mortarium as A I 20. AD65-110.

(Not Illustrated) LR79 B III pit. Fabric 1, Oise/Somme area of Gallia Belgica. Incomplete rim-section of a Gillam 238 mortarium. AD 65-110. it is not possible to be certain that it is from a fifth mortarium of this type, but it could be.

(Not Illustrated) LR80 W I 11. Fabric 1v, Oise/Somme area of Gallia Belgica. Numerous crumbling fragments from a mortarium of type Gillam 238. AD65-110. ICPS Sample number V4121.

Fig 00 DR21 LR80 Z 1 15. Fabric 1, Oise/Somme area of Gallia Belgica. Two joining sherds making up the full spout of a Gillam 238 mortarium. AD65-110.

Fabric M2 probably Colchester

Self-coloured, brownish-cream fabric, fine-textured, but open in texture. Inclusions: probably, sand-sized quartz, too small to be visible at x20 magnification, with rare, larger quartz, rare orange-brown and very rare black material. Trituration grit: possibly quartz, but the odd grits visible could be larger inclusions which have become visible through erosion of the fabric. The only vessel in this fabric is fragmented, but the fragmentation is the result of the thinness and fragility of the vessel rather than the type of fabric.

A single vessel is present. I know of no example of the form used as a mortarium, but types clearly allied to Symonds and Wade nos. 121, 125 and 128 were sometimes used for mortaria (Symonds and Wade 1999). It is not certain that there are additional trituration grits in this example and it is perhaps more likely that it was a bowl rather than a mortarium.

The only potter who stamped any of the above ‘fine ware’ types in Britain was Sextus Valerius Viroma(rus) who worked at Colchester within the period AD 60-85/90 (ibid. 203; Hartley forthcoming). The use of Symonds and Wade no.125 as a mortarium derives from a trio of potters, the Atisii, who worked at Aoste in Isère and whose Gillam 236 mortaria appear occasionally in Britain (Hartley 1973, 47, fig. 3). There was also a potter who is attributed to the north of Gallia Belgica, Q. Valerius Se[….] (Hartley 1998, Hartley Group I, 206-208) who had the unusual Gillam 236 form in his repertoire, perhaps because one of his potters had come from the Aoste pottery.

The question arises as to which of the three conceivable sources, the Lease Rigg vessel came from. On present evidence, Colchester appears to be the most likely source.

LR78 A IV 1A Fabric 2. Nine sherds broken in antiquity (now 17 because of breakages during and post excavation). Although only the two base sherds broken in antiquity join, all of the sherds can reasonably be assumed to be from the same relatively uncommon bowl type, Symonds and Wade 1999, 249, fig.5.21, no.120 under fine wares; the closest published example is in Hull 1963, fig. 105, no.312 (where it is was undated and rare).

Fabric M3 Heworth, York or possibly Aldborough (Tadcaster mort)

Description: hard, fine-textured, orange-brown fabric with thick, well-defined dark grey core (Munsell 2.5YR 4/0) with an almost bluish tinge; traces of a cream slip. Inclusions: fairly frequent to frequent, sand sized quartz, with rare orange-brown sandstone material. Trituration grit: quartz and red sandstone with rare black material.

Fig 00 DR23. LR80 Z VII 1 Rim sherd from a mortarium in Fabric M3 with internal distal bead. The rim-profile can be matched in mortaria made at Aldborough (Jones 1971, 65, fig. 18, no.10) and in mortaria found at both York and Malton. The production at Aldborough was within the period AD100-140. It is possible that similar mortaria were produced at York and/or Malton.

LR80 X I 1 Base/body sherd in Fabric M3, but with red-brown slip. The mortarium clearly had concentric scoring, which suggests a date probably not later than AD120. Some burning.

LR78 A IV 1 i Badly weathered or eroded rim sherd in Fabric M3. York or Malton. Early second century.

Fabric M4 York or Malton

Description: very hard, fine-textured, orange-brown fabric with thin self-coloured or matt, red-brown slip. Inclusions: frequent, minute quartz with some larger quartz and black material. Trituration grit: mixed quartz and quartz sandstone with rare red-brown and black material. (Many have fallen out.). A sample of this fabric was examined in thin section and using Inductively-coupled Plasma Spectroscopy. It has an similar appearance in thin section to the samples of oxidized and greywares and to the sample of M5 and cannot be distinguished from these groups through its chemical composition.

