

PETROLOGICAL EXAMINATION OF LATE BRONZE AGE / EARLY  
IRON AGE POTTERY FROM MUCKING, ESSEX

for Central  
Unit.  
3077

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A selection of Late Bronze Age / Early Iron Age pottery was submitted for study in thin section under the petrological microscope, together with samples of local clay and brickearth collected from the vicinity of the site. The object of the examination was threefold: (1) to group the sherds according to their range of non-plastic inclusions, (2) to see how far the pottery compared with samples of local clay and brickearth, and (3) to see how both of these results compared with neutron activation analyses of many of the same samples (results awaited). In addition to the pottery, samples of ceramic salt production equipment were also submitted for analysis.

Initial hand-specimen study shows that the overwhelming majority of the samples contain such common inclusions as flint and quartz sand. However, under the microscope it is possible to distinguish a number of different fabrics within this limited range of inclusions, by a careful examination of the texture of each sample, i.e. the size, shape and frequency of the constituent non-plastic inclusions. The thin section results of such a fabric classification are as follows:

Group 1 (Samples: 7822282, 7824060)

Very hard, rough slightly sandy fabric containing frequent fragments of small crushed flint, grey to dark greyish-brown (Munsell 10YR 4/2) throughout. Thin sectioning shows frequent inclusions of flint

up to 1.5mm across, numerous subangular quartz grains, average size 0.10-.20mm, flecks of mica and some iron ore. These are set in a golden-yellow-brown optically anisotropic clay matrix.

Group 2 (Samples: 3-123, 7820952, 16-715, 23-2587)

Hard, thick rough fabric, containing frequent large fragments of crushed flint, reddish-buff throughout. Similar to Group 1 but with larger inclusions of flint, up to 3.20mm across.

Group 3 (Samples: 495-1726, 102-735)

Hard, slightly sandy fabric, containing scattered fragments of crushed flint, variable in colour. Similar to Group 1, but with less flint.

Group 4 (Samples: 440-1694, 1385-2848)

Hard, rough fabric, with frequent fragments of crushed flint, variable in colour. Thin sectioning shows frequent fragments of flint, up to 3.0mm, and a scatter of subangular quartz grains, average size 0.05-.10mm, set in golden-yellow-brown optically anisotropic clay matrix. Sample 1385-2848 is slightly less sandy than 440-1694.

Group 5 (Samples: 15-661, 7820469, 7824495, 7822547, 181-1351)

Hard, slightly rough fabric, containing frequent small inclusions of crushed flint, dark grey (5YR 4/1) throughout. Similar type of clay matrix as Group 1, but with less quartz sand and smaller-sized flint.

Group 6 (Samples: 23-852, 1-119)

More sandy versions of Group 7.

Group 7 (Sample: 34-1103)

Hard, rough fabric, containing numerous small inclusions of

crushed flint, light to dark red throughout. Thin sectioning shows a groundmass of frequent subangular quartz grains, average size 0.05-.15mm, plentiful flint, with a little mica.

Group 8 (Sample:178- 4576)

Hard, fairly thin slightly rough sandy fabric, containing a scatter of crushed flint, brownish-buff surfaces and light grey core. Thin sectioning shows a scatter of crushed flint and frequent ill-sorted subangular quartz grains in the size-range 0.05-.60mm and flecks of mica. Rather unusually, a few heavy mineral grains of kyanite, tourmaline and zircon are also present in the thin section. Kyanite, in particular, is known to occur in the Tertiary deposits of Essex.

Group 9 (Samples:23-1454, 7822251)

Soft, slightly rough fabric, much abraded, with a scatter of crushed flint, orangy-red throughout. Thin sectioning shows a scatter of flint, a groundmass of subangular quartz grains 0.05mm in size and a little quartz-sandstone.

Group 10 (Sample:502-1842)

Fairly soft, thin sandy fabric, reddish-buff surfaces and dark grey core. Thin sectioning shows a scatter of subangular quartz grains in the size-range 0.05-.15mm.

Group 11 (Samples:1080-2423, 7825054, 780058)

This group contains those sherds with traces of organic tempering; however, there are obvious differences between them. Sample 1080-2423 is in a slightly soft, fairly smooth fabric, dark grey (5YR 4/1) throughout. Thin sectioning shows a scatter of quartz grains, average size 0.05-.10mm and traces of organic material. Sample 7820058 is in a fairly soft, slightly rough fabric, with a small amount of visible flint, reddish-grey throughout. Similar in thin section to Group 1,

but with much less flint and traces of organic material. Sample 7825054 (? possible briquetage) is in a fairly soft, slightly rough fabric, heavily tempered with organic material. Thin sectioning shows little else but traces of organic material and a little quartz, but again the fairly clear golden-yellow-brown optically anisotropic clay matrix is a distinctive feature.

Group 12 (Samples: 7824034, 7824528 - ceramic salt production equipment)

Fairly soft, rough sandy fabric, with a little flint, reddish-grey throughout. Thin sectioning shows abundant quartz grains in two size-classes: a groundmass average size 0.10-.20mm and a scatter of larger grains 0.40-.60mm, and a little flint.

### Conclusions

The local clays and brickearths at Mucking proved suitable for potting in the later periods (Jones, 1973), and it seems highly probable that much of the material studied above also had a fairly local origin. The ubiquitous flint used for tempering these vessels can be obtained, for example, from the local gravels. However, in this case the actual samples of clays and brickearths accompanying the sample sherds tend to be much coarser in texture than the pottery. The exception to this was the ceramic salt production equipment, which is fairly similar to the brickearths submitted.

Jones, M.U. (1973) 'The Romano-British pottery kilns at Mucking',  
Trans. Essex Arch. Soc., 5(1973), 13-47.