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A NOTE ON THE PETROLOGY OF
SOME PREHISTORIC CERAMIC
MATERIAL FROM IRBY, WIRRAL,
MERSEYSIDE

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Summary

Thin sectioning was undertaken on a representative selection of late Prehistoric pottery and fired clay from the 1987-96 excavations at Irby. The majority of the sectioned pottery contained angular igneous inclusions which may well represent added crushed temper. The range of igneous rocks can be paralleled in the local glacial erratics and from the catalogue of "rubbing stones" from the site. Moreover, the micaceous clay matrix present in most of the sherds is similar to one of the (?local) pieces of clay. All this suggests that the pottery probably represents local production. The remaining sherds contain inclusions which are more commonly found and so difficult to source.

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THIN SECTION PETROLOGY OF LATE PREHISTORIC POTTERY FROM IRBY, WIRRAL, MERSEYSIDE

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INTRODUCTION

A small programme of petrological analysis was undertaken on a representative selection of late Prehistoric pottery and fired clay from the 1987-1996 excavations at Irby, the Wirral. Before thin sectioning, the sherds and clay samples were initially studied with the aid of a binocular microscope [x20] and reference is made to Munsell Colour Charts in the descriptions. Irby is situated in an area of Triassic formations, mostly Bunter Sandstone and Keuper Marl, covered by deposits of Boulder Clay [Geological Survey 1" Map of England Sheet No. 96].

PETROLOGY & FABRIC

[1]. I 30 Find No. 6010 Context 3403 Tr. VIII

Rim sherd

[2]. I 30 Find No. 5541 Context 3337 Tr. VIII

Decorated wall-herd

[3]. I 30 Find No. 1125 Context 0706 Tr. VI

Plain wall-herd

[4]. I 30 Find No. 5505 Context 3336 Tr. VIII

Plain wall-sherd

[5]. I 30 Find No. 5758 Context 3364 Tr. VIII

Plain wall-sherd

The five sherds in this group share a number of common fabric characteristics. The most noticeable feature in the hand-specimen is the presence of a number of light and dark coloured rock fragments set in a fairly fine-texture somewhat micaceous clay matrix. The sherds are normally light brownish-grey to dark grey in colour [10YR 5/2 - 4/1]. In thin section all of the sherds can be seen to have a fairly fine textured mica-rich clay matrix, in which the mica is composed predominantly of small shreds of muscovite. Scattered throughout the clay matrix are fragments of a range of igneous and sedimentary rocks, easily seen in the hand-specimen. In some cases these reach over 3mm across but the majority are normally well below this in size. The sedimentary rock is a fine-grained to medium-grained sandstone and is present in all of the sherds. The igneous rocks are more varied and include rhyolite, gabbro, dolerite, a weathered felspar-rich rock and lava. The quartz content tends to be sparse and mainly silt-sized or just above.

Sherds Nos. [6] - [8] also contain igneous inclusions, although in this case the fabrics are slightly more sandy than the first five sherds described above.

[6]. I 30 Find No. 2553 Context 1039 Tr. VIII

Plain wall-sherd

Soft, sandy fabric with visible scattered rock fragments, reddish-brown surfaces [5YR 5/3] and dark grey inner core [5YR 4/1]. Thin sectioning shows moderately frequent grains of quartz, together with small pieces of sandstone,

discrete grains of felspar, several fragments of a weathered igneous rock, possibly a rhyolite, and a piece of dolerite.

[7]. I 30 Find No. 7264 Context 6276 Tr. XXXVI

Plain wall-herd

Soft sandy fabric with noticeable inclusions of rock fragments, light red surfaces [2.5YR 6/6] and dark grey core [N4/]. In thin section frequent subangular grains of quartz ranging up to 0.60mm in size are set in a micaceous clay matrix. Also present are several fragments of an olivine-gabbro [some over 3mm in size] together with discrete grains of plagioclase felspar and some clinopyroxene.

[8]. I 30 Find No. 1122 Context 0725 Tr. VI

Plain wall-herd

Soft, sandy fabric, reddish-grey in colour [2.5YR - 5YR 5/2]. Thin sectioning shows that the clay matrix is dominated by frequent ill-sorted subangular quartz grains ranging up to 0.70mm in size, set in a somewhat micaceous clay matrix. Also present is a little chert, a few small discrete grains of plagioclase felspar, one or two very thin elongated voids containing a little carbonized material, iron oxide and a fragment of granitic rock.