(Not Illustrated) LR78 A IV 1 i (body/base sherd)

(Not Illustrated) LR78 A IV 1 ii Base/body sherd in Fabric M4, from a very thick mortarium. Some wear is indicated, but the slip on the underside of the base remains intact. York or Malton.

(Not Illustrated) LR80 Z X 1 Base/body sherd from a second thick mortarium in Fabric M4 with self-coloured slip. It could just possibly be from the 'surface' mortarium below. Worn. York or Malton. Thin Section and ICPS Sample No. V4119.

Fig 00 DR24 Lease Rigg Surface Diameter 360mms 9% A mortarium in Fabric M4 similar in fabric and generally similar in form to Hartley 1995, group 3, p305-307, fig 123-4, nos.7-14 . Worn. York or Malton. Probably early second century.

Fig 00 DR25 LR 78 A I 20 Diameter 340mms. 14% A mortarium with unusual grooved bead, in Fabric M4. York or Malton. Early second-century.

Fabric 5 ?Local

Description: orange-brown fabric with buff-brown core and thin, matt, self-coloured slip. Inclusions: the open texture is caused by frequent, minute (barely visible at X20 magnification), but ill-sorted quartz with some opaque black and orange-brown material. Trituration grit: almost all has fallen out, but occasional quartz sandstone, red-brown sandstone and black grits survive showing that it was mixed. A sample of this fabric was thin-sectioned and its chemical composition determined using Inductively-Coupled Plasma Spectroscopy. It cannot be distinguished from the M4 fabric either in thin-section or in chemical composition and is also similar to the samples of greyware and oxidized ware from the site.

Fig 00 DR22. LR 76 I X 3 Internal diameter 370mms. A mortarium with incomplete rim-section in Fabric M5; despite the thickness of the vessel, the fabric is very friable and has many surface cracks and most of the trituration grit have fallen out. There were perhaps five sherds in antiquity, but these have since broken into ten sherds with several more tiny fragments. The fabric was smoothed on the inside and on the upper surface of the flange but left noticeably rough elsewhere. This is from an unusually thick (wall around 1.5 cms thick), coarse mortarium probably never stamped, and for which it is not possible to give any parallel. The crudeness of the vessel and the friability and cracking suggest that this could be a vessel made on site. Probably worn. ICPS Sample No. V4120.

(not illustrated) LR 80 Z I 26 Incomplete rim-section probably from the same vessel and in the same condition. It is too incomplete to date with precision, but it would best fit a date in the late first to early second century.

LR 80 Z I/II 1a Small fragment with incomplete rim-section and crazed surface. Fabric 3. Indeterminate

LR 80 Z I-III 3 A base fragment in fabric generally similar to Fabric 4, but very soft, much coarser, and with cream slip; not otherwise represented in this sample. York or Malton.

The Stamped Mortarium

This vessel was found in the ditch silt of Trench B2 (see Hayes and Rutter 1964, 74, no. 2 and p.72, fig. 6 and p70) and is now in Whitby Museum. A note on this stamp was published in the Appendix of Hayes and Rutter, and the following note is a complete update.

Fig 00 DR26. Diameter *c*330mms. In hard, grey fabric changing to orangy-buff near the inner surface; the discoloured slip is probably intended to be buff. The trituration grit included much red sandstone and some hard, white grits. The partially impressed, left-facing potter's stamp reads GENIA[..], with dotted A. It is from one of seven dies used by one or more potters called Genialis; stamps from the die used, all have a dotted A, LI ligatured and a rather straight S. Mortaria stamped with the same die are now recorded from: Brough-on-Humber (2); Castleford; Lease Rigg, east Yorkshire; Hayton, Humberside (2); Norton/Malton (2); Scarborough museum; Slack (2); York (2); Yorkshire Museum (2; provenance unknown, but may be assumed to be York or Yorkshire). All are in orange-brown fabric. Given the distribution together with the evidence for mortarium production in the area, York is the most likely source though none of his stamps have been found to date on the Appletree Farm site at Heworth, north-east of the fortress site at York (SE 632529)(*Lawton 1992-1993*; *Britannia* xix, 1988, 440; xxii 1991, 240). The rim-profiles of this mortarium and the others stamped with the same die point to a date in the early second century, certainly before AD130 and perhaps before AD120.

