

A characterisation study of selected medieval wares from the Bacchus site, Newcastle upon Tyne

Alan Vince

Samples of four vessels from the Bacchus site at Newcastle upon Tyne were selected for study as part of a wider survey of late Saxon/early medieval pottery in the northeast of England and imported medieval pottery from sites bordering the North Sea.

Two of these samples were the only sherds of pottery recovered from any feature pre-dating the 'plough soil' horizon which underlay later medieval occupation levels. As such they probably date to the later 12th or early 13th century at the latest, since that appears to be the date of the latest pottery in that horizon. The sherds are handmade vessels with a coarse quartzose gravel temper. Similar vessels have been found at Prudhoe Castle (Whittingham forthcoming) and at Saddler Street, Durham (Carver 1979).

A third sample was taken from a light-bodied gravel-tempered ware with roller-stamped diamond rouletting on the rim. This vessel was similar in texture, form and decoration to those from the late 12th-century Dogbank kiln in Newcastle but the colour suggested a separate source, possibly using Coal Measure white-firing clays.

The last sample was a wheelthrown unglazed greyware. Sherds of similar type have recently been analysed by the author from Jarrow (Vince forthcoming). At that site they were initially thought to be East Anglian and of 11th/12th century date. However, the analyses suggested a continental source and it was suggested that they might be a Flemish greyware, contemporary with the well-known glazed ware industry with known kilns at Bruges and Aardenburg, which seems to have started in the later 12th century and reached its peak in the later 13th and early 14th centuries, after which time the Rhenish stoneware industry and the Dutch Red Earthenware industries seem to have brought about its decline.

Subsequently, a chemical analysis of similar vessels from Perth, Newcastle and Jutland by Chenery and Hall suggested a source in Jutland. However, that study did not include reference material from either Flanders or further north in the Rhine delta (Chenery & Hall 2002). This leaves open the possibility of a more southern source.

Petrological analysis

Thin-sections of all four samples were prepared at the University of Manchester and stained using Dickson's method. Comparative material from Prudhoe Castle and Jarrow were also examined (Table 1). Comparative sections from the Dogbank kiln were consulted at Tyne and Wear Museum service and are held at the Jesmond Cemetery lodge.

Chemical analysis

Chemical analyses of all four samples were carried out at Royal Holloway College, London, using ICS-AES. A range of major, minor and trace elements were studied. The major elements were measured as percentage oxides and the remaining elements as parts per million. This data was compared with samples from Prudhoe Castle, Jarrow and a range of wares for which a Jutish or Low Countries source has been mooted.

Two separate analyses were carried out, the first on wares made in the north-east of England and the second on the Flemish/Jutish/Low Countries wares.

North-East England

The Bacchus samples were compared with a range of locally-produced wares from Prudhoe Castle. These wares were assigned by Whittingham to 7 fabrics which can in turn be grouped into four ware types: the so-called Permian Yellow Sand ware (Fabrics 2, 3 and 11); gritty ware (Fabric 4, subdivided into white-firing and red-firing); glazed red earthenwares (Fabrics 5, 6 and 11) and Coal Measure Whiteware (Fabric 7).

TSNO	SITECODE	CONTEXT	REFNO	ATTR	SUBFABRIC	FORM	DESCRIPTIO
V1298	PC	PC1104			2 PRUDHOE 2	JAR	SOOTED EXT
V1299	PC	PC411 D6			2 PRUDHOE 2	JAR	SOOTED EXT
V1300	PC	PC1126			2 PRUDHOE 2	JAR	SOOTED EXT
V1301	PC	PC1100			3 PRUDHOE 3	JAR	SOOTED EXT
V1302	PC	PC76 430			3 PRUDHOE 3	JAR	SOOTED EXT
V1303	PC	PC1240			3 PRUDHOE 3	JAR	SOOTED EXT
V1304	PC	PC1057			3 PRUDHOE 3	JAR	SOOTED EXT
V1305	PC	PC1100			3 PRUDHOE 3	JAR	SOOTED EXT
V1306	PC	PC411 A1	POT 11		3 PRUDHOE 3	JAR	SOOTED EXT
V1307	PC	PC74	184		3 PRUDHOE 3	JAR	
V1308	PC	PC1043	P28		4 PRUDHOE 4	JAR	SOOTED EXT
V1309	PC	PC1296	P55		PRUDHOE 4 RED 4 FIRING	JAR	SOOTED EXT
V1310	PC	PC1172	P66		PRUDHOE 4 RED 4 FIRING	JAR	SOOTED EXT
V1311	PC	PC76 107	P194		5 PRUDHOE 5	-	RED SLIPPED EXT
V1312	PC	PC76 288	P194		5 PRUDHOE 5	-	RED SLIPPED EXT
V1314	PC	???742			5 PRUDHOE 5	-	GLAZE SPOT EXT
V1315	PC	PC1628	P224		5 PRUDHOE 5	-	
V1316	PC	PC1744	P224		5 PRUDHOE 5	-	

