

Petrological Analysis of Anglo-Saxon Pottery from Long Acre, City of Westminster (LCR99)

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Archaeological excavations at the western end of Long Acre, City of Westminster, which is situated in the heart of the mid Saxon trading settlement of *Lundenwic*, produced a small collection of handmade coarsewares which were interpreted by Lyn Blackmore as being earlier than *Lundenwic*. Such material therefore offers a glimpse of the range of pottery used before c.650 and makes an interesting comparison with similar coarsewares used in the mid Saxon settlement, where scientific analysis has shown that a range of sources supplied the settlement.

Five sherds were selected for study following discussion between the author and Ms Blackmore (Table 1). Each sherd was examined at x20 magnification and the principal visible inclusions were noted. The sherds were then thin sectioned (by S Caldwell, Dept of Earth Sciences, University of Manchester) and stained using Dickson's method in order to differentiate between ferroan (stained blue) and non-ferroan (stained pink) calcite and dolomite (unstained). The thin sections have been assigned sample numbers within the AVAC reference collection.

Table 1

TSNO	MoL Code	Form	Nosh	NoV	Context	Description
V2084	MSLQB	JAR	1	1	199	POSSIBLE LAVA INCLUSIONS
V2085	ESBO	JAR	1	1	071	BONE TEMPER?
V2086	ESSTD	JAR	1	1	181	FERRUGINOUS GSQ SAND - SW LONDON?
V2105	SLGSB	JAR	1	1	192/186	QUARTZ SAND WITH GRAINS IN A FERRUGINOUS MATRIX
V2106	ESSTB	JAR	1	1	181	FINE-GRAINED SANDSTONE SAND

Petrological analysis

V2084

The following inclusions were noted in thin section:

- Abundant angular fragments of lava, consisting of laths of feldspar and light green, zoned pyroxene up to 1.0mm across in a groundmass of glass and opaque euhedral grains (titanium or iron oxides?) less than 0.1mm across.

- Moderate subangular voids up to 1.0mm across.
- Sparse rounded quartz up to 0.5mm across.

The groundmass consists of anisotropic baked clay minerals and angular quartz and muscovite up to 0.1mm long. There are also some very small fragments of lava, but these are rare.

V2085

The following inclusions were noted in thin section:

- abundant subangular and angular fragments of bone. These range from c.0.2mm to 1.0mm across. Most are strongly brown-stained but the degree of staining varies. Although most of these fragments are complete isotropic, those with a fresher, less stained, appearance exhibit some grey interference colour.
- Abundant organic inclusions up to 4.0mm long and 0.5mm wide.
- Moderate to abundant angular quartz up to 0.2mm across.

The groundmass consists of baked clay minerals whose anisotropy is masked by carbon.

V2086

The following inclusions were noted in thin section:

- abundant subangular quartz grains, mainly well-sorted between 0.3mm and 0.5mm across
- sparse sandstone fragments up to 1.0mm across composed of similar quartz grains
- sparse rounded altered glauconite grains up to 0.3mm across

The groundmass consists of anisotropic baked clay minerals, sparse quartz silt and sparse muscovite up to 0.1mm long.

V2105

The following inclusions were noted in thin section:

- Abundant rounded quartz grains, mainly with opaque veins and coatings, up to 0.5mm across.
- Abundant subangular opaque grains up to 0.3mm across.
- Sparse rounded chert, up to 0.5mm across, also with opaque veins and coatings.
- Sparse angular quartz and muscovite laths up to 0.2mm across.

The groundmass is composed for anisotropic baked clay minerals, sparse quartz silt and angular opaque grains.

V2106

The following inclusions were noted in thin section:

- abundant fragments of quartz sandstone up to 1.5mm across. These fragments are rounded although the individual grains of which it is composed are overgrown and therefore subangular.
- Moderate organic inclusions, up to 2.0mm long and 0.2mm wide.

The groundmass consists of dark brown baked clay minerals and sparse muscovite laths up to 0.1mm long.

Discussion

The five samples include two with fabrics which have been noted in the early Anglo-Saxon period in the Thames valley (the bone tempered and fine-grained sandstone sand tempered sherds, V2085 and V2106) whilst the remainder have fabrics which are paralleled in other mid Saxon collections from *Lundenwic*. There is, however, no reason to suppose that the latter fabrics were not already in use before c.650.

The samples have four distinct fabrics, of which only one, samples V2086 and V2105, can be safely assigned to a source area within the Thames Basin (in this case southwest London, south of Kingston upon Thames). The source of the basic igneous rock fragments found in V2084 is unknown. The rock clearly does not outcrop within the Thames basin, nor for that matter in southeastern England, the Midlands or East Anglia, but neither is the rock likely to originate in boulder clay in the London area, where such erratics would be few and far between. The two options are therefore that either the rock fragments were deliberately added or that the pot was made at some distance from London. The remaining characteristics of the fabric do not support the latter alternative and therefore it is suggested that a basic igneous rock, either an erratic or perhaps an artefact such as a quernstone, was pulverised and added to the potting clay. It is extremely unlikely that any potter would try and disaggregate either of these unless the rock was pre-stressed by fire-cracking. The bone-rich temper found in sample V2085, by contrast, does not seem to have been formed by the addition of deliberately crushed bone, calcined or otherwise, and is likely to be the result of the use of a sand (or sandy clay) which was already rich in phosphate nodules and bone. Such bone beds occur in the Rhaetic, in the lower Cretaceous and at various points in the Tertiary sequence, such as the base of the London Clay. Clearly, the latter source is the closest to *Lundenwic* but the only comparable material known to the author comes from Barrow Hills, Radley, where a lower Cretaceous origin is more likely. Finally, the fine-grained orthoquartzite found in V2106, nicknamed “sugary sandstone” from its appearance at x20

magnification, requires identification. Examples of this fabric have been found in *Lundenwic* excavations previously as well as in early Anglo-Saxon assemblages in the Thames valley to the west.

Conclusion

The five handmade coarseware vessels examined in thin section have four quite different fabrics and only one of these fabrics can be provenanced with any certainty to a source within the Thames basin.

One of these fabrics has no close parallels known to the author (the bone-tempered fabric) and is not truly comparable with early Anglo-Saxon bone-tempered fabrics in which the bone appears to have been deliberately added, calcined bone. One is paralleled in early Anglo-Saxon contexts (the fine sandstone-sand tempered fabric) and two (the lava-tempered and quartz and ironstone-tempered fabrics) are paralleled on other *Lundenwic* sites but not on early Anglo-Saxon sites, either in the Thames basin or elsewhere. The weight of evidence suggests that the samples of the latter two fabrics are of mid Saxon date and the fine sandstone-sand tempered fabric is of early Anglo-Saxon date. Since there are no precise parallels for the bone-tempered fabric its date is not clear, although since it was found on a site in *Lundenwic* the most likely date is mid Saxon.