At least three of the other Genialis dies were probably used by the same potter and it is quite possible that all seven were. If all the dies belonged to one potter, as seems more and more likely, Genialis began his activity at Caistor St Edmund, Norfolk in the late first century and moved to an unknown site in the midlands. His activity at York may post-date that in the midlands, but it could be contemporary if he sent one of his potters to York with a suitable die.

Medieval

A single sherd from a Brandsby-type ware jug was present. This ware was produced at centres in the Hambleton Hills, and perhaps elsewhere around the fringes of the North Yorkshire Moors, from the mid 13th to the 14th or 15th centuries (Jennings 1992; 1978).

Discussion

Dating

There appears to be two distinct phases of activity represented in the Lease Rigg collection. The first can be dated to the late 1st century whilst the second can be dated to the early to mid 2nd century. In most cases it is not difficult to assign the various wares to one or other of these phases. Table 1 shows the composition of Phase 1, omitting the amphorae and mortaria [mortaria possibly to be added following Kay's report]. The various handmade "native" wares may include some residual sherds from an pre-fort occupation of the area, but the IACALC sherds include some definitely contemporary vessels. The colour-coat, the Samian, the greyware and the oxidized ware all include examples for which a Flavian date can be given and no vessels of demonstrably earlier or later date. It therefore seems likely that the Phase 1 occupation took place at some point between c.70AD and c.100AD.

Table 3 Phase 1 (omitting Amphorae and Mortaria)

cname	Sum of Nosh	Sum of NoV	Sum of Weight
CC	10	5	23
GREY	73	51	413
IACALC	23	16	267
IAERR	17	10	203
IASST	6	6	53
OXID	105	65	1050
SAMIAN	19	18	143
Grand Total	253	171	2152

Phase 2, consists of a much smaller assemblage (Table 2). Although 54 sherds are present, they may represent 8 or fewer vessels. It is possible that some of the vessels assigned to Phase 1 might have been used in Phase 2, but in the case of the grey and oxidized wares, if they were made close to the fort for use primarily in the fort, then this is unlikely. It seems likely, that Eboracum ware was used in Phase 2, replacing a local oxidized ware whilst Dorset Black Burnished ware replaced a local greyware. The dating of Phase 2 is based on

the form of the oxidized ware flagon rim, which is Trajanic or early Hadrianic, the presence of Dorset Black Burnished ware, which dates to the Hadrianic or later and the presence of a single sherd of Central Gaulish samian, which also suggests an early Hadrianic or later date. Assuming that the sherds come from a single, short-lived re-occupation of the fort, then the combined evidence indicates an early Hadrianic date, i.e. c.120-40AD.

Table 4 Phase 2, omitting Amphora and Mortaria

cname	Sum of Nosh	Sum of NoV	Sum of Weight
BB	1	1	20
BB1	45	4	354
OXID	7	2	133
SAMIAN	1	1	21
Grand Total	54	8	528

The distribution of phase 2 sherds is shown in Table 3. This shows a concentration in Trench A I, and particularly in the fill of a sub-rectangular pit, layer 20. However, that concentration might well be due to the presence of a single black-burnished vessel.

Table 5

Context	BB	BB1	OXID	SAMIAN	Grand Total
A I 20	1	41			42
A I 21		2			2
A II/III 1		1			1
C I 1				1	1
H I 1			5		5
I X 1			1		1
Z IV 3		1			1
Z VI 2			1		1
Grand Total	1	45	7	1	54

Later finds include a colour-coated flanged bowl, a sherd of Crambeck greyware and a sherd of medieval pottery.

