PLUMBATE ORIGINS REVISITED

Karen Olsen Bruhns

Plumbate, a distinctive ceramic of the Early Postclassic, has been thought to have been manufactured in the Pacific region of Guatemala and traded throughout Mesoamerica and Central America. Two aberrant types of Plumbate found in Late Classic contexts in Veracruz and Early Postclassic contexts in central El Salvador suggest that the origins and spread of Plumbate or Plumbate techniques may be more complex.

One of the characteristic ceramic types of the Early Postclassic in Mesoamerica is Plumbate, a highly fired iridescent ware which was produced in a limited number of distinctive shapes. Since Anna O. Shepard (1948) published her classic volume on Plumbate, the ware has been considered a horizon marker of the Early Postclassic and has been accepted as evidence of widespread trade networks existing during that time period. Shepard was working with a limited sample and had few pieces with extensive or carefully documented associations. Using this sample she defined and described two major types: Tohil Plumbate and a rare, perhaps earlier, San Juan Plumbate. Tohil Plumbate had a wider spatial distribution than did San Juan Plumbate. Although it had been generally thought that Plumbate was produced in several centers, Shepard hypothesized that there was a single area of production, located in Pacific Guatemala. This hypothesis was mainly based on the frequency of occurrence in known archaeological sites with the supposition that the sites closest to the area of manufacture should have the highest percentage of Plumbate in their ceramic assemblages. While the amount of data available for Mesoamerican sites of the terminal Classic and Early Postclassic has greatly increased since the 1940s, Shepard's hypothesis has never been seriously challenged (at least not in print), and the presence of Tohil Plumbate in any archaeological site has been taken as prima facie evidence of an Early Postclassic date for that site and for the residents of the site having engaged in trade with coastal Guatemala, despite that fact that Shepard herself was cautious about coming to final conclusions on the basis of the evidence then available.

Recently, in the course of archaeological investigations at Chihuatán, a large Postclassic town located in central El Salvador, evidence has appeared that casts some doubt on the single area of manufacture hypothesis and suggests that there were other types of Plumbate that were not of Guatemalan manufacture.

Chihuatán dates to the Early Postclassic. The results of three radiometric assays on materials from excavations in the Western Ceremonial Center run by the Radiocarbon Laboratory of the National University of El Salvador are as follows: 1155 ± 50 years; A.D. 795 (x-12a); 1010 ± 86 years: A.D. 940 (x-12b); and 1028 ± 92 years: A.D. 922 (ELS-31). The first two determinations were done on the same sample divided in half. The samples were burned wood from ceremonial constructions, and there is little reason to think that these were erected much more than a century prior to the burning and abandonment of this ceremonial center [William Fowler, personal communication]. Another determination by the same laboratory was done on a sample of charred roof beam from a ceremonial structure at Santa María, an Early Postclassic site about 16 km east of Chihuatán in the Middle Lempa Valley. This produced a date of 940 ± 86 years: A.D. 1010 (ELS-35). These dates and the homogeneity observed in the ceramic complexes of both sites incline those of us working in central El Salvador to date the Early Postclassic in that area to between A.D. 850 and 1200, with Chihuatán and Santa María pertaining to the earlier part of that period.

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0002-7316/80/040845-04$0.90/0/1
The Chihuatan ceramic assemblage is rather typical of the Early Postclassic as observed at a number of Mesoamerican sites, and includes coarse appliqué wares formed into biconical spiked censers, ladle handled censers, Tlaloc jars, zoomorphic and anthropomorphic effigies, and modeled figures of various deities of Mexican derivation. With these are found fragments of Mixteca-Puebla and Nicoya-like polychrome wares in both local and imported varieties, and a number of plain or simply decorated red, white, and tan wares, mainly formed into flaring-walled tripod and flat-bottomed bowls and jars and ollas of various shapes. Tohil Plumbate occurs quite frequently, and a few other fine-paste wares, also probably imported, occur rarely.

