

Geoffrey G. McCafferty is a Mellon Postdoctoral Fellow at Brown University. He attended the Universidad de las Américas in Cholula, Puebla, before earning his M.A. and Ph.D. degrees in anthropology at the State University of New York at Binghamton. Having completed his dissertation on the UA-1 site, he is now planning additional research in and around Cholula. In addition to research interests in Cholula archaeology, Dr. McCafferty has published several articles on precolumbian gender in collaboration with his wife Sharisse.

5.

THE MIXTECA-PUEBLA STYLISTIC TRADITION AT EARLY POSTCLASSIC CHOLULA

Geoffrey G. McCafferty

La ciudad prehispánica de Cholula (Puebla, México) fue uno de los centros culturales y religiosos más importantes de México central, y también fue la fuente del desarrollo de la tradición estilística "Mixteca-Puebla." Estudios recientes de la cultura material de excavaciones designadas "UA-1" de San Andrés Cholula, Puebla, han resultado en nuevas interpretaciones de la cultura e historia de la Cholula Postclásica.

Excavaciones hechas en 1968 revelaron porciones de dos conjuntos residenciales, y también una amplia colección de restos culturales. La clasificación de materiales cerámicos ha producido una tipología alternativa, y se usa para sugerir revisiones a la secuencia cerámica contra las cronologías de Eduardo Noguera (1954) y Florencia Müller (1970, 1978). Este artículo ofrece un resumen breve de los resultados del análisis de la cerámica UA-1. Finalmente, se usa la cultura material de Cholula como base para interpretaciones del crecimiento de la tradición estilística "Mixteca-Puebla" en Cholula.

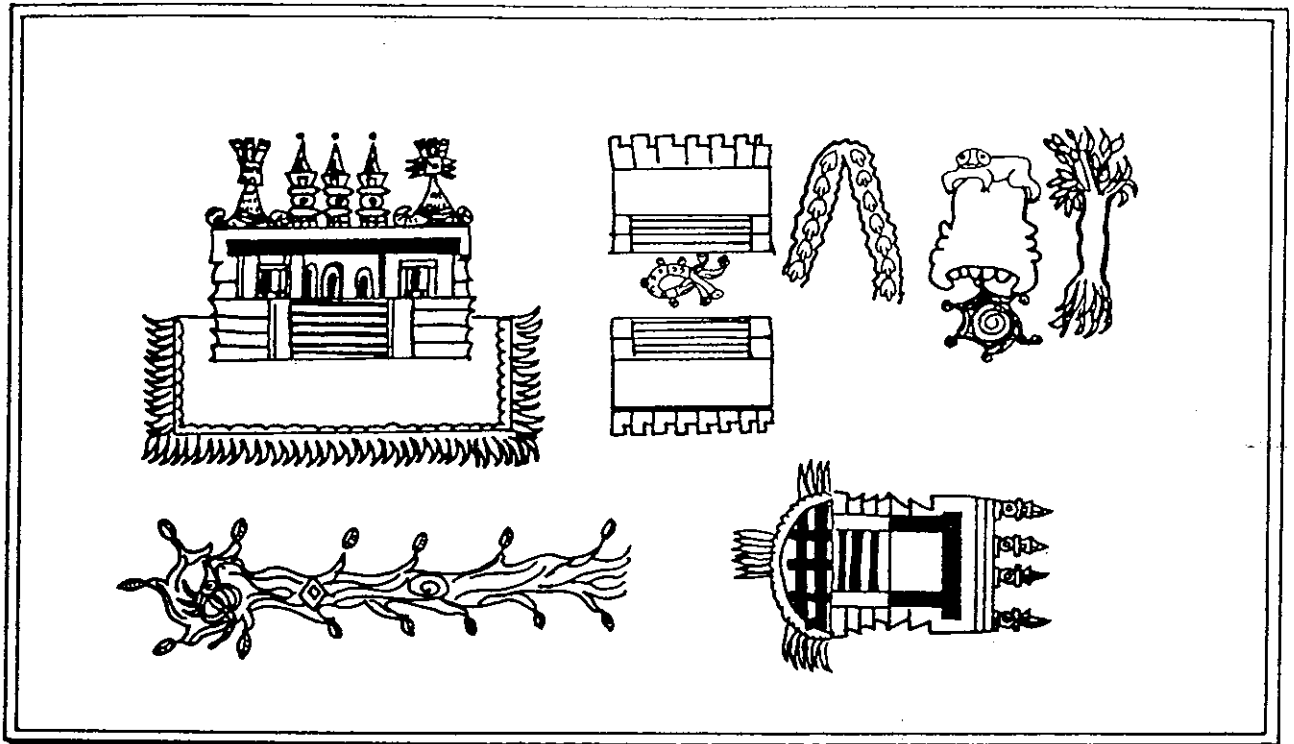


Fig. 1. Cholula center, showing Pyramid of Quetzalcoatl and abandoned Great Pyramid
(*Historia Tolteca-Chichimeca* 1976:folio 26v-27r).

