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PETROLOGICAL EXAMINATION OF ROMAN POTTERY FROM EXETER

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A variety of Roman sherds from recent excavations at Exeter were submitted for fabric analysis. All the sample sherds were studied under the petrological microscope, either in the form of a thin section or as a heavy mineral residue. As a result of this work it has proved possible to compare and contrast the fabric of each sherd, and also in some cases to make suggestions as to their likely origins. Bidwell's (1979) Fabric Type-Series terminology has been used throughout.

First century 'Locally-produced Wares'

Fabric 371 MM71 MZZ Cooking-pot rim (100/20/1)

Thin sectioning shows frequent grains of subangular quartz in two size grades: (a) a groundmass under 0.10mm., and (b) a scatter of larger grains in the range 0.15-.30mm. Also present are flecks of mica, quartzite and some iron ore.

Fabric 190 WM72 AAH Cooking-pot rim (190/20/2)

In thin section this sherd is not dissimilar to Fabric 371. Both samples contain a numerous groundmass of quartz grains under 0.10mm. in size, though Fabric 190 is slightly coarser

of the two in that the scatter of larger quartz grains fall in the range 0.20-1.20mm.

Fabric 191 WM72 WMP81 'Imitation Pompeian-red platter'

Thin sectioning reveals a quite different fabric to the two previous examples. Inclusions of sandstone, siltstone, shale and quartzite occur throughout the clay matrix, together with a scatter of ill-sorted quartz grains ranging up tp 1.10mm. in size, and flecks of mica.

For comparative purposes with the above three samples, a sherd from the late Neronian/ early Flavian kiln in Barthelomew street and also one from the Saxo-Norman kiln in Bedford Street were each thin sectioned. The sample from the Roman kiln contains abundant quartz grains, average size 0.10-.20mm., a little sandstone, quartzite, mica and plagioclase. It does not compare well to any of the Exeter fabrics. In contrast, the sherd from the Saxo-Norman kiln contains roughly the same range of inclusions as Fabric 191: sandstone, siltstone, shale quartzite, chert and ill-sorted quartz grains, and may indicate a fairly local source for the latter fabric type.

'Imitation terra nigra' EARI Fig.67,247

Thin sectioning shows abundant grains of quartz in two size-grades: (a) a groundmass under 0.10mm., and (b) a scatter of larger grains in the range 0.15-.30mm. Also present are small fragments of fine sandstone, quartzite and mica.

It is difficult to predict possible sources when dealing with such common minerals, however, in thin section this sample is similar to Fabric 371, which is considered to be a

locally-produced type.

'Native wares'

Fabric 3 MM71 20T Late first century cooking-pot

In thin section this sample contains a fairly similar range of inclusions to Fabric 191.

GS L386 Late first century cooking-pot

In thin section the most prominant inclusions are made up of angular grains of altered felspar and colourless grains of amphibole, many of which appear as fibrous aggregates. Also present are a few grains of pyroxene, quartz and magnetite.

This assemblage of minerals closely resembles Peacock's (1969) description of the gabbroic clays of the Lizard Head, Cornwall, and it seems probable that this was the source of the raw materials for the Exeter vessel. The wide distribution of Iron Age Cornish gabbroic pottery is now a well-known fact, due to the work of Peacock (1969). This pottery industry has recently been shown to have been active in the Roman period as well (Williams,1976).

'Micaceous grey wares'

Fabric 81 WM72 ZX Cooking-pot, c. A.D. 60-65

Thin sectioning shows frequent grains of subangular quartz, average size 0.30-.40mm., and well rounded light brown grains of limonite (altered glauconite). Mica is present in the fabric,

but it is not a conspicuous element.

The presence in some numbers of altered glauconite suggests an origin in the Upper Greensand. Small deposits of Upper Greensand occur south-west of Exeter in the area around Ideford, while larger formations are to be found in south-east Devon.

Fabric 125 WM72 SO Second century cooking-pot

Thin sectioning reveals abundant quartz grains under 0.10mm. in size, flecks of mica, a few grains of plagioclase felspar and some iron ore.

This fabric appears to be quite different to Fabric 81. The common range of inclusions make a possible source area difficult to predict.

Flagon fabric

Fabric 406 MM71 2WK Flagon, c. A.D. 60-65

In the hand-specimen this sherd appears to be similar to the flagon products of the Claudian kiln at Corfe Mullen, Dorset (Calkin,1935). A sample from a flagon from the Corfe Mullen kiln was therefore thin sectioned for comparison with the Exeter sherd. This revealled that the Corfe Mullen sample is slightly finer in texture than the Exeter sherd. In thin section the Corfe Mullen sample contains a scatter of subangular quartz grains, average size 0.10-.20mm., and iron ore, set in a fine, almost inclusion free, optically anisotropic golden matrix. The Exeter sherd contains a groundmass of quartz grains under 0.05mm., with a scatter of larger grains in the range 0.10-.20mm., and iron ore, set in an optically isotropic grey matrix.

'Black-burnished ware'

Fabric 31 CG76 EFL Late first/second century cooking-pot

RS946-1 Second century flat-rimmed bowl (35/34/1)

In the hand-specimen both sherds appear identical in fabric to typical BB1 products from the Wareham-Poole Harbour area of Dorset. A heavy mineral analysis was undertaken on the cooking-pot, and this produced an assemblage characterized by a high tourmaline content, and agreed well with analyses on BB1 vessels shown to have been made in the Wareham-Poole Harbour area of Dorset (Williams,1977,Group I). A similar origin for the Exeter sherds is likely.

From the late third century Dorset BB1 (= Fabric 31) would seem to be the only black-burnished type reaching Exeter (see Bidwell p.?). The expansion of the Dorset BB1 industry in the later Romam period, to the virtual exclusion of other BB1 fabrics, has already been noted elsewhere (Williams,1977,204).

Fabric 40 CG76 EL0 Late first century cooking-pot

This sherd is in a quite different fabric to the two Dorset BB1 sherds above, containing appreciably fewer quartz grains than is usual for Dorset BB1 . In addition,it is characterized by the application of a rich black slip on the outer surface, always lacking in Dorset BB1 forms. A heavy mineral analysis produced a suite of minerals quite unlike that associated with the Wareham-Poole Harbour area of Dorset. The dominant heavy mineral in the assemblage is zircon, followed by smaller amounts of garnet, tourmaline, kyanite and epidote. This suite of minerals is not unlike that recorded previously

on two wheel-turned imitation BB1 vessels from Exeter (Williams, 1977,Group X). The presence of Kyanite, a mineral which is commonest in post-Triassic sedimentary rocks, suggests a non-local origin for the pottery. A source area to the east of Devon would seem more likely in this case.

Fabric 60 NS73 BOK Antonine handled beaker (60/12)

A heavy mineral analysis of this sherd produced too few grains for a meaningful assemblage. However, in thin section this sherd was not dissimilar to the Fabric 40 sample: both contain frequent subangular quartz grains in the size range 0.10-.40mm. and some flint/chert.

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