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**Prehispanic Settlement Patterns and Agricultural Production
in Tepeaca, Puebla, Mexico, AD 200 - 1519**

A Thesis in

Anthropology

by

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Chapter 3

Ceramic Chronology

Berthold Laufer, expert on Chinese art and artifacts at the Field Museum, once remarked that chronology was “the nerve electrifying the dead body of history” (Laufer 1913:577). In the case of the PAT data, the ceramic chronology is the foundation upon which all settlement reconstruction rests. In this chapter, I describe the PAT ceramic chronology for the period between AD 200 and the Spanish Conquest in 1519. First, I explain the method I used to construct the chronology. Second, I discuss the association of material culture phases with periods of absolute time (i.e., periodification) using the PAT data and cross-dates. Finally, I discuss the diagnostic ceramic modes for the Classic, Epiclassic, and Early and Late Postclassic periods.

In the most general sense, the ceramic sequence for the PAT study area closely matches the basic sequence observed throughout Central Mexico. That is, white and red monochrome and bichrome wares in distinctive vessel forms predominated in the Formative Period (ca. 800 BC – AD 200), with red wares increasing in prevalence toward the time of Christ (Castanzo 2002). In the Classic Period (AD 200 – 600), polished monochrome brown, black, and red wares predominated in distinctive forms such as outcurved bowls, and Thin Orange trade ware from southern Puebla was abundant. Red-painted bichromes decorated with geometric designs become common in the Epiclassic Period (AD 600 – 900). The onset of the Early Postclassic Period (AD 900 – 1200) is signaled by the development of these red-painted wares into black-painted bichromes similar to the earliest examples of the so-called ‘Aztec’ ceramics found in the Basin of Mexico and elsewhere. Finally, the Late Postclassic (AD 1200 – 1519) featured the development

of polychrome service ware associated with Cholula specifically and the Mixteca-Puebla tradition in general.

Chronology Construction Method

The chronology for the Classic, Epiclassic, and Postclassic periods in the Tepeaca area is a composite of the basic typology developed by James Sheehy in the field laboratory (Sheehy n.d.) and my chronological analysis using excavation data and cross-dates. Sheehy produced an exhaustive typology encompassing the full breadth of ceramic variation evident in the surface collection and excavation assemblages. My chronological analysis used Sheehy's typology in conjunction with stratigraphic information from the 39 test excavations that were undertaken as part of the PAT (to obtain a general idea about the broad patterns in the ceramic sequence (see Chapter Four for a discussion of PAT excavation methods). I then used similarities between the modes present in the PAT assemblage and those known from other sequences in adjacent areas to refine the chronology and suggest date ranges in absolute time for the Classic, Epiclassic, and Postclassic periods.

The test excavations yielded stratigraphic information that suggested general trends in the prevalence of ceramic types through time. Almost all of the excavated contexts were mixed to some degree, which is to say that no single stratum ever contained 'pure' assemblages of exclusively Formative, Classic, Epiclassic, or Postclassic ceramic material. The reason for this lies in the site formation processes at work after deposition caused by nearly continuous occupation and disturbance by burrowing animals.

Over the centuries, continuous occupation of the PAT landscape has caused a fair amount of disturbance to archaeological materials through agricultural activity, construction, trash pit and well excavation, and so forth. In addition to human disturbance, burrowing animals such as

pocket gophers (of the Geomyidae family, locally known as *tuzas*) abound in the area and contribute substantially to movement of archaeological materials within the soil profile. Both of these factors have been noted for producing substantially mixed archaeological assemblages at other sites in the Puebla Valley, particularly Cholula (Plunket 1995:103-104). This kind of disturbance ensures that the material from any excavation will be mixed to some degree, even in ideal contexts such as burials or middens, no matter how careful the excavation. Consequently, although the ceramic types that occur abundantly in successive strata within a given excavation do exhibit stratigraphic patterns, virtually every stratum contained at least one Formative-, Classic-, Epiclassic, and/or Postclassic-period sherd. This means that the excavated material provides a good guide for inferring which types correspond to general time periods (on the order of centuries, i.e., Formative, Classic, Epiclassic, or Postclassic). However, it is not as useful for making fine distinctions within these general periods. In order to make finer distinctions, cross-dating is more helpful.

The primary source of cross-dates is the Basin of Mexico (Rattray 1966, 2001; Parsons 1971; Sanders, et al. 1979), with the sequences of the Tehuacan Valley (MacNeish, et al. 1970), Tlaxcala (Garcia Cook and Merino 1988a), Cacaxtla-Xochitécatl (Serra 2004; Serra and Lazcano 1997), Morelos (Hirth and Cyphers 1988, 2000), and Cholula (Dumond and Müller 1972; Lind, et al. 1990; McCafferty 2001a; Müller 1970, 1978; Noguera 1954; Plunket 1995) playing supporting roles. The method of comparison was a qualitative one, in which I reviewed the chronologically significant ceramic attributes in a given adjacent region (i.e., surface treatment, decoration, vessel form, etc.) and then searched for similar attributes in the excavated and surface collected material from the PAT. Having matched PAT ceramic modes on this basis, I then checked their relative frequency amongst excavation strata. The frequencies of modes associated with the Classic Period (e.g., Thin Orange and burnished, monochrome wares in outcurving bowl forms) were generally very low in the deepest strata containing predominantly Formative types, high in

overlying strata containing other Classic markers, and lower in the uppermost strata containing Postclassic types. Modes that were associated with the Postclassic Period were generally absent or rare in any but the shallowest strata, overlying Formative and Classic Period contexts.

Periodification

Archaeologists routinely use frequency seriation combined with chronometric dating to identify cultural phases and associate them with absolute temporal ranges. For example, the Xolalpan Phase at Teotihuacan is defined based on specific modes of ceramic paste composition, form, surface treatment, and decoration. These modes differentiate it from earlier and subsequent phases. Radiocarbon dates from deposits containing a high proportion of ceramics exhibiting these characteristics bound the phase in terms of absolute time, which in the case of the Xolalpan phase at Teotihuacan would be ca. AD 450 – 650. Of course, this is a simplification of reality. For example, archaeologists recognize that people in the past did not throw out all of their kitchen and serving pots on New Year's Day, AD 651 (or the Teotihuacano equivalent) in favor of Metepec wares. Vessels with a particular form, surface treatment, and so on were certainly used before and after the phase when they were commonly used. Nevertheless, by identifying a range of absolute dates for when various ceramic modes were most common, archaeologists create temporal categories (e.g., periods) to simplify the task of tracking diachronic changes in material culture.

Since no conclusive chronometric dates are available from the PAT survey area for the Classic and Postclassic periods, the temporal boundaries of cultural phases in terms of sidereal time were determined using cross-dates. This method rests on the imperfect assumption that the ceramic modes which define cultural phases in adjacent areas were also prominent in the PAT survey area during the same period of time. Admittedly, this assumption will always be

somewhat false. Just as ceramic traditions do not have discrete temporal boundaries, neither can they be assumed to have had discrete spatial boundaries. It is a virtual certainty that different communities adopted the elements of new ceramic traditions at different times. The only way to resolve the timing of changes in material culture between adjacent regions is through excavation of many sound, unmixed contexts in order to recover ceramic assemblages representative of the modes prevalent at the time of their deposition. Since this kind of precise stratigraphic information is not yet available in the PAT survey area, the temporal boundaries for the time periods used in this study should be viewed as provisional points of departure for future research.

Using Sheehy's typology, I examined excavation data from 39 test pits from five sites (as these were originally defined in the field) within the PAT survey area and compared these with ceramic sequences from adjacent areas to identify four periods (Table 3-1). These periods were used to date the material found in the surface collections and reconstruct settlement patterns between AD 200 and 1519 in the Tepeaca area. The reader is directed to the appendix for diagrams of the vessel forms mentioned in the descriptions that follow.

Period	Begin	End	Length (yrs)
Classic	200	600	400
Epiclassic	600	900	300
Early Postclassic	900	1200	300
Late Postclassic	1200	1519	320

Table 3-1: Period names used in the PAT survey area and absolute time equivalents

The Classic Period (AD 200 – 600)

The ceramics associated with the Classic Period in the PAT survey area are similar to those found in many areas of Central Mexico that date roughly between AD 200 – 600, including Thin Orange trade ware and polished monochrome and bichrome wares. Perhaps most surprising

is that by far the most abundant diagnostic type for the Classic Period was Thin Orange, a trade ware known to have been manufactured in southern Puebla about 40 km south of Tepeaca (Rattray 1990). The close proximity of this production center to the PAT survey area explains its abundance, but it seems curious that foreign pottery would account for such a large proportion of the Classic Period ceramic assemblage. This is probably attributable to the light, durable characteristics of Thin Orange that made it such an ideal trade ware. Other diagnostic modes include common vessel forms and decorative motifs known to have been used throughout Central Mexico around this time, including outcurved bowls (forms 37, 38), beveled rim jars (forms 10, 12), flat-bottom bowls with ‘nubbin’ supports, ‘crater’ cooking pots (form 114), ring base bowls, ‘apaxtle’ censer bases (forms 87, 89), pre-fire incision and punctuation, and pattern burnishing.

