ETRUSCAN CERAMIC TECHNOLOGY: EVIDENCE FROM A SECOND CENTURY B.C. CONTEXT AT CETAMURA

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J. Theodore Peña
Program in Mediterranean Archaeology (Anthropology/Classics)
The University at Albany, S.U.N.Y.

In this paper I will present preliminary results obtained in a program of compositional analysis that I am carrying out with the pottery assemblage from the Etruscan/Roman site of Cetamura. The aims of this project are to shed light on Etruscan ceramic technology by identifying the techniques of paste preparation and ceramic resource utilization employed for the manufacture of the site pottery assemblage. In order to illustrate the methods employed and indicate some of the results obtained I will focus my discussion on a group of materials recovered in a context dating to the second century B.C.

Cetamura is a small hilltop settlement located in the Chianti Mountains of northeastern Tuscany. The site has been the subject of small-scale excavations by Florida State University since 1973, with the University at Albany, S.U.N.Y. collaborating in the 1987 and 1988 field seasons. The results of this work indicate that the hilltop was occupied by a small Etruscan village from the late fourth or third to the first century B.C. A Roman villa was subsequently built over part of the site, remaining in occupation until at least the second century A.D.

The group of pottery that is the subject of this paper was recovered in a large fill layer deposited inside a semi-subterranean building termed Structure B. While the chronological analysis of the deposit, Structure B locus 2, is not yet complete, most of the materials appear to date to the second century B.C., with the terminus post quem for the layer's deposition occurring at some point during the second half of the century. Among the tablewares are a large quantity of blackgloss ware and a smaller amount of so-called Volterran presigillata. The bulk of the deposit, however, consists of coarse utilitarian vessels, and it is on the analysis of this group of materials that I have concentrated my efforts.

The coarse utilitarian pottery was subjected to a program of analysis that included the following steps. First, a selection of materials was examined under a binocular microscope having a maximum magnification of 40 times in order to draw up a provisional fabric classification. All sherds in the deposit were then classified on the basis of their megascopic characteristics. Next, representative sherds from each fabric class were refired in an electric kiln in order to burn off soot deposits and complete the oxidation of the matrix, thereby bringing all examples to a standardized condition. Refiring was done at 900 degrees Centigrade in an oxidizing atmosphere for a period of two hours. These pieces were then examined under the binocular microscope and fabric class descriptions revised as appropriate. Finally, representative sherds from each fabric class were thin-sectioned and subjected to petrographic analysis in order to permit the further elaboration of fabric class descriptions.

The group of materials in the deposit displayed an unexpectedly low degree of compositional variability, with most sherds readily assignable to one of four distinct fabric classes, each employed for a restricted group of forms with a well-defined function. I will briefly describe each of these.

FABRIC 1. This was used for just two forms, thick-walled cookpots with their matching lids. Most examples present a body heavily blackened by soot deposits, with abundant large, rounded to angular voids. Refiring brought the body to a light red color, indicating the use of an iron-rich base clay. The origin of the voids was revealed by a small number of sherds containing large fragments of calcareous rock near the center of the vessel wall. This material, which was presumably added as temper, would appear to have burned out in most cases - whether during firing or vessel use is unclear - leaving voids. In thin section this fabric shows a matrix strikingly poor in the small, naturally-occurring non-plastics such as quartz and feldspar normally present in ceramic bodies. The voids, which range from rounded to angular, appear to have been produced by the decomposition of fragments of limestone, although a few show the rhomboidal shape characteristic of calcite. The high porosity of vessels in this fabric would have made them well-suited for use in a cooking capacity, since voids limit the propagation of the micro-cracks caused by exposure to repeated cycles of heating and cooling that often lead to vessel failure. The coarseness of the temper, however, would have required the manufacture of fairly thick-walled vessels, which would have been poor conductors of heat and been subject to high levels of thermal stress across the vessel wall.

FABRIC 2. This was employed for a narrow range of large storage forms, for the most part jars and lids. Most examples present either a uniform light red or yellowish red body, or a combination of reddish and gray zones, with frequent very large, angular fragments of reddish to gray, non-calcareous sedimentary rock. Refiring brought the body to a uniform light red color similar to that of Fabric 1. In thin section the inclusions, which were apparently added to the paste as temper, display an extremely fine texture that identifies them as fragments of argillite. By adding large, angular pieces of this material to their base clay potters would have produced a paste with greater tooth that was well suited for the forming and drying of large, thick-walled forms like storage jars. As a tempering material argillite would have been superior to the calcareous rock employed in Fabric 1, since it is more resistant and would have been better able to withstand exposure both to firing and prolonged contact with liquids, yielding a less porous body better suited for storage vessels.

FABRIC 3. This was employed for a wide range of serving and storage vessels, including jugs, pitchers, jars, and bowls. Most examples show a pink to white body, often with a light gray core, with inclusions of rounded to subangular medium-sized quartz sand. Refiring brought the body to a uniform pinkish white color, indicating the use of an iron-poor base clay different from that employed for Fabrics 1 and 2. In thin section the non-plastic component of this fabric can be seen to consist primarily of moderately weathered grains of quartz. By adding this material to the base clay potters would have produced a paste with a moderate amount of tooth well suited for the production of medium-sized forms on a fast wheel.

