

POTTERY FROM MUCKING, ESSEX

D. P. Williams, Ph.D.,

(DOE Ceramic Petrology Project)

Department of Archaeology, University of Southampton

A number of samples of Belgo-Roman and Roman pottery from Mucking, many of them associated with the local kilns (Jones and Rodwell, 1973), were submitted for petrological analysis. The object of the examination was firstly, to more closely characterize the fabrics directly associated with the kilns, secondly, to compare other pottery suspected of being made at Mucking, and thirdly, to see how these results compare with neutron activation analyses of the same samples (results awaited). All the samples were thin sectioned and studied under the petrological microscope, and four were also subjected to a heavy mineral separation. Due to the fact that the overwhelming non-plastic inclusion-type in the pottery is quartz, a number of different fabrics were distinguished on a textural basis: that is according to the size, shape and frequency of the quartz grains in each thin section sample. The majority of the pottery examined here has been illustrated and described in the hand-specimen by Rodwell (Jones and Rodwell, 1973), and the figure references quoted refer to this publication.

Group 1 'Graffito ware' : provisionally dated to the time of the Claudian conquest (Jones, 1972).

730 x 399 (x). Fairly soft, slightly rough and soapy vesicular fabric, light red (Munsell 10R 6/8 to 5/6) surfaces and dark grey core.

Thin sectioning shows a fairly clean clay matrix containing a number of angular-shaped voids, commensurate with the vesicular nature of the sherd. A small fragment of shell is present in the clay, and it is possible that the voids represent inclusions of shell which have been lost due to the particular soil conditions at the site (Jones, 1972, 336). Also present in the section is a small amount of grog (crushed up pottery), a scatter of subangular quartz grains and some flecks of mica.

Group 2 Pottery associated with the Belgo-Roman kilns, dated to the immediate post-Conquest period (Jones and Rodwell, 1973).
350 x 600 (1). Fairly hard, rough sandy fabric, with quartz grains and some flint protruding through the grey (10YR 5/1) surfaces.

Thin sectioning shows a groundmass of subangular quartz grains, average size 0.15mm and under, with a scatter of larger grains up to 1mm across, flecks of mica and a little flint and iron ore.

1273 x 175 (3). Hard, slightly rough sandy fabric, light red (10R 6/8) to buff throughout.

Fairly similar in thin section to 350 x 600 (1), but with some inclusions of grog.

1275 x 179 (2). Hard, slightly rough fabric, dark grey (7.5YR N4/) throughout.

612 x 542 (2). Very hard, rough sandy fabric, orange surfaces, light grey core.

127 x 3 x 175 (3). Hard, rough fabric, reddish-buff throughout.

In thin section all three sherds contain a scatter of ill-sorted subangular quartz grains ranging up to 1mm in size, flecks of mica and a little flint. Sample 612 x 542 (2) shows an optically isotropic matrix indicating a high temperature of firing.

The following sherds are also from (?) post-Conquest contexts, but were not directly associated with the Belgic-Roman kilns.

520 x 518 (2b). Similar in thin section to the 'graffito' sherd above, but appearing to lack the inclusions of grog.

730 x 399 (x). Fairly similar in thin section to the 'graffito' sherd above.

1272 x 182 (1). Possibly a more sandy version of the vesicular fabric associated with the 'graffito' sherd above.

520 x 518 (2c).

520 x 518 (2a). Both sherds are similar in thin section and show frequent subangular quartz grains, average size 0.10-.40mm, some grog, flint and flecks of mica. These two samples are not exactly matched by these products of the Belgic-Roman kilns analyzed above, but they do contain a certain amount of grog, also present in the 'graffito' sherd.

Group 3 Kiln II: dated to the third century (Jones and Rodwell, 1973)

M3002a Fig.4, no.10 Type B: bead-rim pie-dish.

M3068b Fig.5, no.38 Type G: cupped-rim bowl.

M3033b Fig.5, no.41 Type H: cupped-rim jar.

M3291 Fig.7, no.65 Type M: necked-jar with flattened rim.

M3231a Fig.8, no.72 Type N: large narrow-necked jar.

M5044 Fig.9, no.75 Type N: large narrow-necked jar.

M3269a Fig.9, no.93 Type O: narrow-necked flask.

M3244b Fig.10, no.96 Type Q: folded beaker.

M3130a Fig.10, no.100 Type Q: folded beaker.

M3289 Fig.10, no.105 Type R: conical-necked beaker.

M3179a Fig.10, no.106 Type R: conical-necked beaker.

M3237c Fig.10, no.119 Type U: miniature pottery.

Thin sectioning shows frequent subangular quartz grains, average size 0.05-.30mm, with the occasional larger-sized grain, small fragments of flint, a little quartzite, iron ore and some discrete grains of felspar.

In thin section two other sherds were found to be similar to the above products of kiln II:

M5047 Fig.9, no.90 Type O: narrow-necked flask. Well(1).

M3091a 316 x 622 x 3. Bodysheer from a (?) jar.

M3212a Fig.10, no.118 Type U: miniature pottery.