Supply

The thin section and chemical analysis of a sample of greyware, oxidized ware and mortaria fabrics M4 and M5 indicates that all have a similar composition. At x20 magnification, these fabrics are similar to Eboracum ware and the vessel types produced and rim forms are all paralleled at York (Monaghan 1997). However, the chemical analysis indicates that the Lease Rigg pottery is distinguishable from the one sample of Eboracum ware whose chemical composition is known to the authors, a tazza from Coppergate, York. This Coppergate vessel, however, has a similar chemical composition to that of late medieval wasters from Fishergate (Vince and Steane 2005), and together these samples provide 11

determinations of the composition of York pottery, all of which form a distinct group distinguishable from the Lease Rigg samples.

The closest parallels to the composition of the Lease Rigg pottery from the AVAC database come from fired and unfired boulder clay from a medieval site at Easingwold. That same boulder clay outcrops to the east of York, and may well have been used by potters at Heworth. The one stamped mortarium known from Lease Rigg was produced at the Apple Tree Farm, Heworth, pottery. However, until samples of this Heworth pottery have been analysed and compared with Lease Rigg the source must remain uncertain and we certainly cannot rule out a local supply on either petrological or chemical grounds. Such a local source would, however, have to have been in operation in both phases of activity at Lease Rigg and it seems unlikely that the early 2nd century occupation would have warranted the re-starting of local production.

Vessels from other sources are rare and consist mostly of specialised types, such as mortaria and colour-coated and Samian wares together with the calcite-gritted ware, some at least of which appears to be contemporary with the fort. Most of these wares occur commonly in York at if the coarseware was indeed supplied mainly by York potters then it is likely that these wares mainly came to Lease Rigg via York. However, calcite-gritted ware is uncommon in early Roman deposits in York and it is much more likely that this ware came to the site direct from the Vale of Pickering, probably via Malton.

Taphonomy

Most of the pottery comes from ploughsoil and subsoil and is likely therefore to have been dispersed to some extent from its original location. Nevertheless, where sherds from the same vessel were found, or suspected, they tend to occur in the same or nearby trenches. This does not suggest that there was any system for removal of waste from the site during its use, although it may be that much of what was found dates to either the construction or abandonment phases of the site. If so, it may be that the apparent two phases of activity described above were actually an artefact of the site taphonomy, with the pottery used during the occupation of the fort being disposed of elsewhere.

Function

Since it is not possible to assign most deposits to a specific phase of activity only a broad view of the function of the pottery and how it might have changed from the later 1st to the early 2nd century is possible.

The earliest pottery, possibly pre-dating the fort, all consists of jars apart from one sherd from a large vessel, possibly a storage jar.

For the definitely Roman pottery, the most common form is the jar, accounting for over half the sherds and 62% of the pottery quantified by the maximum number of vessels (i.e. sherds definitely from the same vessel in the same context counted as one). Amphorae are the next most common form by sherd count or maximum number of vessels and the most common form, unsurprisingly, by weight. Mortaria are the next most common form and account for 8% by maximum number of vessels, 7% by sherd count and 33% by weight. There are a maximum of 12 bowls, 6 beakers, and 3 flagons. All other vessel types either occur as single sherds or cannot be identified to a precise form.

Most of the activities for which pottery was used are represented on the site but food preparation and storage predominate and drinking and dining are poorly represented. However, both of these classes are concentrated, as a percentage of all identified pottery, in the same trenches: Trenches A, I X and Z, whilst sherds from storage vessels (including amphora) are concentrated in trenches X, A and C. When the finds are separated according to their broad location: main fort; main fort rampart and annexe, it can be seen that most of the pottery (113 vessels) come from the main fort, whilst 72 come from the rampart area and only three from the annexe. There is little difference in the composition of the groups from the main fort and its rampart.

The material from the main fort was grouped according to whether it was north or south of the main east-west street. Similar quantities were recovered from either half of the fort and the frequency of the main classes of vessel was similar (Table 4) although both the dining and drinking vessels were more common in the north half of the fort.

Table 6 Pottery grouped by maximum number of vessels by zone

period code	food preparation	dining	storage	nd	drinking	Grand Total
North half	41	8	4	2	5	60
South half	42	4	4	3		53
Rampart	52	5	9	3	3	72

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