I have identified five ceramic markers for the Classic Period in the Tepeaca area (Table 3-2). With the exception of Thin Orange, these markers are not reducible to just one ceramic ‘type’ apiece, but to a combination of types and occasionally specific forms. This was necessary because Sheehy’s original type definitions took into account a number of different attribute. Frequently, sherds that indicated different vessel forms but were otherwise identical in terms of paste, surface finish, and decoration were given different type names. I describe the ceramic markers and their constituent types and forms below.

Marker	Surface		Excavation		
	n	% Period	# Colls	n	% Period
Thin Orange	6,741	60.2%	2,391	2,219	48.7%
Beveled Rim Jars	2,727	24.4%	1,537	18	0.4%
Salsipuedes Specular Red	750	6.7%	501	77	1.6%
Magueyera Pol. Brown/Black	570	5.1%	336	1,535	33.7%
Tlachiquero Red, Red/Natural	248	2.2%	100	245	5.4%
Huixcolotla/Nenetzintla Matte	157	1.4%	118	467	10.2%
Totals	11,193	100.00%		4,561	100.00%

Table 3-2: Classic Period ceramic markers

Thin Orange

Thin Orange is the best known tradeware in Central Mexico, and it is the most abundant marker for the Classic period present within the PAT survey area, comprising just over 60% of Classic Period ceramics. Thin Orange paste has a coarse, gritty texture with calcite inclusions and is completely oxidized with no discernable core and varies in color from reddish-yellow to a strong brown. The surface has either a thin slip or self-slip with a good burnish on the vessel interior and exterior (Figure 3-1). Decorative modes include pre-fire incision and punctation, gadrooning, and appliqué. The majority of the sherds recovered from both the surface survey and excavations were unidentified bowl body sherds, though jars are also present. The ratio of bowls to jars was approximately 3:1 amongst all Thin Orange sherds, and the most common specific bowl form by far was the subhemispherical ring-base bowl (form 43). Also present are the outcurved bowl forms diagnostic of the Classic Period throughout Central Mexico (form 38).



Figure 3-1: Thin Orange sherds found within the PAT survey area

In his original classification, Sheehy (n.d.) recognized 17 types of Thin Orange. Table 3-3 lists these along with their overall frequency in both excavated and surface collection contexts and the percentage of all Thin Orange ceramics made up by each variety. The most common type was Thin Orange Plain. Sherds designated Thin Orange Plain were those that did not exhibit special characteristics such as surface decoration (such as incision, punctation, etc.), distinctive paste composition (e.g., Thin Orange Micaceous), or vessel thickness over 1 cm (i.e., Thick-Thin Orange).

Type Name	Frequency	%Total
Thin Orange	2025	81.52%
Thick-Thin Orange	265	10.67%
Thin Orange Incised	69	2.78%
Thin Orange Incised-Punctate	30	1.21%
Thin Orange Eggshell	30	1.21%
Thin Orange Micaceous	23	0.93%
Thin Orange Punctate	22	0.89%
Thin Orange Micaceous Incised	7	0.28%
Thin Orange Micaceous Punctate Incised	6	0.24%
Thin Orange Eggshell Incised	3	0.12%
Thin Orange Micaceous Punctate	2	0.08%
Thin Orange Gadrooned	1	0.04%
Thin Orange Appliqué	1	0.04%
Total	2,484	100.00%

Table 3-3: Thin Orange types defined by Sheehy (n.d.)

The main differences among the Thin Orange varieties in the Tepeaca area have to do with surface decoration, paste composition, and vessel wall thickness. As shown in Table 3-3, these make up a very small percentage of the Thin Orange recovered in excavation and surface collection. There are two main modes of surface decoration evident amongst the Thin Orange sherds recovered from excavations and surface collections in the PAT survey area: incision and punctation. Of these, only incision should be considered diagnostic of the onset of the Classic.

According to Rattray (2001:325), pre-fire incising appears for the first time in the Late Tlamimilolpa phase (AD 250 – 250), the same period in which Thin Orange begins to occur in quantity. Punctate decoration, however, appears to be a later development, beginning in the Early Xolalpan phase (AD 450 – 550).

Thick-Thin Orange, distinguished by vessel walls that are 1 cm thick or greater, may also have entered the Classic period assemblage somewhat later than other types. Rattray (2001:329) reports that thick-walled Thin Orange vessels of this kind do not appear in deposits earlier than the Early Xolalpan phase (AD 350 – 450) at Teotihuacan. This variety may also be related to the Coarse Thin Orange amphorae discussed by Lackey (1986) found in Teotihuacan during the Late Xolalpan phase (AD 450 – 550). In Tepeaca, however, the range of forms seems to be broader than at Teotihuacan. In the excavated material, it appears almost exclusively in bowl forms. In the material collected from the surface, nearly half of the Thick-Thin Orange sherds were jar body sherds, with bowls making up most of the remainder. This may be due in part to Tepeaca's proximity to the production locus for Thin Orange, which Rattray (1990) has identified as Tepexi de Rodriguez in southern Puebla, approximately 40 km from the PAT survey area.

Thin Orange Micaceous is a Thin Orange type whose paste contains mica temper. Since this variety seems to have no chronological significance, it is considered along with Plain Thin Orange as a marker for the Classic period.

Stratigraphic relationships in the excavated material generally confirm Thin Orange's value as a marker for the onset of the Classic Period at Tepeaca. Thin Orange usually occurs in large quantities in deposits that overlie strata containing large percentages of Formative ceramics. While it is sometimes present in these Formative excavated assemblages, it is generally found in small quantities that are likely the result of mixing. Its popularity may have stretched beyond the end of the Classic period, however, indicated by its occurrence in significant quantities in strata that also contained large quantities of Epiclassic and Early Postclassic sherds such as Maxcha

Reddish Brown, Thin Orange Feo, and Tepeaca Black-on-Orange, and several Coxcatlán varieties (see below). Finally, the mixing apparent in the excavated material made it impossible to discern chronological trends within the Classic period with respect to Thin Orange. Cross-dates from the Basin of Mexico provide a basis for differentiating between Early and Late Classic Thin Orange ceramics.

Thin Orange has long been associated with the expansion of Teotihuacan's sphere of influence throughout Central Mexico and beyond, beginning in second and third centuries AD (Hirth 1978, 1981; Kolb 1986). In Teotihuacan, it first appears during the Miccaotli and Early Tlamimilolpa phases (AD 150 - 250), but it is during the Late Tlamimilolpa phase (AD 250 – 350) that it first appears in large quantities (Rattray 2001:Figure 1b). It is likewise associated with the Late Palo Blanco Phase (AD 200 – 700) in the Tehuacan Valley (MacNeish 1970:170-174) and Tlaxcala (Garcia Cook and Trejo 1977).

Tecococatl and Tlaquexpa Red Beveled Rim Jars

The second most common markers for the Classic period in the PAT survey area are everted and beveled rim jars (forms 10, 12). These forms usually occur in a plain brown ware called Tecococatl Brown and red-slipped ware known as Tlaquexpa Red. Tlaquexpa Red is a type that is most prominent during the Terminal Formative phase at Tepeaca (Castanzo 2002:334) but continues into the Classic Period. The only Tecococatl Brown and Tlaquexpa Red sherds that are considered diagnostic of the Classic Period in my analysis are those that occur in these specific forms.

Tecococatl Brown is a type that encompasses a good deal of variation in surface finish and color in Sheehy's typology. Paste texture tends to be moderately gritty and porous, with a well-defined core. Exterior surface treatment is characterized by a medium to low-luster burnish,

though there is considerable variation in the evenness of treatment on any single vessel. Occasionally, the sections near the top of the neck and below the lip are simply smoothed, while the shoulders tend to be burnished (Figure 3-2).



Figure 3-2: Tecococatl Brown sherds found within the PAT survey area

Tlaquexpa Red jars exhibit a variety of pastes, but most tend to have a fine, slightly to moderately gritty texture. The core tends to be relatively distinct and a very dark grey brown. The color of the edge varies between yellow red to dark yellow brown. The red slip from which *Tlaquexpa Red* derives its name ranges from red to light red and has been burnished to a medium luster, though this is quite variable (Figure 3-3).

Everted and beveled rim jar forms are considered diagnostic of the Early Classic in the Basin of Mexico. Parsons (1971:275, Figure 63b, c, h-k) used these jar forms to define the Early Classic (ca. AD 150 – 450) in the Texcoco region as did Hirth (1971:111, Figure 19) in Eastern

Morelos. Rattray (2001:129, Figure 25b) affirms that beveled rim forms first appear during the Tzacualli phase (ca. AD 1 – 150) at Teotihuacan.

