ANALYSIS OF ANCIENT POTTERY FROM THE PALATINE HILL IN ROME

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A program of compositional analysis using neutron activation has been performed on samples of Roman fineware from the Palatine East excavations in Rome at the University of Illinois' TRIGA reactor. These experiments are ultimately intended to assist the authors in advancing the understanding of the organization of pottery production and distribution in central Italy during the late Roman imperial period (4th-5th c. AD). The objectives of this paper are 1) to present an archaeological background of two regionally-produced finewares, 2) to discuss the methods of sampling, irradiation and data analyses, and 3) to demonstrate the preliminary results of our investigation, which included the analyses of Plio-Pleistocene clays from the Janiculum Hill in Rome.

While students of the Roman economy have made considerable progress in reconstructing patterns in the long-distance supply of foodstuffs, building material, and craft goods to the city of Rome, we know relatively little about the role played by the city's immediate hinterland in its sustenance. A more balanced picture of Rome's economic relations is essential if we are to attain a clearer understanding of the city's commercial impact on its region and on the Empire as a whole. To partially address this problem a project involving the neutron activation analysis (NAA) of regionally-produced pottery recovered in excavations in the center of Rome was initiated.

The excavations in question are those carried out since 1988 by a joint team of the Soprintendenza Archeologica di Roma/American Academy of Rome on the site of a late imperial domus (town house) located on the north-east slope of the Palatine Hill. This work has recovered several large deposits of pottery that were dumped into the structure after its abandonment in a series of massive fills created between the early fourth and late fifth or early sixth centuries AD. The overall program of NAA has focused on five distinct classes of fine-bodied tableware thought to be of local or regional origin on the basis of several considerations, including the appearance of their fabric, their abundance, and the distribution of their find spots. The aims of this overall work are to identify distinct compositional groups within the five classes of pottery, and to identify, to the extent possible, the origins of these groups through compositional matches with clay sources and ceramics of known provenience either from Rome or elsewhere in west-central Italy. This paper will communicate the preliminary results obtained from the analysis of two of these five pottery classes.

The first of these classes (40 samples), termed undecorated fineware, is by far the most abundant of the various classes of regionally-produced tableware recovered at the site. It
appears to have been manufactured using the moderately to highly-calcareous clays of the
Plio-Pleistocene marine transgression which outcrop in many parts of west-central Italy,
including several outcrops in the immediate environs of Rome. Among the forms attested in
the archaeological record are various basins, jars, and jugs/pitchers. All appear to have been
manufactured rapidly, with little or no recourse to secondary forming operations or finishing
of surfaces. The second class of pottery (29 samples), termed color-coat fineware, is identical
in fabric, and presumably technology, save that vessel surfaces are coated with an uneven,
matte reddish to grayish slip. The range of forms attested is similar to that for the
undecorated variety, with the addition of bowls, cups, beakers, and other specialized vessels.
In this case there is extensive use of secondary forming operations, such as the turning of
bases and the application of handles. Not infrequently, the surfaces are embellished through
incision, the creation of decorative patterns in barbotine, and in a few cases, with glass paste
inlays. Both classes may have been manufactured by the same workshops, with color-coat
fineware representing the higher end of the production scale.

Clay specimens of the Plio-Pleistocene marine transgression were obtained for comparative
purposes from two locales on the Janiculum Hill, here termed Cava Aurelia (10 samples) and
Villa Pamphili (6 samples), the part of Rome believed to have been the primary locus for the
production of ceramic goods during antiquity. Data are also available for eventual
comparative purposes for clays from a number of geochemically similar clay outcrops and
fineware from several Roman-period pottery workshops in the territory to the north of the
city.

Experimental

Theory: Neutron activation analysis is one of several highly effective methods which can
be employed to determine the chemical composition of ancient ceramics and related material,
and has traditionally been used to supplement optical and petrographic analysis. Compositional investigations of pottery have been demonstrated to be useful in establishing the loci of source material (i.e. clay outcrops) and/or manufacturing centers when the chemistry of pottery samples of unknown origin are compared to the chemistry of samples (pottery or clay) of a recognized provenience. Several assumptions pertaining to the investigation of provenience of archaeological ceramics using NAA, while widely accepted, are listed: 1) the chemical nature of a given clay source is unique and NAA can sensitively and accurately detect the concentration of the rare earth and trace elements which may be particularly useful in establishing the chemical signature of the clay source, 2) the chemical signature of a sample of unadulterated pottery should reflect the nature of its source, including the degree of variance, and 3) pottery samples which have been demonstrated to have similar compositions are assumed to be products of the same geological source material.

Sample selection and preparation: Several criteria were considered in the selection of
pottery specimens. 1) A group of at least 25 members was desired for each class of pottery
in order to establish reliable reference groups for eventual multivariate statistical analyses.
2) Samples were selected from a limited number of stratigraphic contexts in order to diminish
broad chronological variability which could potentially bias the compositional analyses;
hence, the majority of the specimens are from two large stratigraphic units (PEA 105 = mid
4th c. AD and PEB 180 = early/mid 5th c. AD). 3) Samples were obtained from rims in order
to minimize the possibility of accidentally repeating analysis of a single vessel.

The pottery samples were prepared in Rome according to standardized procedures. To avoid
environmental contamination and chemical interference from the constituents of any slip that