In 1977 in excavations into a house platform located to the southwest of the Western Ceremonial Center, a piece of a small, rounded, open vessel was discovered. This vessel is of a fine, highly fired paste and bears red and white painting on the exterior. The interior finish is the typical iridescent gray of Plumbate. Examination of the paste of the vessel with a jeweler's loupe showed it to be very similar to the paste of typical Tohil Plumbate vessels. Early in 1978, in the excavation of Structure P-1, a small ceremonial or administrative building just to the west of the North Ball Court and part of the Western Ceremonial Center Complex, two more sherds of the same type were encountered. These sherds all pertain to the same shape—a small convex-walled bowl or cup. This form is not known in either San Juan or Tohil Plumbae. The red and white paint on the exterior was not applied over an existing Plumbate vessel and refired; it is an integral element of the surface finish of the vessel.

The closest analogues that these sherds have in any formally reported ceramic complex from Mesoamerica are to be seen in a Late Classic/Early Postclassic assemblage from Veracruz. Alfonso Medellin Zenil (1955, 1960) describes a ware he calls "Metallica" or "Baño Metálico" found at a number of sites in central Veracruz. This ware, which is closely related to Fine Orange, has a metallic wash or glaze, usually on the exterior and the rim interior. Otherwise it is largely indistinguishable from Fine Orange. One variety of this ware is painted red and white on the exterior:

In the excavations carried out at Cacalotlan and Polveredas both sherds and vessels of Red-on-White ceramics were encountered. This type is typical of the Upper Remojadas II phase of the Late Classic of central Veracruz (sixth century A.D. to 900 A.D.). These vessels had a "metallic" slip on the interior replacing the red slip found on older vessels of this type. These examples from Terminal Upper Remojadas are similar to and correspond chronologically with the Metallic type of the end of the Pavon IV phase of the Huasteca. (Medellin Zenil 1955:44, my translation)

A second unusual type of Plumbate or Plumbate related ware came to light in the excavations in 1977 and 1978 in residential zones to the south and west of the Western Ceremonial Center. From SS-49, a quadrangular platform within a group of similar (though lower) platforms in the southern area, came three sherds of a single vessel, a flaring-sided, flat-bottomed bowl. The sherds came from the level of living debris on the surface of the platform. The shape, size, and rim form of the bowl are typical of locally manufactured ceramics. A rim sherd of identical type was found on the floor of NW-1, a house complex in the western residential zone. The paste of these sherds appears to be local in origin. Local pastes are typically well oxidized, a gray core appearing only in a few very reduced or very thick-walled vessels. The tempering material is volcanic grit mixed with riverine sand of irregular particle size. The surface treatment of the sherds is also typical of ordinary Chihuatan ceramics, consisting of the vessel being rather carelessly smoothed and wiped. But in place of the common red, white, or tan slip, the vessels were coated inside and out with a thin Plumbate-like wash or slip. This wash or slip adheres poorly to the paste and is slightly crazed. Comparison to Tohil Plumbate specimens from the same two structures leaves little doubt that the slip is of Plumbate clay. However, aside from the slip and the evidently higher firing temperature used (relative to most other Chihuatan ceramics), the bowls are completely typical of local vessels.

The discovery of these two different Plumbate types, at least one of which was locally manufactured, resurrects the question of the origin and area of manufacture of Plumbate pottery and suggests that established ideas on Postclassic trade routes and even about items traded may have to be revised. Shepard's typical area with the most analogues to Plumbate pottery is not the area with the most analogues to the types of Plumbate types these sherds appear to resemble. The closest analogues that these sherds have in any formally reported ceramic complex from Mesoamerica are to be seen in a Late Classic/Early Postclassic assemblage from Veracruz. Alfonso Medellin Zenil (1955, 1960) describes a ware he calls "Metallica" or "Baño Metálico" found at a number of sites in central Veracruz. This ware, which is closely related to Fine Orange, has a metallic wash or glaze, usually on the exterior and the rim interior. Otherwise it is largely indistinguishable from Fine Orange. One variety of this ware is painted red and white on the exterior:

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be revised. Shepard's tentative point of origin rests basically upon the age-area hypothesis; the area with the most and perhaps the (then known) earliest Plumbate should be the area of its origin and manufacture. This hypothesis has been very influential in archaeological reconstructions, but seldom has it been rigorously tested. In the absence of physical analyses of clays from sources in coastal Guatemala and analyses of Plumbate fragments from known archaeological contexts, all hypotheses aside, we cannot be sure about the origin or origins of Plumbate. The appearance of two rather different types of Plumbate merely suggests further that the questions of origins and of trade need to be reconsidered. It is possible that there was a single area that produced Plumbate and traded it widely, either directly or through intermediaries such as professional traders. It is also possible that this area produced some pottery which was of different shapes than those found in the more common San Juan and Tohil Plumbates and which occasionally combined colored slips with Plumbate slips. But if so it is odd that painted or aberrantly shaped Plumbate types have not been reported from archaeological sites in Guatemala and especially that they have not appeared in sites near the hypothesized area of origin and manufacture, although they have now appeared in areas as far away as Veracruz and central El Salvador.

The possibility that cultures in these latter areas knew of Plumbate manufacturing techniques must then be considered. The Red-on-white Plumbate seems to have temporal priority in Veracruz. Medellin Zenil (1960) suggests that here they (and the "Metalico") are local imitations of Plumbate and points out that Tohil Plumbate is also known from this area. The "metallic" ceramics, however, are found in local forms as well as forms closely allied to those seen in Tohil Plumbate. The Red-on-white Plumbate has now appeared in central El Salvador as well and could be taken as an indication that the intensified contact with Veracruz postulated by Andrews (1976) for the Late Classic phases at the site of Quelepa in eastern El Salvador continued into the Early Postclassic at sites which succeeded the by then largely abandoned Classic period centers.

It is also possible that the technique of Plumbate manufacture as well as actual pieces of Plumbate traveled over this route. The other pieces from Cihuatan are of a paste from a source near that site, and the form is local; only the slip is Plumbate-like. It is evident from the fabric that the local potter was aware of the specialized firing conditions needed to produce Plumbate, although probably less aware of or unable to control for differential shrinkage factors. The thinness of the slip and the fact that only two vessels of this type have been so far discovered may indicate that the slip material was rare, perhaps traded as an oddity. On the other hand, the mastery of the firing suggests that the technique of producing Plumbate was known, even if the raw materials were scarce.

In addition to this locally made type, which was obviously of Cihuatan manufacture with the potter making no attempt to hide the fact, several fragments of a pseudo-Plumbate ware have appeared in excavations in the Western Ceremonial Center and the surrounding residential areas. At first glance this ware appears to be oxidized Tohil Plumbate, but closer inspection reveals that it is a fine-paste ware that is highly fired and well polished, but that the paste is not quite as fine as Plumbate paste and is not fired to the point of vitrification as are the true Plumbates. The forms appear to be the same as those known for Tohil Plumbate. Plastic decoration consists mainly of broad-line incision in patterns identical to those of Tohil Plumbate. The pseudo-Plumbate ware would appear to have been imported to Cihuatan, but literally nothing is known of its area or areas of manufacture. Did it diffuse along the same paths as true Plumbate? This is a question which present evidence cannot answer, as pseudo-Plumbates with good provenience appear to be extremely rare.

Although the evidence is very limited, the existence of two types of Plumbate-like ceramics, in one case at least associated with Tohil Plumbate and pseudo-Plumbate, indicates that there may well have been several centers of production of this distinctive pottery or pottery technique. Whether there were several sources of Plumbate clays or whether there was simply diffusion of the firing techniques and/or trade in the appropriate raw materials are questions which cannot be answered with present evidence. Analysis of the paste of both aberrant Plumbates is planned along with analysis of clays from local sources and the paste of Tohil Plumbates found in the same
archaeological contexts. This alone, combined with analysis of Plumbates from other sites in Mesoamerica, may provide an answer to the vexing questions of Plumbate origins and diffusion.