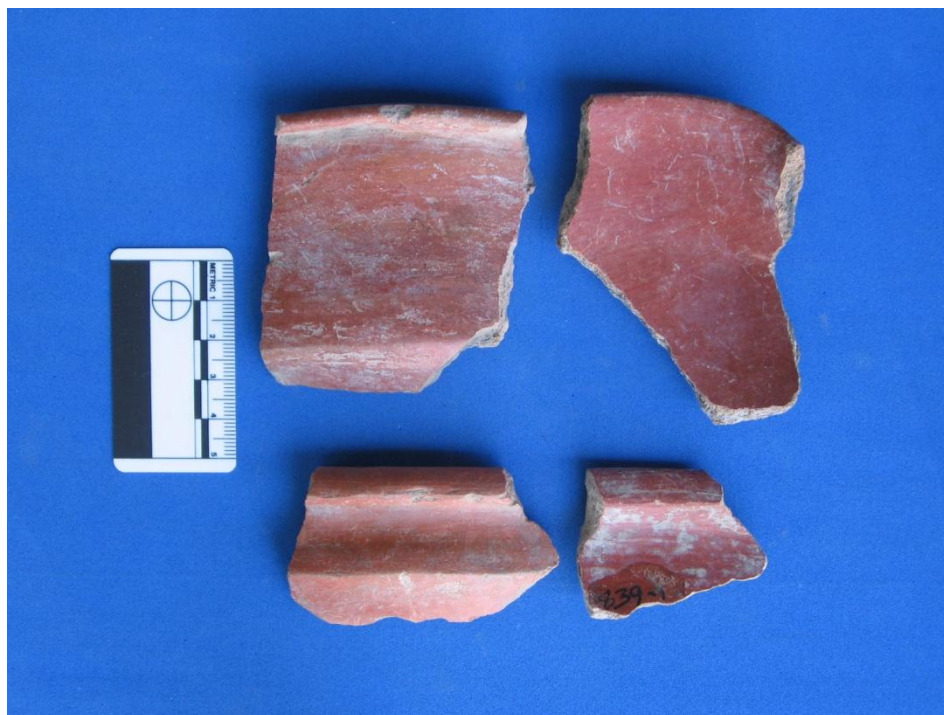


Figure 3-3: Tlaquexpa Red sherds found within the PAT survey area

Salsipuedes Specular Red and Specular Red-on-Natural

Of all the red-slipped and red-on-natural types found in the PAT survey area, the Salsipuedes type is especially diagnostic of the Classic period. The paste varies from moderately gritty, medium texture to very gritty and coarse. The core is generally quite distinct. Similar to burnished, red-on-natural Formative types such as Macuila (Castanzo 2002), it is distinguished by its specular red decoration. This is usually executed as a red band on the interior and/or exterior lip of the vessel, although occasionally geometric designs also appear. Most examples had been burnished to a low luster, although the monochrome varieties have a high polish on the interior of

the vessel (Figure 3-4; Sheehy n.d.). Salsipuedes occurs almost exclusively in bowl forms, with simple conical bowls (forms 39, 40), subhemispherical bowls (forms 43, 48), craters (form 114), and outcurved bowls (form 38).



Figure 3-4: Salsipuedes Specular Red-on-Natural Sherds found within the PAT survey area

A relatively rare type in excavated contexts, Salsipuedes never occurs in large quantities, but it is consistently associated with other Classic period markers such as Thin Orange and polished monochrome brown and black types. Rattray (2001:109) lists specular red paint as one of the diagnostic modes of the Late Tlamimilolpa phase at Teotihuacan.

Magueyera Polished Brown or Polished Black

Magueyera Polished Brown and Magueyera Polished Black were initially considered to be separate types when the analysis began in the field laboratory. Sheehy combined the two in

his typology when it became apparent that the two were likely the same type with a good deal of variation in terms of surface color. The paste tends to be a moderately gritty, medium, porous texture. Surface treatment on Magueyera sherds consists of a slip or self-slip that varies quite widely between many different shades of brown and black, which is generally burnished to a good luster, and sometimes to a high polish, though not always in an even fashion (Figure 3-5). Pattern burnishing is a common decoration technique, as is 'coffee bean' appliqué on vessel exteriors and pre-fire incision.



Figure 3-5: Magueyera Brown sherds found within the PAT survey area

Magueyera occurs most often in bowl forms. Bowl body sherds were by far the most common in both excavated and surface-collected material, with outcurved bowls (form 38), craters (114), and simple conical bowls (form 39) predominating among rim sherds.

Magueyera varieties consistently occurred in large quantities in excavation strata overlying deposits containing large amounts of Formative material and underlying deposits that

contained large amounts of Postclassic material. In terms of cross-dating, Magueyera is very similar to the monochrome polished ware associated with the Miccaotli and Tlamimilolpa phases (ca. AD 150 – 350) at Teotihuacan (Rattray 2001:157, 479) and in Tlaxcala during the Tenanyecac phase (ca. AD 100 – 650; Martinez and Jarquin 2006:163-164; Garcia Cook and Merino 1988a:304-310).

Tlachiquero Polished Red or Red-on-Natural

During analysis of the excavation material, a polished red or red-on-natural type was recognized and given the type name ‘Tlachiquero’. Tlachiquero was similar to the Formative type Tlaquexpa Red and Tlaquexpa Red-on-Natural (Castanzo 2002), but its slip was frequently more of an orange-red similar to that found in the Early Tlamimilolpa phase at Teotihuacan (Rattray 2001:109). Moreover, it occurred in forms that were more characteristic of the Classic period such as craters (form 114) and outcurved bowls with button supports (form 38). After examining the tens of thousands of sherds from excavation contexts, it gradually became apparent that Tlachiquero should be considered a variety of Tlaquexpa Red or Red-on-Natural rather than a separate type. Therefore, when the analysis of the surface collected material began, analysts were instructed to use a different type code associated with a variety of Tlaquexpa and cease using the Tlachiquero type codes altogether. Unfortunately, this guideline was not uniformly followed and both the old Tlachiquero codes and the new codes were used in the analysis of the surface material. The figures for surface-collected, polished red and red-on-natural sherds in Table 3-2 therefore include both the sherds coded as Tlachiquero and those coded as a variety of Tlaquexpa Red-on-Natural.

Tlachiquero Red and Red-on-Natural paste is quite variable. Some sherds are completely oxidized throughout and others have a thin, vaguely distinct core. The paste has a medium,

moderately gritty texture. Surface treatment is comprised of a reddish-orange slip applied throughout the vessel exterior and interior on bowls in the case of Tlachiquero Red. Application of the slip is variable, with some sherds exhibiting a thick slip, while others only have a weak red coating. Tlachiquero Red-on-Natural sherds exhibit this same slip applied as decoration on the natural surface, and this decoration usually appears as a simple band to the lip of the vessel exterior and/or interior. Burnishing is likewise variable, with some sherds exhibiting a very even, lustrous polish, whereas others have been stick-burnished in a cursory fashion, leaving an almost matte appearance. Variable burnishing on larger sherds suggests that burnishing was not uniform even on the same vessel. Sheehy (n.d.) associated the more lustrous surface finishes with ‘crater’ forms (form 114) similar to Tlamimilolpa craters at Teotihuacan. Bowl body sherds were the most common in both the excavated and surface-collected material, with outcurved bowls (form 38), craters (form 114), and simple conical bowls (form 39) predominating amongst rim sherds.

Huixcolotla and Nenetzintla Matte Censer Ware

Nenetzintla Matte and *Huixcolotla Matte* are coarse wares with sandy paste and a matte finish. Surface treatment was confined to smoothing, with no slip or burnishing apparent (Figure 3-6). The original distinction between the two types was made based on apparent differences in predominant forms, which *Huixcolotla* usually occurring in bowls and *Nenetzintla* occurring in jars. These were also the only the only types in the excavated material that appeared in the ‘apaxtle’ censer forms (forms 87, and 89), and a similar pattern was evident in the surface collections.



Figure 3-6: Nenetzintla Matte sherds found within the PAT survey area

These apaxtle forms, together with their coarse, sandy paste and matte finish are similar to Rattray's description of Coarse Matte Ware, which is characteristic of the Late Tlamimilolpa and Early Xolalpan periods (ca. AD 250 – 450) at Teotihuacan (Rattray 2001:179, 205, 541). Huixcolotla and Nenetzintla Matte both appeared consistently in excavation contexts that contained large quantities of Thin Orange, and that were interposed between Formative strata and strata containing Postclassic ceramics.

