Characterisation Studies of two Anglo-Scandinavian Pottery Vessels from Melton, East Yorkshire (OSA04 EX03)

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Excavations on the A64 road widening at Melton, East Yorkshire, produced a sequence of land use stretching from the Bronze Age to the medieval period. However, the Anglo-Scandinavian period was very poorly represented in this sequence, possibly because occupation was nucleated and centred on the present day villages but also possibly because pottery was scarce during the later 9th to mid 11th centuries in this part of East Yorkshire. Excavations at the nearby site of Elloughton revealed no Artefactual evidence for Anglo-Saxon settlement but C14 dating of an oven base indicated that it dated to the mid Saxon or Anglo-Scandinavian period.

Two sherds from shell-tempered vessels were identified visually by Jane Young as being of Lincoln Late Saxon Shelly ware (Young and Vince 2006, 56-62. Code LSH). This ware appears to have been produced from the late 9th to the late 10th centuries but is most common in mid 10th century deposits.

Five fabrics have been defined for LSH.

Fabric	Mudstone (laminated clay pellets)	Bivalve shell	Rounded Quartz	Chert	Fine-grained sandstone	Groundmass
A	Moderate	Moderate to Abundant	Sparse			Sparse muscovite and abundant dark brown grains
B	Sparse	Moderate to abundant	Sparse			
C		Sparse to moderate	Moderate	Sparse	Sparse	
E	Rare	Moderate to abundant	Sparse	Sparse	Sparse	
F		Sparse				Calcareous

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http://www.postex.demon.co.uk/index.html

A copy of this report is archived online at
http://www.avac.uklinux.net/potcat/pdfs/avac2006152.pdf

Thin Section analysis

The two thin sections were examined and compared with reference material from Lincoln. Both contain mudstone fragments (moderate in V3816 and sparse in V3817) which have a dark brown colour. In some cases this can be seen to be due to abundant fine dark brown grains in a groundmass of similar colour and texture to the groundmass. Both also contain rounded quartz but no chert or sandstone (sparse in both cases, but more common in V3817). On this basis, both samples are confirmed as being Lincoln Late Saxon Shelly ware and V3816 is identified as Fabric A or B and V3817 as Fabric C.

Chemical analysis

Subsamples for chemical analysis were taken from each sherd. The outer surfaces were mechanically removed and the remaining pellet was crushed to a fine power and submitted to Royal Holloway College, London, where their chemical composition was determined using Inductively-Coupled Plasma Spectroscopy under the supervision of Dr J N Walsh.

A range of major elements was measured and expressed as percent oxides (App 1) and a range of minor elements was measured and expressed in parts per million (App 2). Silica was estimated by subtraction of the sum of measured oxides from 100% and the data were then normalised to aluminium and compared with various other datasets (Table 1).

Table 1

locality	Sitecode	Comments	Ware	Total
Beverley	bll79	Lurk Lane. Watkins 1991	LSH	1
Flixborough	flx89	Flixborough	LKT	1
Lincoln	flax45-7	Danesgate	LG	6
	LDG03	Danesgate	LKT and SNLS	11
	lin73bi	Silver Street, Miles and Wacher 1989;Woods 1989;Young 1989	LKT	6
Market Weighton	OSA06EV15	Market Weighton	LSH	1

Factor analysis of this dataset was carried out and five factors with eigenvalues greater than 1.0 were found. A bi-plot of the first two factors (Fig 1) shows that Factor 1 does not distinguish any of the groups but Factor 2 separates the samples into three groups. The first consists of the samples from Flixborough, Beverley and Market Weighton, together with one waster from Danesgate, Lincoln. However, an examination of the data indicates that the main elements responsible for separating this group are mobile: phosphorous, calcite, strontium and manganese, together with low values for titanium. Titanium is probably responsible for separating the two groups of sandy samples, also produced at Lincoln, probably as a result of detrital titanium-rich grains in their sands.

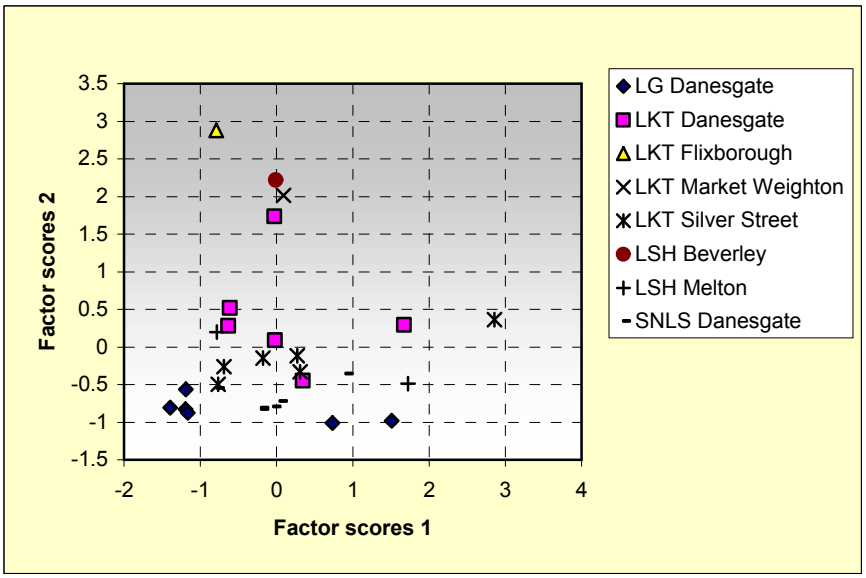

Figure 1

The analysis was then re-run omitting these mobile elements and in this analysis five factors were found. A plot of the first two factors (Fig 2) indicates that one of the Melton samples, Fabric B, has a higher F2 score than any of the Lincoln samples, but comparable with that found in samples from Flixborough, Beverley and Market Weighton. High F2 scores are due to high weightings for a range of elements including barium, cobalt, copper, manganese and zinc. Of these elements, only barium is particularly high in the Melton sample, and is actually lower than in one of the Lincoln samples.

This confirms that the Melton sherds are indeed Lincoln projects but that the difference in production site between LSH and LKT is probably not reflected in chemical composition.

Conclusions

The two sherds of shelly ware from Melton are identified as being LSH fabrics B and C, produced in Lincoln, mainly in the mid to late 10th centuries. They contain dark brown mudstone fragments absent from Anglo-Scandinavian pottery produced within the lower city of Lincoln, at Silver Street and Danesgate. This mudstone is found, however, in pottery produced in the later 10th century outside the lower city defenses, although no waste from production sites there has yet been analysed. The lack of difference between the Melton samples and those produced within the lower city suggests that it will not be possible to use chemical analysis to distinguish the products of these areas, although this difference is visible in thin section.

Bibliography

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Appendix 1

TSNO	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO
V3816	19.18	7.47	1.4	4.32	0.24	2.06	0.77	0.65	0.047
V3817	21.26	7.49	0.95	6.35	0.21	2.11	0.86	0.43	0.055

Appendix 2

TSNO	Ba	Cr	Cu	Li	Ni	Sc	Sr	V	Y	Zr*	La	Ce	Nd	Sm	Eu	Dy	Yb	Pb	Zn	Co
V3816	826	113	35	68	60	18	123	111	17	71	42	70	42	7	1	3	2	20	101	17
V3817	539	114	35	67	67	20	165	126	37	90	53	111	56	12	2	7	4	20	113	18