Acknowledgments. I wish to thank William Fowler for sharing information from his excavations at Chiuatan and for his help and encouragement with the initial version of this paper. Stanley Boggs, Wolfgang Haberland, Norman Hammond, and Payson Sheets read and commented upon another draft. Thanks are also due to the Center for Field Research/Earthwatch Inc., the Administración del Patrimonio Cultural (El Salvador), and San Francisco State University who financed and aided the Chiuatan project. The real foundation for this comment is the work of Anna O. Shepard, without whose insight and industry we would all still be in Square 1.

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ARCHIVAL REPORTS OF POOR CROP YIELDS IN THE EARLY POSTCONQUEST TEXOCAN HEARTLAND AND THEIR IMPLICATIONS FOR STUDIES OF AZTEC PERIOD POPULATION

Jerome A. Offner

One type of evidence which Sanders has used to show the excessive nature of the population estimates proposed for central Mexico by Borah, Cook, and Simpson is an estimation of the agricultural productivity of the Teotihuacan Valley. This estimation assumes an equivalence of contemporary with preconquest agricultural productivity, but such an assumption may be too optimistic since sixteenth-century crop yields from tribute fields in five towns in the Valley of Mexico indicate a curiously low level of maize productivity. These yields are presented and discussed, and Sanders' population estimates are seen to be more accurate than those of Borah, Cook, and Simpson.

The range in estimates of the immediate preconquest population of central Mexico has long stimulated controversy. The precipitous decline in indigenous population that followed the Spanish conquest (A.D. 1521) and was generated by epidemic disease and Spanish abuses makes the task of estimation all the more difficult. For the most part, scholars have used documentary evidence to establish (with varying degrees of success) the population of central Mexico at certain points in the sixteenth century and have gone on to postulate rates of population decline which they have then used to calculate the indigenous population at the time of contact. The most impressive studies of this type have been the works of the "Berkeley school"—Borah, Cook, and Simpson.

Sanders, however, and solecisms in the evidence to propose lower population estimates for central Mexico and to postulate lesser reductions in the number of Indians who reached the conquest. An analysis of data from the Texcocan heartland, he points out, is especially important because it is considered much less reliable for the estimation of population, and he concludes that even greater than its 1568 estimated population of 900,000, the population of the Teotihuacan Valley is not likely to have been greater than 1519 (1970:438).

More convincing than the statistical studies of agricultural productivity of the Valley, however, are the archival reports of poor crop yields in the early postconquest period. Drawing on these reports, Sanders assumed that the agricultural productivity of the Valley would be about 80% of that recorded for the valley today and that this productivity was not in any close relationship with the Teotihuacan Valley in the preconquest period. He argues that the population of the Valley could not have grown beyond 150,000 in the sixteenth century. The estimated population of the Valley at the time of conquest is thus based on information that was gathered from the farmers and provides a more accurate as that used in the preconquest period. Consequently, the population estimates of the preconquest period will be seen in the light of these reports.

Using both archaeological and documentary evidence of the various areas surrounding the alluvial plain of the Teotihuacan Valley and could therefore have supported the Valley could have yielded the same productivity as that used in the sixteenth century. The population decline for the population of central Mexico in the years following the conquest is therefore seen to be not as severe as that suggested by other scholars. Consequently, the population estimates of the preconquest period are seen to be more accurate than those of Borah, Cook, and Simpson.

"Second-class" lands were not used for terracing and flooding on an annual basis, and so would not have been able to support poor conditions for farming. Consequently, for the population of central Mexico to have been as high as suggested by other scholars, the poor conditions for farming must have forced the Indians to abandon the use of these lands. Consequently, for the population to have been as high as suggested by other scholars, the poor conditions for farming must have forced the Indians to abandon the use of these lands. Consequently, for the population to have been as high as suggested by other scholars, the poor conditions for farming must have forced the Indians to abandon the use of these lands. Consequently, for the population to have been as high as suggested by other scholars, the poor conditions for farming must have forced the Indians to abandon the use of these lands. Consequently, for the population to have been as high as suggested by other scholars, the poor conditions for farming must have forced the Indians to abandon the use of these lands. Consequently, for the population to have been as high as suggested by other scholars, the poor conditions for farming must have forced the Indians to abandon the use of these lands.