Based on the data currently available, it is not possible to subdivide the Classic Period into early and late phases. The only modes present in the PAT assemblage that help in this regard are decoration and vessel thickness amongst Thin Orange sherds. In the case of decoration, Rattray (2001:329) reports that punctuation on Thin Orange bowls becomes common during the Late Xolalpan phase at Teotihuacan (ca. AD 450 – 550). Rattray (2001:329) also affirms that thick walls on Thin Orange vessels is also a later development, being present only in deposits that

date to the Early Xolalpan phase (AD 350 – 450) or later at Teotihuacan. Unfortunately, this is not an adequate number of markers to subdivide the Classic Period. Only 393 sherds meeting these criteria were recovered from the surface survey, which were present in just 289 collections. Obviously, it would not be reasonable to conclude that the locations of these 289 collections were the only areas that were inhabited from AD 400/450 – 650 without additional corroborating evidence. The most parsimonious explanation is that our present understanding of the culture history in the southern Valley of Puebla is not yet sufficiently detailed to allow a reliable chronological distinction to be made.

The Epiclassic Period (AD 600 – 900)

Sometime around the beginning of the 7th century AD, the familiar polished, monochrome ceramic tradition of the Classic Period in the PAT survey area was replaced by one that included service ware featuring distinctive geometric painted designs, usually executed in red on either a natural brown or orange, and sometimes cream-slipped background. This conforms to the general pattern seen in the material culture from many areas of Central Mexico probably beginning in the early 6th century AD, a period often called the ‘Epiclassic’ (Jimenez Moreno 1966). This is generally understood to be the period in which the political and economic power and prominence Teotihuacan had enjoyed for centuries finally declined, resulting in ethnic migration and regional reorganization of political and economic relationships.

The ceramic type discussed most often associated with these events in the Basin of Mexico is Coyotlatelco, a red-on-brown painted type with distinctive geometric designs (Rattray 1966). While formerly thought to correspond to the AD 750 – 950 time period, subsequent research has revealed that its development began at least a full century earlier in the Basin and elsewhere, and that its spatial distribution and timing was not as uniform as investigators had

earlier thought (Fournier and Bolaños 2007; García Cook 1981:270; Manzanilla, et al. 1996:260; Mastache 1996:29, 50; Paredes 1998:1639; Parsons, et al. 1996; Sugiura 1996:236, 2001).

Outside the Basin, a diverse range of red-painted bichromes with geometric designs generally correspond to the centuries after Teotihuacan's apogee, but before the black-painted bichromes of the Early Postclassic and the polychromes of the Late Postclassic. This is perhaps best demonstrated at Cacaxtla-Xochitécatl, the largest Epiclassic site in the Puebla-Tlaxcala region, located in the central Puebla Valley about 50 km northwest of Tepeaca. This site's second occupation corresponds exclusively to the Epiclassic Period (AD 650 – 950) and its ceramic assemblages contain large proportions of Bloque Red-on-Brown, a type that compares favorably with Coyotlatelco both stylistically and temporally (Serra and Lazcano 1997, 2004). Red-painted bichrome pottery likewise postdates polished monochrome Classic Period ceramics in the Tehuacan Valley to the southeast of Tepeaca (MacNeish, et al. 1970) and south of the Basin of Mexico at Xochicalco (Hirth and Cyphers 2000). Coyotlatelco ceramics have also been found in very small quantities at the Epiclassic site of Cerro Zapotecas, near Cholula (Salomón 2006).

The general sequence for Central Mexico is therefore a Classic Period tradition dominated by polished, monochrome wares that are replaced by red-painted bichromes sometime around the 6th century AD. Within the PAT survey area, this general pattern is confirmed in stratigraphic excavations. Strata containing large proportions of Classic Period markers are frequently overlain by contexts that include a variety of a new type of red-on-orange and red-on-cream decorated ware that Sheehy (n.d.) called Coxcatlan. This type and its constituent varieties were defined and named based on its similarity to a type of the same name found in the Tehuacan Valley. In the PAT survey area, the Coxcatlan varieties include Orange, Cream, Gray, Brushed, Black-on-Orange, Black-on-Cream, Red-on-Orange, and Red-on-Cream. Of these, only the red painted varieties are counted as markers for the Epiclassic Period. This evaluation was made

based on their earlier position in the Tehuacan Valley sequence relative to black painted varieties (MacNeish, et al. 1970). Mixing within lots in PAT stratigraphic excavations was too great to discern their relative temporal value.

The stratigraphic position of Coxcatlán red-painted bichrome ceramics in the Tepeaca area and their similarity to those found in the Tehuacán Valley make it possible to define three ceramic markers for the Epiclassic Period in the PAT study area. These are: Maxcha Reddish Brown, Thin Orange Feo, and Coxcatlán Red-Painted Bichromes (Table 3-4).

Marker	Surface			Excavation	
	n	% Period	# Colls	n	% Period
Maxcha Reddish Brown	17,823	66.78%	4,779	1,923	40.69%
Thin Orange Feo	7,322	27.44%	3,473	1,585	33.54%
Coxcatlán Red Painted Bichrome	1,543	5.78%	975	1,218	25.77%
Totals	26,688	100.00%		4,726	100.00%

Table 3-4: Thin Orange types defined by Sheehy (n.d.)

Maxcha Reddish Brown

Maxcha Reddish Brown is a fairly coarse ware with a moderately gritty to very gritty, coarse-textured paste. The core is generally fairly thin. Surface treatment is comprised of a thick, dark reddish-brown slip that commonly exhibits surface cracking. Burnishing is fairly even, but somewhat crude in that burnishing marks are clearly visible (Figure 3-7). The most common form for Maxcha Reddish Brown is the comal form. About half of the Maxcha sherds collected from the surface within the PAT survey area were from comals. Deeper comals (forms 130 and 131) seem to have been more common than the flatter forms (forms 125, 126, 127). This may indicate that this phase saw the first widespread use of the comal in the study area, since none of the Classic Period types were so strongly predominated by this vessel form. Much less

common forms include jars (form 17), subhemispherical bowls (form 43), and outcurved bowls (form 173).



Figure 3-7: Maxcha Reddish-Brown

Maxcha Reddish Brown appears consistently in excavation contexts overlying deposits of predominantly Classic ceramics and sometimes underlying deposits containing later Postclassic markers such as polychromes. Polychromes are generally very uncommon in strata that contain large proportions of Maxcha Reddish Brown. Maxcha usually occurs in large quantities with Thin Orange Feo and varieties of the Coxcatlán type (both discussed below). Interestingly, regular Thin Orange also occasionally appeared alongside these three in comparable proportions, though other Classic Period markers are either absent or present in very low amounts. This probably means that regular Thin Orange remained in use for quite some time after other Classic Period types fell into disuse, not surprising given Tepeaca's proximity to the area where Thin Orange was probably produced.

Maxcha Reddish Brown compares favorably with San Andrés Red from nearby Cholula, which first appears in significant quantities ca. AD 600/650 (McCafferty 2001a:36-39). As in Tepeaca, utilitarian forms like jars and comals are the most common for this type at Cholula.

Thin Orange Feo

This type generally resembles regular Thin Orange, but is much more poorly made. Like regular Thin Orange, it is well-fired with calcite inclusions, but Thin Orange Feo has a reduced core. Core thickness can be quite thin, and when present can be very vague and difficult to distinguish. Thin Orange Feo paste is gritty and coarse. The surface often has a pebbly texture and the exterior slip frequently exhibits crackling, indicating that its coarse inclusions expanded during firing to produce this effect. Some sherds also have a dark, bluish-green patina that may be the result of some kind of firing effect. The vessel surface treatment is confined to a black slip that has been burnished. Otherwise, there is no decoration (Figure 3-8).

The overwhelming majority of the Thin Orange Feo sherds recovered from the surface collections within the PAT survey area were jar body sherds. Curiously, the excavated material does not conform to this pattern. Amongst Thin Orange Feo sherds recovered from excavations, bowls outnumbered jars by over 4 to 1. The most common specific forms identified in the excavated and surface assemblages likewise did not agree. Amongst surface-collected Thin Orange Feo sherds, the outcurving bowl (form 38) was most common, whereas the crater form (form 114) was most common in the excavated material. This may reflect the fact that jar sherds tend to be larger because of their greater thickness and robusticity, which would make them easier to spot and identify during surface survey. An equally plausible explanation is that more excavations may have been situated in locations in which activity included predominantly bowls, not jars, and that the surface-collected material gives a better overall picture of the most common



Figure 3-8: Thin Orange Feo

forms for this type. Whatever the explanation, because of their undecorated, crude appearance, these vessels were likely used in everyday, utilitarian tasks, and not for use as service ware.

Thin Orange Feo is considered a marker for the Epiclassic period because of its stratigraphic relationships. In excavated contexts, it is consistently found in large quantities with Maxcha Reddish Brown and varieties of the Coxcatlán type (discussed below). These deposits routinely overlie strata that contain large amounts of Classic Period markers and occasionally underlie deposits containing high proportions of polychrome ceramics. Polychrome ceramics are either absent or scarce in deposits with large amounts of Thin Orange Feo. It is not directly comparable to any ceramic type in adjacent areas.

