

Characterisation Studies of a Medieval Glazed Ware from Swinton, Vale of Pickering, North Yorkshire

Alan Vince

An archaeological evaluation at Swinton, near Malton in the Vale of Pickering, North Yorkshire, was conducted by Fern Archaeology. It produced a small collection of pottery, mostly of 13th-century and later date and of types well-known in the Vale of Pickering. However, one vessel stood out. This was a glazed, wheelthrown jug with a oval-sectioned handle decorated down the back with parallel grooves. This is a typical 13th to 16th-century handle form in Yorkshire and suggested that the jug was a relatively-local product. However, the fabric was extremely similar visually to vessels from south Lincolnshire, Northamptonshire and Cambridgeshire, such as Bourne ware, Baston ware, Lyveden-Stanion ware and others whose sources have not yet been located. Similar vessels have been found on excavations in East Yorkshire, at sites such as Beverley they have been identified as Lyveden ware, because of the distinctive white applied decoration, the abundant ooliths visible in the fabric at x20 magnification and the fact that they were not thrown on a wheel.

There is therefore known or surmised trade in pottery from Cambridgeshire to Yorkshire and it would not be impossible for a vessel to have been imported to Kingston-upon-Hull or Hartlepool and then carried overland to Swinton, which lies on one of the main routeways across the Vale of Pickering, skirting the marshy ground in the centre of the valley.

Thin Section Analysis

A thin section was produced by Steve Caldwell, University of Manchester, and stained using Dickson's method (Dickson 1965).

Description

The following inclusion types were noted:

- Sandstone. Abundant rounded fragments of sandstone up to 1.0mm across. The rock is composed of well-sorted angular quartz c.0.1-0.2mm across and sponge spicules in a matrix of cryptocrystalline silica and fine-grained non-ferroan calcite.
- Oolitic limestone. Rare fragments of oolitic limestone and moderate individual ooids. The fragments have all been affected by heat and details of the structure are therefore difficult to discern. However, it seems that rounded dark brown grains are present both within the ooid structure and in the groundmass. It also seems that both the ooids and the groundmass are composed of micrite of similar texture.

The Alan Vince Archaeology Consultancy, 25 West Parade, Lincoln, LN1 1NW
<http://www.postex.demon.co.uk/index.html>
A copy of this report is archived online at
<http://www.avac.uklinux.net/potcat/pdfs/avac2007091.pdf>

- Chert. Sparse angular fragments up to 1.0mm long.
- Rounded quartz. Sparse grains up to 0.5mm across. The outlines (well-rounded but with low sphericity) suggests a lower Cretaceous source.
- Clay/iron. Sparse dull dark brown grains often with a lenticular outline.
- Gypsum. Sparse fragments c.1.0mm across composed of fibrous gypsum, probably selenite.
- Organics. Sparse long thin voids containing carbonised ash.

The groundmass consists of optically anisotropic baked clay minerals with abundant rounded dark brown grains up to 0.05mm across, rare angular quartz and rare muscovite.

Interpretation

Similar oolitic limestones occur in the Jurassic rocks from the North Yorkshire Moors down to Dorset. The sandstone, however, is almost certainly one of the Upper Jurassic calcareous grits which only outcrop north of Market Weighton. This, therefore, indicates a fairly local source for the vessel and if so then the oolitic limestone is probably the Coralline Oolite ({Kent 1980 #44823}, 70-75). There are several oolite beds within this formation and it is not possible to identify which might be present in this sample. The same formation includes the Birdsall Calcareous Grit and the Middle Calcareous Grit, both of which contain beds of oolitic limestone within them.

The character of the clay itself is typical of the Jurassic but cannot be localised. Examples with this high degree of iron, probably of bacterial origin, occur in the Upper Lias of the Lincoln area as well as in the Upper Jurassic clays of Cambridgeshire. The probable selenite suggests that the clay itself might be of Upper Jurassic age, since selenite is present in weathered Ampthill Clay in Cambridgeshire and in East Yorkshire and is therefore quite likely to be present in clays of the same age from the Vale of Pickering.

Finally, the well-rounded quartz grains suggest the presence of material of Lower Cretaceous origin. This too cannot be used to localise the source on a national scale, as lower Cretaceous deposits containing similar quartz outcrop in the southern Wolds close to the outcrop of the Cave Oolite and detrital grains occur in Quaternary sands in Cambridgeshire, where they sometimes occur alongside oolitic limestone (although this association is rare in that county, because of the wide Jurassic outcrop which ensures that most oolitic limestone occurs well to the west of these Quaternary sands). However, within the Vale of Pickering, such sand only occurs on the southern side of the valley. The only area where Coralline Oolite and Lower Cretaceous deposits outcrop together is in the southwest corner of the Vale of Pickering. The lack of chalk, calcite or flint precludes a source on the north scarp of the

chalk itself, or at its base. This limits the potential source to the area south of Malton: Scagglethorpe; Settrington; North Grimston and Birdsall.

