

Characterisation of fine whitewares from Wetherby, West Yorkshire

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Several sherds of extremely fine-textured white-firing pottery were recovered from the Wetherby excavations. Unless there is some visual clue to their identity, such as a distinctive form, glaze or decoration, it is often impossible to determine their identity. Chemical analysis is beginning to have an impact on this problem and samples of three such vessels from the Wetherby excavations were analysed using Inductively Coupled Plasma Spectroscopy.

Chemical analysis

Samples of two vessels visually identified as Stamford ware (1980) and one sherd visually identified as a Surrey-Hampshire Border ware (1992) were prepared for chemical analysis. An offcut of each sherd was taken and the outer surfaces (original and broken) were mechanically removed. The remaining fragment was then crushed to a fine powder and submitted to Royal Holloway College, London, where Inductively Coupled Plasma Spectroscopic analysis was carried out under the supervision of Dr J N Walsh, Department of Geology.

A range of major, minor and trace elements was measured. The major elements were measured as percent oxides (Appendix 1) and the minor elements in parts per million (Appendix 2).

An estimate of the silica content was made by subtracting the sum of the oxides from 100%. This gave values of 75% for the Border ware and 63% for each of the Stamford wares. Fig 1 shows the estimated silica content for comparative fine whitewares and indicates that there is a difference between the values found for Surrey products (Border ware and Tudor Green ware) and those found for Stamford wares but that French whitewares have a similar variation, with early Rouen products having similar high silica contents to the Surrey wares and Saintonge and later Rouen wares having lower silica contents, comparable with Stamford ware. On silica content alone, the Wetherby samples are rather different from the supposed comparanda.

Factor analysis was then carried out on the data, omitting elements which might be affected by burial conditions (calcium, phosphorus, barium, strontium and the rare earth elements). The analysis revealed three significant factors, F1 to F3, accounting for 55% of the variation in the data in total.

A plot of F1 against F2 (Fig 2) showed that one of the Wetherby Stamford ware samples has a similar high F2, negative F1 score to that of the comparative Stamford ware samples (Fig 1) whilst the other has scores which are similar to those of Saintonge ware. The Wetherby Border ware sample has a high F1 score and negative F2 score, both of which show that it is more similar to other Surrey samples (all from the production site at Farnborough Hill) than to vessels from the lower Seine valley. Unfortunately, no samples of Beauvais ware have yet been analysed and so this study cannot distinguish between Surrey and Beauvais vessels.

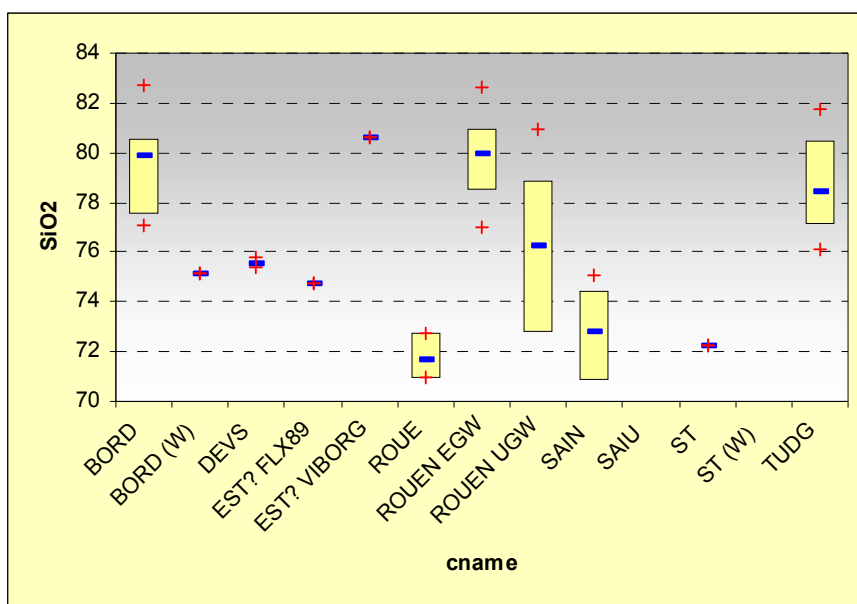


Figure 1

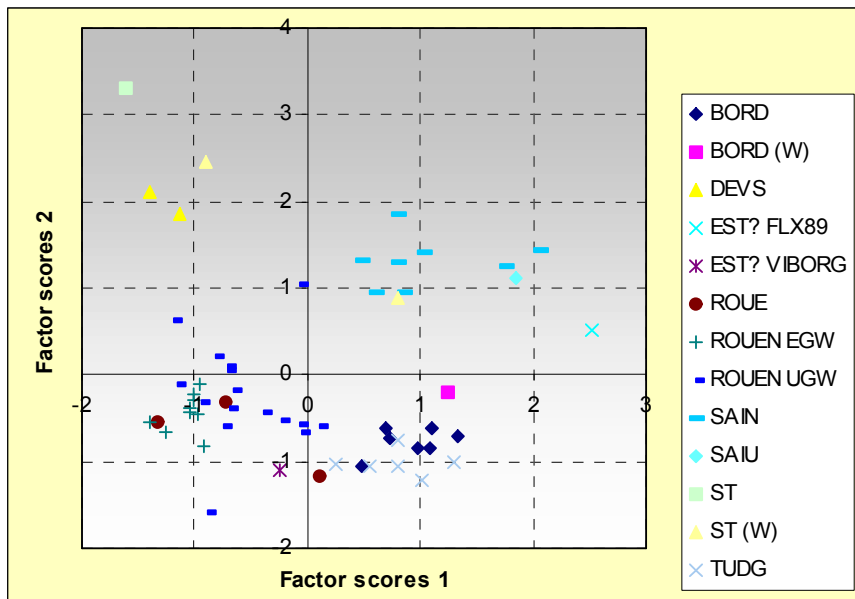


Figure 2

The F3 score for the Wetherby Border ware sample is consistent with a Surrey origin but those for the two Wetherby Stamford ware sherds are equivocal. In the first case (where the F1 and F2 scores suggest a Saintonge origin) the F3 scores for Saintonge ware overlap with Surrey products (but not with the comparative Stamford ware samples). This sample, therefore, remains a likely Saintonge product, at least from its chemical composition. In the second case, where the F1/F2 scores showed a similarity with Stamford ware, the F3 score is much lower than that of the 3 comparative samples, placing the sample in a group with the lower Seine valley products.

Conclusions

The chemical analysis of the supposed Border ware vessel is consistent with an origin in the Surrey-Hampshire border and, if so, the thinness of the vessel walls suggests it is a 16th-century rather than a 17th-century date. However, comparative data from Beauvais is required before a French source can be ruled out.

For the putative Stamford ware sherds there is an even clearer need for properly-sourced comparative data (the three comparative samples come from Viborg, in Jutland, and Durham!). The identity of both vessels is therefore suspect but as further data is collected the analyses can be re-examined and hopefully eventually a positive identification can be made.

Bibliography

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