[9]. I 30 Find No. 7300 Context 8221 Tr. XIX

Plain wall-herd

This is a soft, sandy and somewhat vesicular fabric, reddish-yellow in colour throughout [5YR 7/6 - 6/6]. Thin sectioning shows moderately frequent subangular grains of quartz, mostly under 0.40mm in size but with a few slightly larger grains. Also present are flecks of mica and some fine-grained argillaceous material. The latter are probably clay pellets rather than deliberately added "grog". In the hand-specimen this sherd is somewhat vesicular with some large

irregular-shaped holes in the surfaces, often quite deep. There seems to be no evidence that this represents calcareous material that has burnt or leached out or large fragments of stone like the material above. A few small pieces of carbonized ?wood were noted in the hand-specimen [x40], so it is perhaps possible they could represent even larger fragments. Alternatively, they could instead be the result of insufficiently wedged clay.

[10]. I 30 Find No. 9352 Context 3062 Tr. XIX

Plain wall-herd

Soft, friable fabric containing frequent elongate voids, dark grey outer surface and part core [2.5YR N4/], buff inner surface and part core [7.5YR 7/4]. Thin sectioning shows a fine-textured clay matrix which is dominated by frequent voids, mostly small and elongate. Also present are sparse silt-sized quartz grains, some flecks of mica and a little iron oxide. The shape and frequency of the voids suggest that they represent an added temper of chopped grass or chaff which was subsequently burnt out during the firing of the vessel.

[11]. I 30 Find No. 5789 Context 3345 Tr. VIII

Plain wall-herd

A fairly soft fabric, also characterized by frequent voids, light brown outer surface [7.5YR 6/4] and greyish-brown inner surface and core [10YR 5/3]. Many of the voids are small and elongate as described for No. [10], but a number are larger and more angular in shape. Under the binocular microscope [x40] one or two carbonized pieces of ?wood can be made out, and so it seems likely that it is this material that is responsible for the larger more angular voids. Thin sectioning reflects the hand-specimen study, showing many voids occurring throughout the clay matrix, both small and elongate and larger and more

angular. Also present are sparse quartz grains, generally silt-sized, flecks of mica and some iron oxide. The clay matrix appears to be slightly more micaceous than for No. [10].

[12]. I 30 Find No. 8138 Context 9637 Tr. XLI

Fired clay

Thin sectioning shows a fairly fine-textured micaceous clay matrix [mostly flakes of muscovite], containing a scatter of silt-sized quartz grains with a few slightly larger grains. Also present are a few small pieces of siltstone, some clay pellets, a little iron oxide and a few elongate voids, some of them still containing carbonized vegetation. The sparshness of the latter suggest that they almost certainly occur naturally in the clay and probably represent small pieces of root material.

[13]. I 30 Find No. 6045 Context 1109 Tr. VIII

Fired clay

Soft, crumbly sandy fabric, greyish-brown in colour throughout [10YR 5/2]. One or two carbonized pieces of ?wood were noted under the binocular microscope [x40]. Thin sectioning shows a clay matrix packed with ill-sorted subangular grains of quartz that are over 1mm across on occasion but with the majority below 0.40mm in size. Also present are some flecks of mica, a few discrete grains of felspar, chert and a little iron oxide.

[14]. I 30 Find No. 265 Context 1610 Tr. XI

Red sandstone, presumably local.

COMMENTS

The fabric similarities of the first five sherds suggest that they may well have been made in the same production region, despite the varied range of rock types present. And this may be true for sherds Nos. [6] - [8] as well. Given the wide range of igneous glacial erratics found in the local Boulder Clays of the region [Wedd *et al*, 1923], it is possible that the source for this pottery may have been fairly local.

It seems significant, for example, that the range of igneous rock fragments present in this pottery can mostly be paralleled from the catalogue of rubbing stones found at the site and attributed to glacial erratics recovered from the local boulder clays [see report on stone objects from Irby by M. Adams]. Moreover, despite the variability of igneous rocks between some of the sherds, six of the eight sherds [including the first five] also contain pieces of sandstone, a sedimentary rock commonly found in the area [Wedd *et al*, 1923]. The fine-grained micaceous clay seen in the majority of the sherds has also been noted in one of the fired clay samples, No. [12] and may represent the fine and silty clay previously noted by Poole at Irby and thought to derive from local marine deposits [1997, 82]. Many of the igneous fragments in the pottery are angular in shape and may have been crushed and added as temper by the potter. Prehistoric pottery with a similar range of crushed glacial drift material is known from Beeston Castle, where a local source was considered for the majority of the material [Royle and Woodward, 1993]. The same may well be true for the later Prehistoric pottery from Irby. It is worth noting, however, that the general fabric groupings described by Morris for Stony VCP, from the Middlewich/Nantwich area of Cheshire also include some similar rock types to those found in the Irby material, though the fabric of VCP tends to be somewhat coarser in texture than for most pottery [1985, 357-366].

Sherd Nos. [9] - [11] are more difficult to source as they contain fairly common non-plastic inclusions, though the organic tempered sherd No. [10] is reminiscent

of a vesicular sherd from Irby previously looked at by the writer [ITS Find No. 8195 Context 5341 Tr. XXIX]. While it is assumed that the fired clay samples Nos. [12] and [13] are most likely locally derived.

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