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SERIES/No

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AUTHOR

Dr D F Williams Feb 1978

TITLE

Petrological analysis of some
pottery from Hampshire

Most pottery vessels have a comparatively short life, for they are easily broken and readily replaced. However, once reduced to sherd size and discarded, pottery does not usually decay in the ground, unlike many other materials, and potsherds are found on the majority of excavations in great abundance. Pottery styles can be seen to vary considerably over a period of time and are often the key to a site's dating, so recognition of different pottery types, how they were made and where they came from is of considerable importance in the identification and interpretation of archaeological sites.

Analysis of pottery involves two main lines of enquiry. One requires the study of vessel types and how their forms can be seen to develop over the years: this is termed typological analysis and consists chiefly of the detailed study of the rim forms and decorative features of vessels. The other line of enquiry involves the examination of pottery fabrics: the aim here being to determine the raw materials and processes used in the manufacture of pottery. The results of both typological and fabric analysis can then be combined to establish definitive pottery styles that will provide useful information on origins and dating.

Two of the methods commonly used for fabric analysis are thin sectioning and heavy mineral analysis. These petrological techniques are capable of identifying minerals and rock fragments present in pottery, thereby providing information on sources of raw materials (indicating likely production areas), classification of fabrics and firing temperatures achieved.

The potential of both methods is best illustrated when dealing with minerals or fragments of rocks which have a limited geological distribution. Thus thin sectioning of a grass-marked sherd from a late 12th century context at Southampton revealed inclusions identical to those of the gabbroic clay which outcrops at the Lizard Head in Cornwall¹. This would seem to suggest a Cornish origin for the pot, which adds to our knowledge of mediaeval exports at this time.

Heavy mineral analysis is employed primarily on sandy fabrics, classification being based on the wide variety of heavy minerals (such as zircon, tourmaline, rutile, garnet) which are found in sands, and therefore also in sand tempered pottery. Distinctive combinations of these can often be assigned to a specific geological source. When applied to BB1² pottery from the Roman fort at Bitterne, the uncommon tourmaline rich assemblage obtained by this method agreed well with similar analyses of BB1 vessels shown to have been made in the Wareham-Poole Harbour area of Dorset³. Moreover, heavy mineral analysis of wheel-turned imitation BB1 vessels from late 4th century layers at the site showed not only quite different assemblages to those of the handmade BB1 types, but also to each other. The appearance of these imitation BB1 forms at Clausentum coincides with a drop off in the popular Dorset BB1 types, suggesting that not only were the latter difficult to obtain at this date, hence the need for similar wares, but also that the replacement vessels were coming from a number of centres.

Petrological analysis is also valuable for characterization when dealing with aplastic inclusions which have a wide distribution, for pots made in a similar way from the same materials will appear alike under the microscope. An example of this is shown from the

heavy mineral analysis on Saxo-Norman glazed wares from Winchester, which showed that the fabric was quite different from that of a Stamford ware sherd, and that the former ware was probably made at two production centres, most likely situated in the Winchester area, although the minerals present were not diagnostic enough to suggest possible localities.⁴

Recent petrological work in Hampshire has included a detailed fabric analysis of Iron Age pottery from Winklebury Hillfort⁵, characterization of New Forest and other Roman wares from Porchester Castle by heavy mineral analysis⁶ and the study of local and imported pottery from Saxon Hamwih (Southampton)⁷.

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