Coxcatlán Red Bichromes

Coxcatlán ceramics are identified by their distinctive paste composition and decorative motifs. The paste and decoration of the PAT version of Coxcatlán are similar to that found in the Tehuacan Valley (MacNeish, et al. 1970:178, 199-203). The paste has a slightly gritty, fine, compact texture and a reduced core, neither of which are commonly seen in other ceramic types within the PAT survey area. All Coxcatlán sherds have a natural orange base color produced by oxidation of the paste during firing, although some have been covered with a cream slip. The cream slip often does not extend down the full length of the exterior vessel wall, such that it gradually gives way to the original orange base color. The surface is burnished to a low luster in all examples while still retaining a matte finish. Painted decoration is executed in red and consists of a variety of geometric designs including scroll motifs, step-frets, parallel vertical and horizontal lines, and wavy-line and 'zacate' patterns (Figure 3-9). This is much more elaborate than the simple red decoration seen in the Classic Period, which was usually restricted to a red band painted around the interior and/or exterior vessel lip. Coxcatlán Red-on-Orange and Red-on-Cream occur almost exclusively in bowl forms, including outflaring walls and subhemispherical bowls, and only rarely with tripod supports.

Stratigraphic relationships in excavated contexts within the PAT survey area and cross-dates with the Tehuacán Valley sequence suggest an Epiclassic date for Coxcatlán red bichromes. In both sequences, the familiar polished monochrome tradition of the Classic Period is replaced by one that includes distinctive red-on-orange and red-on-cream decoration. MacNeish, et al. (1970:203) recognized that Coxcatlán Red-on-Orange and Red-on-Cream compared favorably both in stylistic and temporal terms with Coyotlatelco pottery in the Basin of Mexico, at least insofar as the Basin chronology was understood circa 1970. With the stratigraphic occurrence of



Figure 3-9: Coxcatlán Red-on-Natural

the Coxcatlán type overlying Classic Period contexts, the earlier occurrence of Coxcatlán Red-on-Orange relative to Black-on-Orange in the Tehuacan Valley, and with the benefit of subsequent research that has improved archaeologists' understanding of the temporal value of Coyotlatelco (Fournier and Bolaños 2007; García Cook 1981:270; Manzanilla, et al. 1996:260; Mastache 1996:29, 50; Paredes 1998:1639; Parsons, et al. 1996; Sugiura 1996:236, 2001), the Tepeaca version of Coxcatlán Red-on-Orange may be plausibly placed between AD 600 – 900.

The Early Postclassic Period (AD 900 – 1200)

The centuries following the Epiclassic see a change from red-painted to black-painted decoration in the Tepeaca area. This is the beginning of the so-called 'Aztec' ceramic tradition, as it is known both in the Basin of Mexico and elsewhere. The black-painted bichrome ceramics

that are commonly called 'Aztec' have long been recognized as a kind of horizon style that replaced the earlier red bichromes of the Epiclassic in the Basin of Mexico. Only the latest of these correspond to the populations that migrated into the Basin and later formed the core of the Aztec Empire (Chadwick 1971).

Aztec ceramics were originally seriated by Vaillant (1941) based on their appearance in successive construction phases of the Tenayuca pyramid. Vaillant began with the date of the last documented New Fire ceremony in 1507 as an endpoint to his chronology and supposed that each phase of the pyramid was constructed to commemorate such celebrations in accordance with the 52-year round of the Mesoamerican calendar. He therefore assigned temporal values to each construction phase that equaled one or two 52-year periods. He then gave the predominant type in each phase the same number as the construction phase whence it came. The result was the familiar Aztec I (AD 1247 – 1299), Aztec II (AD 1299 – 1403), Aztec III (AD 1403 – 1507) and Aztec IV (AD 1507 – 1519) typology that Mesoamericanists have used for over sixty years. By the end of the 1970s, the sequence had been modified to begin on the ethnohistoric date for the fall of Tula (AD 1150), Aztec I and II were considered to be roughly contemporaneous (Sanders, et al. 1979), and some scholars began to think that the origin of 'Aztec' ceramics may in fact lie somewhere in Puebla, having evolved out of the Mixteca-Puebla ceramic tradition (Chadwick 1971:237, 252; Parsons, et al. 1982).

More recent research employing chronometric dates from several sites in the Basin of Mexico has refined and complicated our understanding of the chronological and spatial value of these types (Parsons, et al. 1996). Using radiocarbon dates from excavated contexts in several sites in the Basin of Mexico, Parsons and his colleagues showed that the onset of Aztec ceramics was not uniform in space or time throughout the Basin. Moreover, Aztec I appeared in the southern Basin perhaps as early as the 7th century AD, and certainly throughout most of the Basin by the 10th century, hundreds of years earlier than the traditionally accepted chronology.

Black-painted bichrome wares that compare favorably with Aztec I elsewhere also appear elsewhere in Central Mexico around the same time as in the Basin. In Cholula, one of the earliest Postclassic ceramic types is known variously as '*decoración negra sobre el fondo color natural del barro*' (Noguera 1954:99-110), 'Minutti Black on Orange' (Mountjoy and Peterson 1973:31, Table 1), or 'Cocoyotla Black on Natural' (McCafferty 2001a:55-58) and compares favorably with Aztec I/II in the Basin. In the Tehuacan Valley, the analogous ware is a black-painted variety of the 'Coxcatlan' type. Although originally dated to the Late Venta Salada Phase (AD 1100 – 1519), the long phase distinctions and few radiocarbon dates for this time period in the Tehuacan Valley make it difficult to determine how early it appeared with any precision (Johnson and MacNeish 1972). Nevertheless, it occurs after red-painted bichromes similar to Coyotlatelco in the Tehuacan chronology, so its relative temporal value suggests that it likewise began to appear by around the 11th or 12th century, if not earlier.

In Tepeaca, the local ware equivalent to Aztec I/II is called Tepeaca Black-on-Orange (Table 3-5). This type and its related varieties occur abundantly throughout the PAT survey area and constitute the most abundant marker for the Early Postclassic Period. In excavations, it is consistently found in contexts overlying or contemporaneous with red-painted bichromes and underlying strata that are rich in polychrome pottery, which is diagnostic of the latter part of the Postclassic Period. Another less common black-painted bichrome that is often found associated with Tepeaca Black-on-Orange is the black-painted variety of a type Sheehy (n.d.) denominated 'Coxcatlan' by virtue of its similarity to the Tehuacan Valley ware. As in the Tehuacan Valley, Coxcatlan Black-on-Orange postdates Coxcatlan red-painted bichromes in the Tepeaca area. The other two markers for the Early Postclassic period, Tlacamilco Orange and Tecamachalco Polychrome, are associated with this period because of their frequent co-occurrence with Coxcatlán and Tepeaca Black-on-Orange types in excavated contexts. They are also frequently

found in strata that are interposed between Epiclassic deposits and deposits with large quantities of Cholula-like and Mixteca-Puebla style polychrome types.

Marker	Surface		Excavation		
	n	% Period	# Colls	n	% Period
Tepeaca Black-on-Orange	32,035	68.3%	5,980	1,531	54.9%
Tlacamilco Orange	10,739	22.9%	3,958	735	26.4%
Coxcatlan Black-Painted Bichromes	3,612	7.7%	1,788	504	18.1%
Tecamachalco Polychrome	540	1.2%	443	19	0.7%
Totals	46,926	100.0%	12,169		100.0%

Table 3-5: Early Postclassic diagnostic ceramic types

Tepeaca Black-on-Orange

Easily the most abundant Postclassic ceramic type in the PAT survey area, Tepeaca Black-on-Orange is likely a local version of the Aztec I painted type found in the Basin of Mexico. All sherds of this variety were high-fired, indicated by their metallic ring when tapped. Core thickness tends to be quite thin, if present at all. The paste has a compact, slightly gritty, fine texture. The natural fired surface of the vessels was an orange color, but many sherds seem to have an orange-colored light slip or self-slip which is burnished to a low luster, over which geometric designs were painted in black (Figure 3-10). The most common painted design was a simple black band around the interior and/or exterior of the vessel rim, but other designs include scroll, step-fret, flower, 'tooth', and parallel line motifs. Tepeaca Black-on-Orange appears almost exclusively in bowl forms, especially simple, subhemispherical, hemispherical, and conical, convex-sided forms (forms 43, 44, 45).