V1317	PC	PC1613		6 PRUDHOE 6	-	GLAZE SPOT EXT;SOOTED EXT
V1318	PC	PC1612		6 PRUDHOE 6	-	GLAZE SPOT EXT
V1319	PC	PC1130	P192	7 PRUDHOE 7	JAR	
V1320	PC	PC1120	P60	7 PRUDHOE 7	JAR	
V1321	PC	PC1120	P2	7 PRUDHOE 7	JAR	
V1322	PC	PC1120	P2	7 PRUDHOE 7	JAR	
V1323	PC		C20	11 PRUDHOE 11	JAR	SOOTED EXT
V1324	PC	PC76 449	R97	11 PRUDHOE 11	JAR	
V1325	PC	PC1272		11 PRUDHOE 11	JAR	SOOTED EXT
V1623	hb02	6110		8 DURCW	JAR	RSD DIAMONDS ON RIM
V1624	hb02	6118		12 DURC	JAR	HM;REDUCED
V1625	hb02	6118		12 DURC	JAR	HM;OXID THROUGHOUT

Principal Components Analysis of the data (Figs 1 and 2) indicates two clusters, one containing the Coal Measure Whiteware samples (Prudhoe Fabric 7) and the other containing the remaining samples, including those from the Bacchus site. All three samples of Prudhoe Fabric 2 lie at the same end of the main cluster but the remaining Prudhoe fabrics, and the Bacchus samples, cannot be separated. There are two outliers: V1309 and V1325. These appear to be isolated because of high values for MnO and Co in the first case and for Ba, Ni, Y, La, Ce, Nd, Sm, Eu, Dy and Yb in the second. Abberant high values for single elements probably indicate the presence of a single inclusion rich in the element concerned and this may be the correct interpretation of the V1309 result. That for V1325 is rich in a range of Rare Earth elements (REEs). Enrichment of REEs is often a result of adsorption by clay minerals, especially in anaerobic conditions but whether this is the case in this instance is not known. Neither is it possible to say whether the sample came from a vessel made from a REE-rich clay or whether those elements were adsorbed after burial.

The chemical analysis does show conclusively that the light-firing roller-stamped vessel is not made from a Coal Measure Whiteware clay and also indicates that all the remaining wares were made from chemically similar raw materials. It is not yet clear what the geographic extent of the outcrop of these materials might be, but it has been suggested that the Dogbank wares were made from Quaternary lake sediments filling the Tyne valley and one might expect that this sediment would have similar composition wherever it was deposited since clay and silt-sized particles are likely to have been thoroughly mixed in the lake waters before deposition.