FABRIC 4. This was employed for just two forms - a flat-bottomed pan with reddish slip on its interior surface and a matching lid. These belong to the family of high quality cookwares known as Pompeian red ware, which appear to have been mass produced by a small number of specialized workshops and distributed over extensive market areas. Examples have a red body, often darkened by soot on the exterior surface, that is gritty to the touch and contains occasional large, rounded, red to black inclusions. Refiring brought the body to a uniform red color, indicating the use of an iron-rich base clay similar to that in Fabrics 1 and 2. In thin section the non-plastic component of this fabric can be seen to consist of very abundant, small, moderately to well rounded grains of quartz, with occasional bits of feldspar. The large red to black inclusions prove to be nodules of iron oxide. The origin of these materials is uncertain, although their small size, abundance, and advanced degree of weathering suggest that they may be a naturally-occurring component of the base clay rather than deliberately added temper. This paste would have been exceptionally well-suited for the production of cookwares, permitting the manufacture of thin-walled forms that would have been excellent conductors of heat while generating low levels of thermal stress. Further, the rich non-plastic component of fine-grained quartz would have yielded a ceramic body extremely resistant to the formation of thermally-induced micro-cracks.

Looking back over these results we can see that the deposit is characterized by a straightforward and consistent matching of raw materials and paste preparation techniques with specific vessel forms and functions. From this it would appear that the potters responsible for the manufacture of these vessels possessed a developed understanding of the characteristics of a variety of raw materials. In order to amplify this result we must now turn our attention to the organization and geographical context of production.

While the excavations at Cetamura have yielded no direct evidence for the on-site production of pottery during this period, the abundance of Fabrics 1, 2 and 3 suggests that these classes were probably produced locally. In lieu of workshop evidence and reliable estimates of local pottery consumption, we can only suppose that these vessels were manufactured by one or more workshops of specialized craftsmen. It is unclear whether these individuals are likely to have been full- or part-time potters, or carried out their activity on a year-round or a seasonal basis.

Although a systematic survey of ceramic production resources in the area of the site remains to be carried out, casual investigations suggest that the raw materials necessary for the production of all four fabrics were available within two to three kilometers of the settlement. An argillaceous deposit of uncertain extent is exposed on the middle slopes of the hill roughly 200 meters to the east of the site. The clay from this exposure, which is highly plastic when hydrated, is of a light gray color similar to that frequently found in incompletely fired examples of Fabric 3. That clay deposits suitable for use in pottery production occur in this area is also suggested by the presence of a ceramic kiln abandoned in the early decades of this century just 100 meters to the west of this outcrop. Between two and three kilometers to the northwest of the site is a more extensive outcrop of clay also used earlier in this century for the manufacture of brick, tile, and pottery, at least some of which fired a reddish color similar to that of Fabrics 1 and 2.

A wide variety of tempering materials is also available in the vicinity of the site. While the hill on which Cetamura is located consists of micaceous sandstone, roughly 500 meters to the west of the site bedrock changes to limestone. Weathering products of this formation might well have been used for the temper in Fabric 1. Extensive beds of argillite outcrop on the eastern slopes of the site hill. Material from these exposures may have been employed as temper in Fabric 2. Finally, while this has not been investigated, it seems likely that nearby streams receiving sediment from the sandstone formation on which the site is located contain deposits of quartz sand similar to that used for temper in Fabric 3.

While Fabric 4, the Pompeian red ware variant, might also have been produced locally, this kind of pottery tends to have been distributed over extensive market areas and may have been manufactured at some distance from the site. It is interesting to note that the most widely attested of the several Pompeian red ware fabrics thus far identified in Italy has a non-plastic component rich in the alkaline volcanic materials characteristic of the Roman volcanic province. This fact has led scholars to posit an origin for these vessels somewhere in South Etruria, the Rome/Alban Hills area, or the Bay of Naples. The variant found at Cetamura, however, has a strikingly different mineralogy. The non-plastic component consists of exceedingly common clastic materials that do not permit the fabric's point of origin to be determined with any degree of specificity on geologic grounds. The mineralogy is, however, consistent with a provenance somewhere in northern Tuscany, and given the preponderance of this variant at Cetamura, it may well be that it was manufactured somewhere within this region.

In the future I plan to amplify these results through an expanded program of compositional research, involving the petrographic and chemical analysis of additional site materials as well as clay, rock, and pottery samples collected from outcrops and ceramic workshops in the Cetamura area. By extending this kind of analysis to groups of pottery spanning the entire period of the site's occupation it will be possible to build up a detailed picture of the paste preparation techniques and resource utilization practices employed by potters working during both the Etruscan and Roman periods, throwing into relief some of the technological and economic changes that occurred as this part of Etruria was drawn into the Roman cultural koine.

LIST OF SLIDES:

NEAR PROJECTOR	FAR PROJECTOR
1. map showing site location	1. view of site setting
2. plan of site	2. view across site
	3. plan of Structure B
4. view of Structure B	
5. blackgloss ware sherds	5. Volterran red-slip ware sherd
6 Fab. 1 vessel	
7. Fab. 1 sherd	7. Fab. 1 refired sherd
8. Fab. 1, 40 X, pl.pol.lt.	8. Fab. 1, 40X, cr.nic.
9. Fab. 2 vessel	
10. Fab. 2 sherd	10. Fab. 2 refired sherd
11. Fab. 2, 40X, pl.pol.lt.	11. Fab. 2, 40X, pl.pol.lt.
12. Fab. 3 vessel	
13. Fab. 3 sherd	13. Fab. 3 refired sherd
14. Fab. 3, 40X, cr.nic.	14. Fab. 3, 40X, cr.nic.
15. Fab. 4 vessel	
16. Fab. 4 sherd	16. Fab. 4 refired sherd
17. Fab. 4, 40X, cr.nic.	17. Fab. 4, 40X, cr.nic.
18. geologic map of area	
	19. limestone and calcite fragments
	20. argillite fragment
	21. quartz sand
22. map showing site location	22. IRSC FAB. 2, 40 x, cr.nic.
	23. Fab. 4, 40X, cr.nic.