Figure 3-10: Tepeaca Black-on-Orange

Like most Postclassic markers, the placement of Tepeaca Black-on-Orange in the Postclassic is supported by stratigraphic relationships, although the exact timing of its advent is difficult to discern because of sometimes heavy mixing apparent in some of the excavation lots. It often occurs in strata overlying Classic Period contexts, occasionally co-occurring with types from earlier periods like Maxcha and even Classic types such as Thin Orange and Tlachiquero. It almost never co-occurs with polychrome types, however, suggesting that it does not belong to the Late Postclassic. The strongest justification for associating it with the Early Postclassic period comes from cross-dates with Aztec I, with which it shares significant stylistic similarities. Though once considered a late development, the advent of Aztec I pottery in the Basin of Mexico is now believed to have occurred much earlier, perhaps as early as the 9th or 10th centuries. This is based primarily on a group of radiocarbon dates from sites within the Basin of Mexico at Xaltocan and in the Chalco area (Parsons, et al. 1996). McCafferty (2001a:55-58; Figure 5.4) has

also reported a type called Cocoyotla Black-on-Natural that also likely corresponds to the Early Postclassic period, ca. AD 900, and which compares favorably to Aztec I (Noguera 1954:282).

Tlacamilco Orange Comals

Another abundant Postclassic type is a high-fired orange ware that occurs almost exclusively in the comal form within the PAT survey area. Of the surface sherds identified as Tlacamilco Orange, 98% occur in comal forms. Tlacamilco Orange paste tends to be very gritty, coarse, and porous with a clear, thick core. The upper surface (i.e., the cooking surface) is well burnished to a low luster and occasionally a high polish on part of the surface. The underside exhibits fine pock marks, possibly from the mold used in their manufacture, and the base was left unfinished. Comal edges tend to exhibit smoothing marks (Figure 3-11; Sheehy n.d.). Of the sherds that could be identified with regard to specific forms, comal forms 125, 127, and 130 were the most common.

The best evidence available for associating Tlacamilco Orange with the Early Postclassic period was its near constant co-occurrence with black-on-orange decorated types in excavated contexts, especially Tepeaca Black-on-Orange. Since it is sometimes found in association with polychromes, it is likely that this type was also used in the Late Postclassic period.

Coxcatlán Black-on-Orange and Black-on-Cream

It is during the Early Postclassic period that the Black-on-Orange and Black-on-Cream varieties of the Coxcatlán type became common in the PAT survey area. This variety shares the same vessel forms, surface treatment, paste type, and design elements with the Red-on-Orange variety, with the sole distinction that the painted designs are now executed in black instead of red



Figure 3-11: Tlacamilco Orange Comals

(Figure 3-12). The association of this variety with the period following the one in which Red-on-Orange appears is not based on stratigraphy. As mentioned in Chapter Three, the lots from the stratigraphic excavations undertaken within the PAT survey area were too mixed to allow this distinction to be made. The main rationale comes from the relative sequence in the Tehuacan Valley, where Coxcatlán Black-on-Orange occurs in the Late Venta Salada phase, postdating the development of Red-on-Orange in the Early Venta Salada (MacNeish, et al. 1970). The Black-on-Cream variety is not present in the Tehuacan Valley.

Admittedly, a closer inspection of MacNeish, et al.'s data suggests that both red- and black-painted Coxcatlán ceramics co-occur in large quantities during the Late Venta Salada (MacNeish, et al. 1970:Table 6), so these may in fact be contemporary. However, since the later phases of the Tehuacan Valley ceramic sequence are still imperfectly understood, and the general temporal trend in Central Mexico is for black-on-orange ceramics to overlap with, but ultimately



Figure 3-12: Coxcatlán Black-on-Orange

outlast red-on-orange types, Coxcatlán Black-on-Orange and Black-on-Cream are here considered to follow Coxcatlán Red-on-Orange and Red-on-Cream. In terms of absolute dates, it is worth mentioning that there are only four radiocarbon dates for the entire Venta Salada phase, all of which come from just two strata in one excavation unit, and all of which cluster around the 10th and 11th centuries AD (Johnson and MacNeish 1972: Table 9; Figure 2). Neither of these two strata contained large amounts of Coxcatlán Red-on-Orange, Red-on-Cream, or Black-on-Orange, and there are no chronometric dates for strata in which they do occur in large amounts. Ultimately, this is a problem that must be addressed with further empirical study, both within the Tehuacan Valley and the PAT survey area.

Tecamachalco Polychrome

The paste and decorative motifs for this Tecamachalco Polychrome are identical to varieties of Coxcatlán red-painted bichrome and Coxcatlán black-painted bichrome. It is distinguished from the bichrome types by its incorporation of both red *and* black painted designs instead of just one or the other. Like the Coxcatlán types, designs are executed on a natural, orange, or cream-slipped background (Figure 3-13). Bowl forms are the most common. Although this type does rarely occur in forms generally associated with the Postclassic Period in Central Mexico such as open-format plates and bowls with tripod supports (forms 108 and 109), the most common forms are closed-format bowls (forms 44, 45).

This type is probably the earliest polychrome found in the PAT survey area. A kind of combination between the red-painted bichromes of the Epiclassic and the black-painted bichromes of the Early Postclassic, it is one of the rarest ceramic types present in surface collections and excavated contexts. As such, it is difficult to place this type using stratigraphy, since it is not possible to determine whether the small quantities present in excavation strata were deposited along with other more reliable markers because of their equivalent temporal value or as the product of mixing. The type's shared attributes with other Early Postclassic markers suggest an Early Postclassic date, however.



Figure 3-13: Tecamachalco Polychrome

The Late Postclassic Period (AD 1200 – 1519)

During the last centuries preceding the Spanish Conquest, the ceramics of the Puebla-Tlaxcala region quickly developed into their most elaborate and intricate manifestations. The explosion of color and design evident in Postclassic polychrome wares (variously called Mixteca-Puebla Polychrome, Cholulteca Polychrome, and Chalco Polychrome) made them much-sought-after service vessels throughout the Puebla-Tlaxcala region, the Mixteca, and the Basin of Mexico.

Probably because of their striking decoration, Postclassic polychrome service wares have received the most scholarly attention (e.g., Lind, et al. 1990; McCafferty 2001a; Müller 1978; Noguera 1954; Plunket 1995; Hernández 1995) and plain, utilitarian wares from this period are

poorly understood in comparison. This is particularly problematic when using surface ceramics to plot settlement patterns. Without good information about the distribution mechanisms that governed access to polychrome service wares (e.g., market exchange, elite prestation, etc.), it is difficult to know how reliably they can be used as a proxy for human settlement. Even if cultural practices (sumptuary norms and restrictions, for example) did not restrict access to fine service wares, differences in purchasing power between social strata may have resulted in differential spatial distribution on the landscape. Whatever the case, any settlement pattern reconstruction that relies exclusively on the fine service ware is necessarily an incomplete picture.

The polychrome ceramics in the PAT study area are almost identical to the polychromes prevalent in the latest phases of Lind, et al.'s (1990) sequence for Cholula. Indeed, Sheehy (n.d.) dubbed one of the most abundant polychrome types 'Cholula Red Polychrome' because of the close resemblance it had with what Lind and his colleagues called 'Catalina' (Lind, et al. 1990). This type, which corresponds to Lind, et al.'s Mártir Phase (AD 1350 – 1519), is equivalent to Noguera's (1954) *polícroma laca* and covers several types in McCafferty's (2001a) typology, all of which correspond to his latest Middle and Late Cholollan phases (ca. AD 1300 – 1519).

I have identified eight ceramic markers for the Late Postclassic Period in the Tepeaca area (Table 3-6). Most of these are polychrome types that have been associated with this latest period on the basis of their very close stylistic similarities with the latest-occurring polychromes at Cholula. Other than examples that were too eroded to identify more specifically with regard to type, these include Jaguar Polychrome, Cholula Red Polychrome, Trellis Polychrome, and Coyotl Orange Polychrome. Also included are Cuachichila Polished Red, Águila Black-on-Red, and Aztec III, types that are consistently associated with the last three centuries or so before the Spanish Conquest in the Basin of Mexico.

Marker	Surface		Excavation		
	n	% Period	# Colls	n	% Period
Other Polychrome/No ID	6,569	38.5%	2,818	361	22.1%
Jaguar Polychrome	4,718	27.7%	2,124	712	43.6%
Cholula Red Polychrome	2,445	14.4%	1,461	205	12.6%
Cuachichila Polished Red	1,610	9.5%	1,028	87	5.3%
Trellis Polychrome	639	3.8%	434	84	5.1%
Aguila Black-on-Red	486	2.9%	391	51	3.1%
Aztec III	303	1.8%	289	15	0.9%
Coyotl Orange Polychrome	273	1.6%	204	119	7.28%
Totals	17,043	100.00%	8,749		100.00%

Table 3-6: Late Postclassic diagnostic ceramic types

Jaguar Polychrome

The most common polychrome type found in the PAT survey area is Jaguar Polychrome (Table 3-6), so named for its distinctive decoration, which always includes rows of black dots, usually around the rim of the vessel. The paste is slightly gritty, but fine in texture and consistency varies from compact to porous. Like most other polychrome types found around Tepeaca, Jaguar Polychrome has a white underslip covered by a reddish-orange overslip that was applied in a single, thin coat in an apparently hurried manner, such that the brush strokes are visible and the otherwise dark overslip allows the underlying white to show through, giving the vessels a streaky, orange appearance (Figure 3-14). Design elements, such as the aforementioned dots, as well as concentric circles, ‘hourglass’ motifs, and red or black lines encircling the rim are then painted on top of this reddish-orange background.