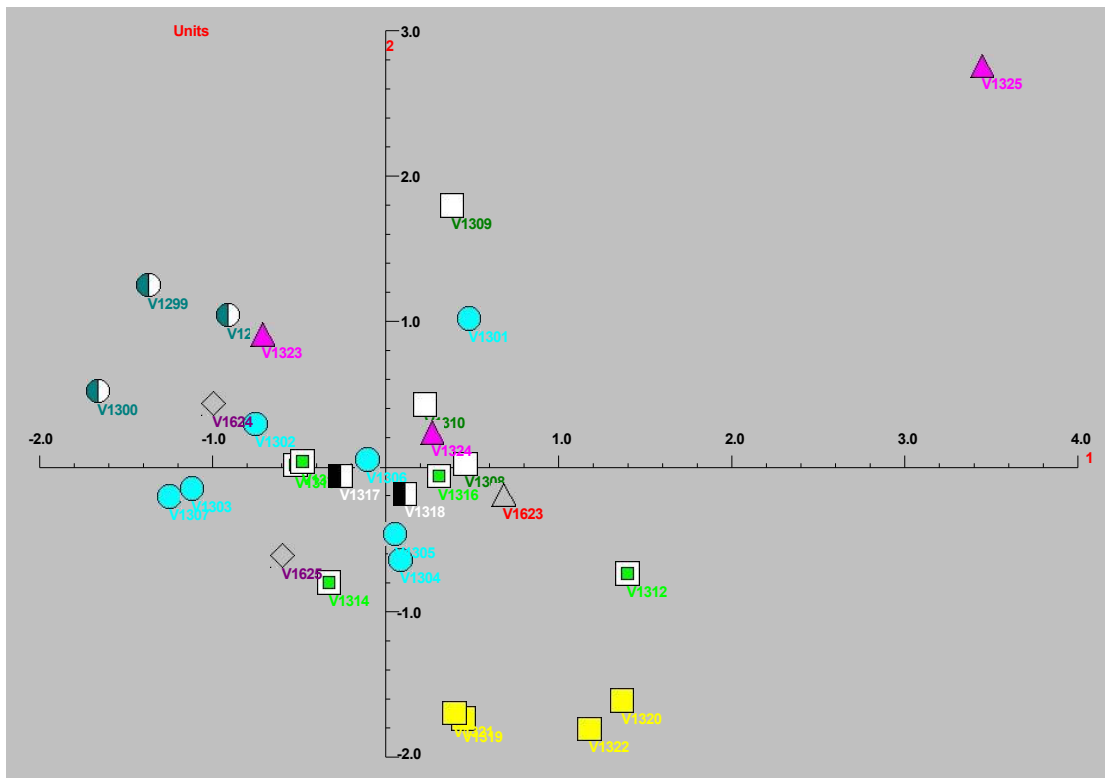


Figure 1

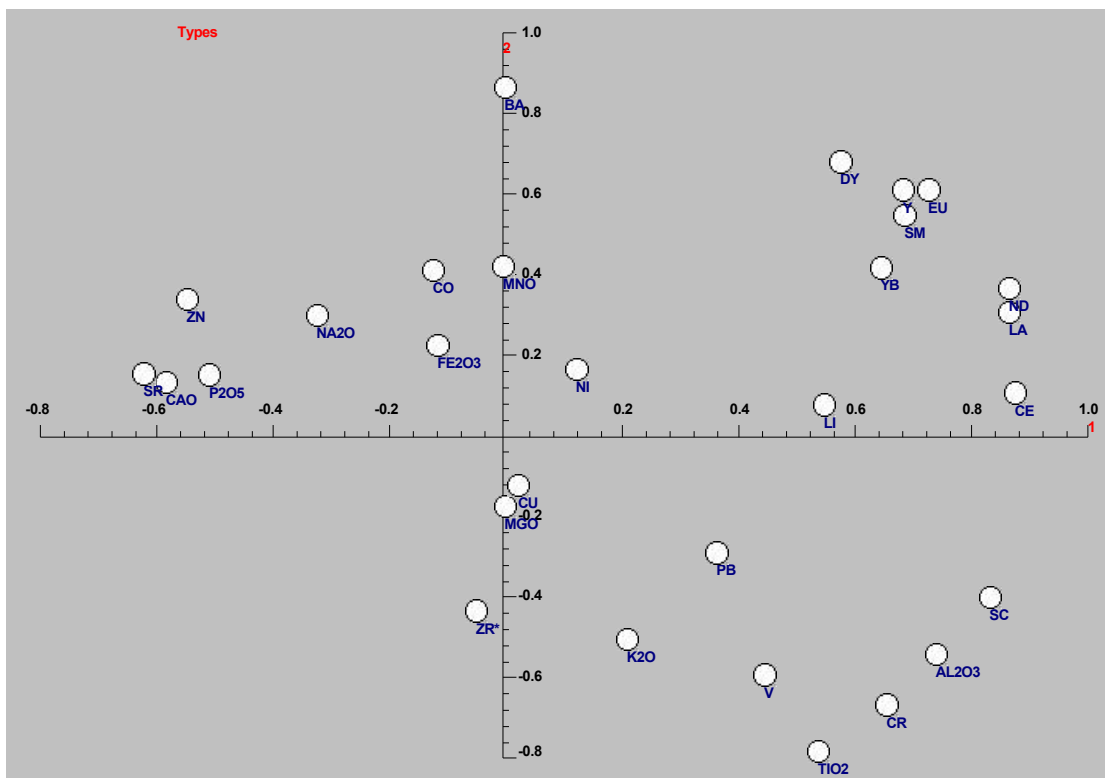


Figure 2

Jutish and Flemish wares

The results of the analysis of the wheelthrown greyware sherd from the Bacchus site were compared with a series of Jutish and Flemish samples:

- Flemish floor tiles from Launceston Castle, Kingston-upon-Hull and Barton upon Humber. These were divided into two groups on the basis of their chemical composition. A small group compared well with Flemish glazed pottery but the larger group is chemically distinct.
- Flemish shell-tempered wares from sites in Kent and Flanders
- Glazed red earthenwares from Bruges, Ieper and Aardenburg
- Jutish ware from Viborg Castle (a stove tile) and Gateshead (a handmade, burnished jug)
- Jutish Germanic Iron Age wares from various sites in Jutland
- Wheelthrown greywares from Jarrow (Jarrow Fabric D3)

A PCA plot of PC1 against PC2 shows that these samples fall into four clusters (Figs 3 and 4). The Jutish Germanic Iron Age samples overlap with the glazed red earthenwares in this plot but a second plot, of PC3 versus PC1 shows that they can be clearly separated. The main group of Flemish tiles forms a separate cluster, as do the Flemish shelly wares.

The fourth cluster, however, consists of the Flemish red earthenwares, the two Jarrow samples and the Bacchus sample. However, in addition, the Viborg Castle tile falls into this group whereas the Gateshead jug is ungrouped. Examination of other plots (e.g. PC4 against PC1 and PC2 against PC3) suggests that both of these Jutish ware samples belong to a fifth group which has chemical differences from all the other four groups.

Thus, this analysis seems to suggest that the similarity of the Jutish ware and wheelthrown greyware sherds in this analysis, and probably also in that of Chenery and Hall, is illusory and that the wheelthrown greywares are indeed of Flemish origin and made from similar raw materials to those used for Bruges and Aardenburg glazed wares.

Bibliography

Carver, M. O. H. (1979) "Three Saxo-Norman tenements in Durham City." *Medieval Archaeol*, 1-80

Vince, A. (forthcoming) "Petrological Analysis of selected sherds from Jarrow and Monkwearmouth." in P. R. Cramp, ed., *Excavations at Jarrow and Monkwearmouth*.

Whittingham, L. (forthcoming) "The Medieval Pottery from Prudhoe Castle." in L. Keene, ed., *Excavations at Prudhoe Castle, Tyne and Wear*.

Appendix

a) Major elements (percent oxides)

TSNO	cname	Form1	Description	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO
V1625	DURC	JAR	HM;OXID THROUGHOUT	19.22	5.52	0.66	0.79	0.31	2.42	0.82	1.12	0.05
V1624	DURC	JAR	HM;REDUCED	17.36	6.6	0.84	0.73	0.27	2.13	0.69	2.34	0.069
V1623	DURCW	JAR	RSD DIAMONDS ON RIM	22.36	4.26	1.13	0.55	0.3	2.32	0.85	0.13	0.223
V1622	LCGR	JAR		13.81	5.16	1.42	0.47	0.27	2.51	0.7	0.55	0.013

B) Minor and trace elements (ppm)

.TSNO	Ba	Co	Cr	Cu	Li	Ni	Sc	Sr	V	Y	Zn	Zr*	La	Ce	Nd	Sm	Eu	Dy	Yb	Pb
V1625	619	13	124	17	87	49	15	103	89	18	76	65	41	77	42	6.6	1.2	3.2	1.7	62
V1624	800	19	112	16	63	49	14	158	94	20	105	45	50	86	50	8.2	1.6	3.6	1.5	82
V1623	791	23	136	17	166	49	21	113	111	24	109	66	57	107	58	9.8	2.1	5.2	2.1	129
V1622	393	14	108	26	42	32	15	80	149	16	115	81	34	66	34	4.8	0.8	2.6	1.6	53