Thin sectioning shows numerous well-sorted subangular quartz grains, average size 0.15mm and under, flecks of mica and a little flint. Similar to the Belgo-Roman sherd 350 x 600 (1), but lacking the scatter of larger-sized grains present in that sample.

M3221a Fig.4, no.1 Type A: straight-sided pie-dish.

M3248a Fig.5, no.30 Type F: ledged-rim jar.

M3033d Fig.6, no.48 Type J: undercut-rim jar.

M3180a Fig.10, no.112 Type S: large storage jar.

Thin sectioning shows a golden-yellow optically anisotropic clay matrix containing a scatter of ill-sorted subangular quartz grains up to 1.20mm in size, flecks of mica, flint and siltstone. A heavy mineral separation on sample M3180a revealed an assemblage of non-opaque grains rich in zircon but with a conspicuous amount of kyanite, a less common mineral than zircon, and one which is known to occur in the Tertiary deposits of Essex.

M32746 Fig.4, no.17 Type C: incipient flanged pie-dish.

Thin sectioning shows a similar fabric to M3221a, M3248a, M3033d, M3180a, but with fewer inclusions.

M3003a Fig.5, no.26 Type F: ledged-rim jar.

M3208a Fig.5, no.27 Type F: ledged-rim jar.

M3101a Fig.5, no.28 Type F: ledged-rim jar.

Similar in thin section to samples M3002a, etc., but with slightly more frequent larger-sized quartz grains and flint.

Group 4 Kiln III: dated to the fourth century, but with the proviso that some sherds associated with the kiln may in fact be strays from kiln II (Jones and Rodwell, 1973).

M3297c Fig.4, no.18 Type D: flanged pie-dish.

M3305c Fig.10, no.110 Type S: large storage jar.

Thin sectioning shows a groundmass of subangular quartz grains, average size 0.10mm and under, and a scatter of larger grains ranging in size from 0.20-.60mm, with plentiful mica, a little iron ore, quartzite and some flint. A heavy mineral separation on M3297c produced an assemblage of non-opaque grains rich in zircon and with a little garnet and andalusite, but lacking the kyanite which is a distinctive feature of the other analyses carried out in this examination of Mucking pottery.

In thin section another sherd was found to be similar to the above products of kiln III:

M5058e Fig.7, no.64 Type L: wide-mouthed, flat-rim bowl.

M3305a Fig.7, no.58 Type K: wide-mouthed, cavetto-rim bowl.

M3333a Fig.10, no.101 Type R: conical-necked beaker.

M3313 Fig.11, no.130 Type V: unclassified.

Similar in thin section to samples M3002a, etc., from kiln II.

A heavy mineral separation gave an assemblage rich in zircon and with a conspicuous amount of kyanite.

Group 5 From well (1) deposit.

M5050a Fig.4, no.19 Type D: flanged pie-dish.

Thin sectioning shows a groundmass of subangular quartz grains under 0.05mm in size, and a scatter of larger grains, average size 0.10-0.30mm, and frequent flecks of mica. A heavy mineral separation gave an assemblage rich in zircon and with a conspicuous amount of kyanite.

M5049 Fig.4, no.14 Type B: beaded-rim pie dish.

Thin sectioning shows frequent ill-sorted subangular quartz grains ranging up to 0.70mm in size, flecks of mica and some flint.

Group 6 Grey ware mortarium.

322 x 610 x 3. Fairly hard, slightly rough fabric, with (?) trituration grits of flint, dark grey (10YR 4/1) surfaces, light grey core.

Thin sectioning shows ill-sorted subangular quartz grains ranging in size 0.10-1mm, flecks of mica, a small amount of fairly large fragments of flint, and a little sandstone.

288 x 622 (1). Hard, slightly rough fabric, reddish-grey (5YR 5/2) throughout.

311 x 642 (x). Hard, slightly rough fabric, reddish-grey (5YR 5/2) throughout.

Thin sectioning shows frequent subangular quartz grains, average size 0.10-.20mm, with occasional larger grains, some flecks of mica and a few fairly large fragments of flint.

The texture of all three mortaria samples does not match exactly any of the above kiln products. However, given the common range of inclusions present and the size-variety of quartz represented in the kiln sherds, a local source cannot be ruled out.

Conclusions

The petrological analysis of the Mucking kiln products highlights the problems involved in characterizing a group of pottery which contains very common inclusions. Texturally, there seems to be a certain degree of variety present in the products which have been attributed to the local kilns. This may possibly reflect a situation where several potters were using the same kilns, either utilizing a slightly different source of raw materials, and the heavy mineral results would seem to suggest this, or else each having his own particular 'mix' for the clay. Given this degree of variety, it makes it difficult to establish a standard fabric for the wares of the Mucking kilns, and so be confident in comparing suspected products of the kilns, as in the case of the grey ware mortaria.

Previous work indicates that the local Mucking brickearths are quite suitable for potting (Jones and Rodwell, 1973, 15). Thin sections of a small number of local baked clay samples reveals a

similar range of inclusions to the majority of pottery examined.

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