Chemical Analysis

A sample of the vessel was prepared and submitted to Royal Holloway College, London, where Inductively Coupled Plasma Spectroscopy was used to determine the frequency of a range of major and trace elements (App 1, major elements expressed as percent oxides, and App 2, trace elements measured as parts per million).

The silica content was estimated at 61.91% by subtracting the total measured oxides from 100%.

The data were normalised to aluminium and compared with a range of samples from the Vale of Pickering and elsewhere.

Vale of Pickering

The ICPS data were compared with those from three known Vale of Pickering ceramic products: Calcite-tempered wares from West Heslerton; black handmade wares of similar fabric but without the calcite temper (BLSF) also from West Heslerton and Staxton ware from a production site at Staxton. The sample has similarities with all three groups but can be distinguished from all three:

- Higher magnesium, neodymium, ytterbium than any of the three
- Lower chromium, vanadium and zirconium than any of the three

Factor analysis of the non-mobile elements found four factors. The first factor distinguishes the sample from Staxton ware; the second distinguishes it from both Staxton ware and the BLSF group; the third again distinguishes it from the Staxton ware and the fourth from both the calcite-gritted and BLSF groups. The fourth factor is determined mainly by two rare earth elements, lanthanum and samarium but in this case it appears to be the neodymium and magnesium values which separate the two wares.

The sample's ICPS data were then compared with that from other wares from West Heslerton, of less certain local origin. Most of these could be easily distinguished using factor analysis but two remained: early Anglo-Saxon sandstone-sand-tempered ware and a late Roman sand-tempered ware also containing quartz derived from sandstones. It is likely that the sandstones in these cases are of Carboniferous age and that the wares were produced in the Vale of York rather than the Vale of Pickering. However, factor analysis of just these three wares distinguished the Swinton sample from the remainder.

The ICPS data were also compared with those from samples of Roman date from Lease Rigg on the North Yorkshire Moors, which were possibly produced locally or imported from a

source further to the south, such as Malton or York. These samples too failed to match the Swinton data.

Melton, East Yorkshire

The ICPS data were then compared with a series of samples of wares from Melton, situated on the north side of the Humber in an area which matches that suggested by the petrology (with the probable exception of the sandstone).

All of the wares could be distinguished from the Swinton sample with ease except for two samples of oxidized Romano-British fineware, of unknown manufacture but distinguished from the North Lincolnshire Roxby-type wares which form the majority of the oxidized ware on the site.

Cambridgeshire

Finally, the ICPS data were compared with those from samples from Cambridgeshire. Out of over 350 samples, 106 give a good match. These include Colne ware, Medieval Ely ware, St Neots-type ware and Lyveden-Stanion ware. A factor analysis of this smaller group allows the St Neots-type ware to be discounted but the Swinton sample falls within the ranges of all the other groups. However, ultimately the chromium and zirconium values distinguish the Swinton sample from all the rest.

Conclusion

Thin section analysis of the Swinton jug shows that it contains a distinctive mixed temper which points to a source in a limited area of the southeast corner of the Vale of Pickering. However, if the vessel was made so close to Swinton it is remarkable that this fabric is so uncommon in the Vale of Pickering that this is the first example to come to the author's attention. This may, however, be because for some reason the production site was short-lived. Nevertheless, it would be remarkable if such vessels, if made in that area, were not present in collections from Wharram Percy and Malton.

The other option, that the vessel was an import to the area, seems to be ruled out by the lack of the distinctive sandstone, containing sponge spicules, in either of the two areas which otherwise might have been considered as possible source areas: the Yorkshire Wolds to the south of Market Weighton or Cambridgeshire. Chemical analysis indicates that the sample has remarkably low chromium, zirconium and vanadium values which distinguish it from most of the possible comparative material locally and from the Wolds and Cambridgeshire. Obtaining samples of "Lyveden-Stanion" ware from Beverley and Hedon for comparison should therefore be a high priority.

Bibliography

Dickson, J. A. D. (1965) "A modified staining technique for carbonates in thin section." *Nature*, 205, 587

Hamerow, H., Hollevoet, Y., and Vince, A. (1994) "Migration Period Settlements and 'Anglo-Saxon' Pottery from Flanders." *Medieval Archaeology*, XXXVIII, 1-18