Tripod plate and bowl forms predominate amongst Jaguar Polychrome sherds recovered from both excavated and surface contexts. The interior (i.e., the surface on which food would have been placed) was consistently polished to a high luster, giving the finish a waxy feel. In



Figure 3-14: Jaguar Polychrome

contrast, the exterior or underside was left matte, with the exception of the upper 2-3 cm below the lip, which was finished in a similar fashion to the interior of the vessel. There are two general types of tripod supports: 1) the geometric ‘merlon’ or ‘*almena*’ supports and 2) zoomorphic supports.

Jaguar Polychrome bears a striking similarity to polychrome types found in Cholula, especially that which Lind, et al. (1990) called Nila Polychrome, distinguished by its white underslip and brush-applied, reddish-orange overslip, on top of which were painted a wide variety of red and black designs, including black dots. Nila is the most abundant polychrome type within Lind, et al.’s (1990) Mártir Phase (AD 1350 – 1520) and includes types that Noguera (1954) categorized under type names such as “decoración sencilla” and “roja y negra sobre anaranjado” (Lind, et al. 1990). In McCafferty’s (2001a:45-47) typology and chronology, Jaguar Polychrome would be equivalent to Apolo Black-and-Red-on-Orange, Sencillo Subtype, which dates from AD

1150 through the Conquest. Ceramics similar to Jaguar Polychrome have also been found in Cuauhtinchan to the immediate west. Zaragoza (1977) reportedly found ceramics matching the description of Jaguar Polychrome in abundance, though she considered them to be a slightly earlier development, placing them in her Cuauhtinchan Phase (AD 1150 – 1300). On balance, cross-dates from ceramic sequences in adjacent areas confirm a Late Postclassic date for Jaguar Polychrome. Recently, the subtle differences between Jaguar Polychrome at Tepeaca and Nila Polychrome from Cholula have been used to infer the existence of a political buffer zone between Cholula and Tepeaca, which may indicate some kind of political, economic, or ethnic boundary during the Late Postclassic (Lind and Barrientos 2008).

Cholula Red Polychrome

Cholula Red Polychrome paste is somewhat gritty, has medium texture (neither coarse nor fine), and varies from compact to porous in terms of consistency. Like Jaguar Polychrome, Cholula Red Polychrome has a white underslip covered by a reddish orange overslip, on top of which designs in black and red are painted. Sherds are polished to a high luster on the interior and exterior of the vessel. In contrast to Jaguar, the overslip on the Cholula Red type was applied in a much more uniform fashion, such that the brush strokes are not visible. Another common decorative technique on Cholula Red Polychrome is to leave portions of the white underslip uncovered by the orange overslip and outline these with black or red, drawing attention to the designs executed in this way. Finally, the interior of Cholula Red Polychrome vessels were always painted in a monochrome red color, from which the type derives its name (Figure 3-15).

Cholula Red Polychrome vessel forms are also very different from those most common in Jaguar Polychrome. Unlike Jaguar, Cholula Red Polychrome occurs in much more ‘closed’ forms than the plate and bowl forms common in the former type. The most common are simple



Figure 3-15: Cholula Red Polychrome

hemispherical bowl forms (form 44, 162), followed by very steep-sided vessels (form 154), which were perhaps used for serving and/or drinking liquids, conical bowls (form 39), and outcurving bowls (form 38).

Cholula Red Polychrome compares most favorably with Lind, et al.'s (1990) Catalina Polychrome, which, like Nila, becomes most common during the Mártir Phase (AD 1350 – 1520) at Cholula. Lind, et al. (ibid.) note that Catalina was likely a higher-value good in prehispanic times, as its fine manufacture relative to Nila Polychrome implies more production steps and a higher degree of labor investment. If this is an accurate assessment of the type's value, the restricted variety of forms at Tepeaca may reflect not only its function, but also how it was procured and distributed (e.g., market exchange, tribute, elite gifting, etc.). In McCafferty's typology, it corresponds with Coapan Laca, which he dates to the beginning of the 15th century

AD through the Spanish Conquest. In Noguera's (1954) original classification, it would have been classified under *polícroma laca* because of its highly polished surface finish.

Cuachichila Polished Red

This distinctive type exhibits a highly polished, dark red (sometimes called 'guinda') monochrome slip, which occasionally covers only the vessel interior and the upper part of the exterior, with the bottom portion of the vessel left natural and unburnished. The slipped portions are usually polished to a very high luster, giving sherds a waxy feel (Figure 3-16). In a few rare cases, this type has incised or punctate decoration on the vessel interior or exterior. Paste tends to be slightly gritty but has a fine texture overall. Paste consistency varies from compact to porous. It occurs almost exclusively in bowl forms, with conical (form 39), subhemispherical (form 43), and outcurved bowls (form 38) the most common.

Cuachichila Polished Red is almost identical to San Pedro Polished Red, found at Cholula. The main difference lies in the prevalence of incised decoration, which is much more common at Cholula (Lind, personal communication 2008; McCafferty 2001a:71-74, personal communication 2008). McCafferty also includes a black-on-red decorated subtype within San Pedro, which is similar to Sheehy's (n.d.) Aguila Black-on-Red (discussed below). According to McCafferty (2001a:Figure 5.4), San Pedro Polished Red may begin quite early in the Postclassic period, perhaps around AD 900, and continues through the Spanish Conquest. However, he notes that it is difficult to know what the true temporal value of this type is, since it is almost always found in low frequencies. An additional complicating factor may also be a somewhat loose definition of the type, as it was used as a 'catch-all' to encompass a good deal of variety within dark red, burnished ('guinda') ceramics (McCafferty personal communication, 2008). Because of

its similarity with Águila Black-on-Red, which in turn is similar to Texcoco Black-on-Red (see below), it is considered diagnostic of the Late Postclassic at Tepeaca.

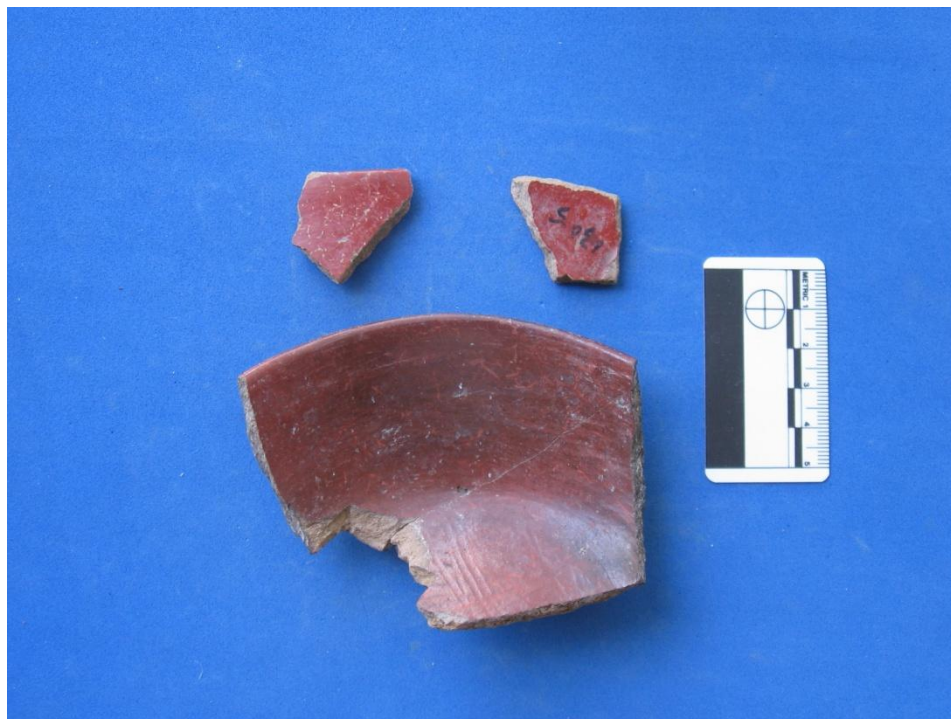


Figure 3-16: Cuachichila Polished Red

Trellis Polychrome

Trellis Polychrome is identical to Jaguar Polychrome in almost all respects, including paste, surface treatment, and many of its decorative motifs. Like Jaguar, it occurs almost exclusively in open-format, tripod plate and bowl forms, bears a white underslip covered by a hastily applied reddish-orange overslip, on top of which painted decorative motifs were applied in red, black, and occasionally white. It is distinguished only on the basis of the specific decorative motifs employed, principally series of thick, oblique, wavy lines executed in black (Figure 3-17). These occur in design fields that alternate with the other main decorative motif, consisting of red painted, concentric squares. Other motifs include black or red parallel step-frets, spirals, and

question mark-like designs. The exterior of the vessel is generally left matte and decorated with red or black horizontal lines on a wide, orange band.

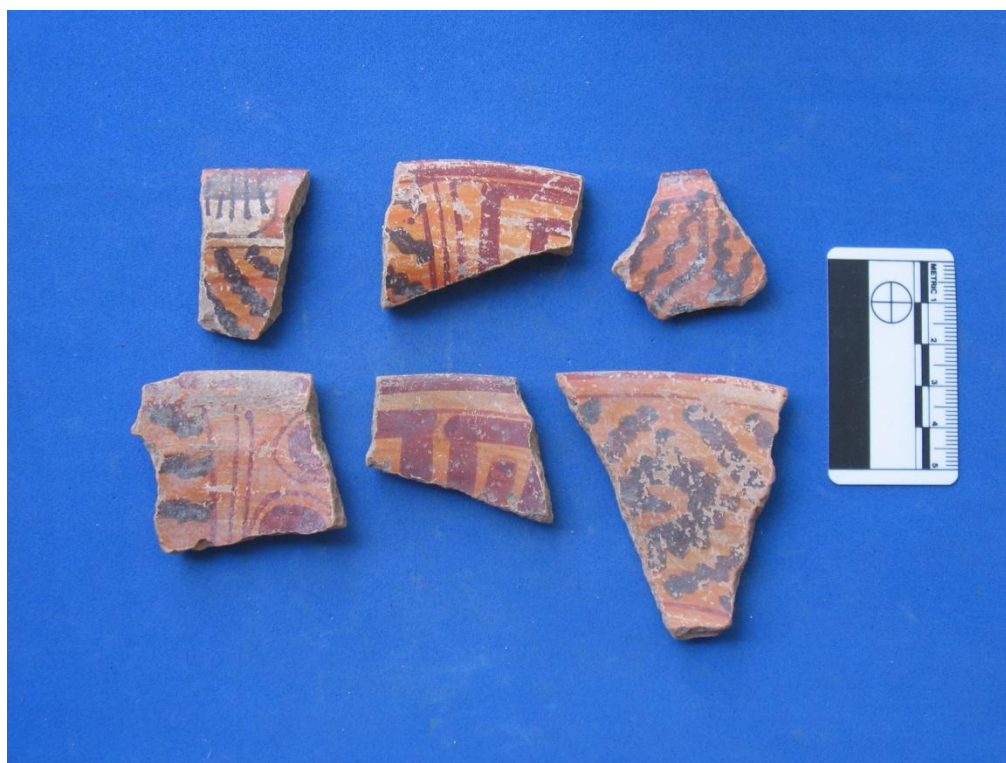


Figure 3-17: Trellis Polychrome

Like Jaguar Polychrome, Trellis is most similar to Lind, et al.'s (1990) Nila Polychrome found at Cholula, diagnostic of the Mártir Phase (AD 1350 – 1520).

Águila Black-on-Red

Águila Black-on-Red is similar to Cuachichila Polished Red, except that the dark red ('*guinda*') slip covers the whole vessel, and black painted designs have been added as decoration. The black paint is usually applied in geometric shapes or lines around the exterior of the vessel within 6 cm of the vessel lip. Occasionally, the black paint has an iridescent or 'graphite' quality. The most common motifs are simple black bands around the vessel lip and series of

interconnecting diagonal, horizontal, and vertical lines. Less common are scrolls, concentric triangles, and 'jaguar' spots similar to those found on Jaguar Polychrome. Occasionally, these are combined in various ways to form decorative bands that encircle the vessel (Figure 3-18). The most common vessel form by far is the subhemispherical bowl (form 43). Less common are hemispherical (forms 44,162), conical (form 39), and superhemispherical (form 45) forms.

As mentioned in the discussion of Cuachichila Polished Red, Águila bears a strong resemblance to the decorated subtypes of San Pedro Polished Red at Cholula, although none of the sherds recovered from the PAT survey area bore incised decoration as do the Cholula examples. According to McCafferty's chronology, this type may enter the Cholula ceramic assemblage as early as AD 900 and persist until the Spanish Conquest (McCafferty 2001a:Figure 5.4). Both San Pedro and Águila compare favorably with a type that is well known in the Basin of Mexico, which Tolstoy (1958:45-47, Figure 10) called Texcoco Black-on-Red. Parsons (1971:309) used this type primarily to define Early and Late Aztec occupation near Texcoco. Sanders, et al. (1979:466-474) used the same type (calling it 'Aztec' Red-on-Black) as a marker for their Second Intermediate Phase Three (AD 1150 – 1350) and Late Horizon (AD 1350 – 1519) phases. Since these phases are equivalent to the Late Postclassic phase for Tepeaca, Águila Black-on-Red is considered a marker for the Late Postclassic.



Figure 3-18: Águila Black-on-Red

Aztec III Black-on-Orange

One of the ceramic types most commonly associated with the spread of the Aztec Empire, Aztec III is readily identified as a black-on-orange decorated ware, with black painted decorations executed on a matte orange background (Figure 3-19). The most obtrusive distinction between this type and Aztec I (or its local equivalent, Tepeaca Black-on-Orange) is the fineness of line, which in Aztec III pottery is accomplished with a much smaller brush and possibly a potter's wheel to make possible the fine, closely-spaced concentric circles that line the interior vessel edges. Other than these concentric circles, decoration is usually confined to simple rows of dots and both horizontal and oblique wavy lines. In terms of vessel form, conical bowls (form 39), molcajete body sherds, and subhemispherical bowls (form 43) are the most common.



Figure 3-19: Aztec III

Aztec III is a well-known type in the Basin of Mexico and elsewhere, generally known to correspond to the last few centuries of the prehispanic period as well as some overlap into the Spanish Colonial period. Boas's (1911-12, 1913) early work formed the basis for subsequent studies by Noguera (1935), Vaillant (1941), Griffin and Espejo (1947, 1950) and Franco (1957). Aztec III derives its name from Vaillant's work, who divided the Aztec period based on the ceramics found in the fill of successive construction phases of the Tenayuca pyramid, phases he assumed to have been completed every 52 years. Thus, the fine-line pottery associated with the two of these building episodes came to be called Aztec III and was thought to be in use during two 52-year periods from AD 1403 to 1507 (Sanders, et al. 1979:466). Known as 'Tenochtitlan Phase' ceramics, Aztec III was considered coeval with the formation and expansion of the Aztec Empire. More recently, several studies from Morelos (Smith and Doershuk 1991), Otumba

(Nichols 1995), and Chalco (Hodge 1998:206?) have supplied radiocarbon dates which suggest that Aztec III was probably in use much earlier, perhaps extending as far back into the pre-imperial period as the mid-14th century (Hodge 1998:206). In the PAT chronology, all of these dates coincide with the Late Postclassic period (AD 1200 - 1519).

Coyotl Orange Polychrome

Coyotl Orange Polychrome is a simpler version of Trellis and Jaguar Polychrome types in terms of decorative motifs. Otherwise, it is identical to these types in terms of paste and surface finish. It shares the white underslip and brush-applied, reddish-orange overslip with these highly decorated service wares, but differs in the simplicity of its decoration. Painted decoration on Coyotl Orange Polychrome is almost exclusively limited to a black band encircling the vessel lip. In rare cases, this is accompanied by black and/or red painted designs such as simple spirals and parallel horizontal lines on the vessel interior (Medina 2000:475-476). Like Jaguar and Trellis Polychromes, Coyotl Orange Polychrome occurs almost exclusively in plate forms, occasionally with tripod supports.

Conclusions

Overall, my efforts to construct a ceramic chronology for the Tepeaca area resulted in general confirmation of the broad trends observed for the Classic, Epiclassic, and Postclassic periods in Central Mexico. This is an especially useful contribution to the archaeology of the Puebla-Tlaxcala region, wherein many basic problems of the most basic nature with regard to material culture continue to be puzzled out. These include the subdivision of the Classic Period, the unresolved origins of 'Aztec' black-on-orange ceramics, and the polychrome traditions of the

Postclassic. I believe the archaeological record of the Tepeaca area offers a useful opportunity to address these basic problems, though the data currently available permit only a general sequence to be elaborated. For my immediate purposes, however, this basic chronology is sufficient to associate the contents of the PAT surface collections with particular time periods and thereby reconstruct the settlement patterns from AD 200 to the time of the Spanish Conquest. It is to the methods and results of that reconstruction that I turn in the next chapters.