Introduction

After over 100 years of often intensive investigation, the archaeological site of Cholula, Puebla, remains one of the great enigmas of Mesoamerican culture history. While its size and the obvious importance of its Great Pyramid are readily acknowledged, confusion surrounding Cholula's historical development has often led scholars to overlook the site in regional interpretations. An important exception to this generalization has been in terms of the evolution and diffusion of the Mixteca-Puebla cultural horizon following the end of the Classic period. In this case, Cholula has been suggested as the center for the development of the style, although usually with the caveat that, since little is known of the site, any specific interpretations are speculative. In a sense Cholula has been a sort of cultural "black box." Obviously something important happened there, but since no one is quite sure what it was, a diverse and sometimes contradictory range of interpretations has been advanced.

In this paper I poke some holes in the "box," shedding light on questions of site chronology and cultural affiliations, while considering the development of Cholula polychrome ceramics in the Early Postclassic period. The data used are based on my dissertation research from the UA-1 excavation on the campus of the Universidad de las Américas in San Andrés Cholula (McCafferty 1992a). After an introduction to Postclassic Cholula and its role in the Mixteca-Puebla concept, I present a revised classification of the Postclassic ceramic complex and its developmental sequence. This new information is then integrated with aspects of the Mixteca-Puebla concept to suggest alternative interpretations of the cultural context of Early Postclassic Cholula.

Historical Background for Postclassic Cholula

Information on the culture history of Cholula is available from both detailed ethnohistoric accounts and extensive archaeological investigations. Unfortunately, fundamental problems with each of these data sets have resulted in contradictory culture historical reconstructions. Specifically, whereas the ethnohistory has usually been interpreted as indicating a continuous occupation since the Classic period, the archaeological evidence has been interpreted as indicating at least a temporary abandonment of the site.

The ethnohistorical sources that deal with the historical sequence at Cholula range from mythico-historical traditions to detailed accounts of the early Spanish conquistadors and missionaries. The earliest recorded episode relates to the arrival of the Olmeca Xicallanca in the Cho-

lula area, where they were able to defeat a remnant tribe of "giants" (*quinametin*)¹ (Ixtilxochitl 1975-1977,1: 529-530). This age ended with the departure of Cholula's priest/ruler Quetzalcoatl, and the accompanying cataclysm included the destruction of the Great Pyramid of Cholula, known as Tlachihualtepetl ("Man-made mountain") in early accounts.

Wigberto Jiménez Moreno (1966:63) interpreted a related account by Torquemada (1975-1983,1:452-454) that the Olmecs ruled Cholula for 500 years before their "tyranny" was broken by Toltec immigrants. Varying interpretations of the *Historia Tolteca-Chichimeca* place the arrival of the Toltecs between A.D. 1168 and 1292 (Chadwick 1971; Jiménez Moreno 1966). Using Jiménez Moreno's interpretation of the highly ambiguous text and subtracting 500 years from these dates places the arrival of the Olmeca Xicallanca in Cholula between about A.D. 650-800. While the methodology for realizing this date is problematic, it does correspond well with archaeological evidence for Gulf Coast influence at Cholula and nearby Cacaxtla (López de Molina 1981; McVicker 1985; Padlock 1987).

The ethnohistory of Cholula is somewhat clearer following the arrival of the Tolteca-Chichimeca. These Nahuatl groups settled in what is now San Pedro Cholula (Carrasco 1971; Olivera and Reyes 1969), where a new ceremonial center was established around the Pyramid of Quetzalcoatl (Fig. 1). In some interpretations the Olmeca Xicallanca were driven out (Carrasco 1971), but Olivera and Reyes (1969) suggest that the modern municipal division between San Pedro and San Andrés Cholula reflects long standing ethnic boundaries between the two ethnic groups (McCafferty 1989a, 1989b).

The ethnohistorical tradition is laced with religious mythology, but it probably contains some degree of historical validity. According to these sources, Cholula was occupied continuously since the Classic period, with successive migrations of, first, Olmeca Xicallanca, and then Tolteca-Chichimeca groups replacing, at least to some extent, the existing populations. Prior to the publication of contradictory archaeological interpretations, this ethnohistorical sequence was widely accepted (e.g. Weaver 1972:196-199).

Beginning in 1970, archaeologists associated with the Proyecto Cholula suggested a break in the cultural sequence following the Classic period (Müller 1970:131; Dumond and Müller 1972; Dumond 1972; Marquina 1975; Mountjoy 1987). This was accompanied by the abandonment of the Great Pyramid. Reoccupation of the site occurred in the Early Postclassic period, with the hiatus lasting from about A.D. 600 to 900.

In contrast to this interpretation, William Sanders

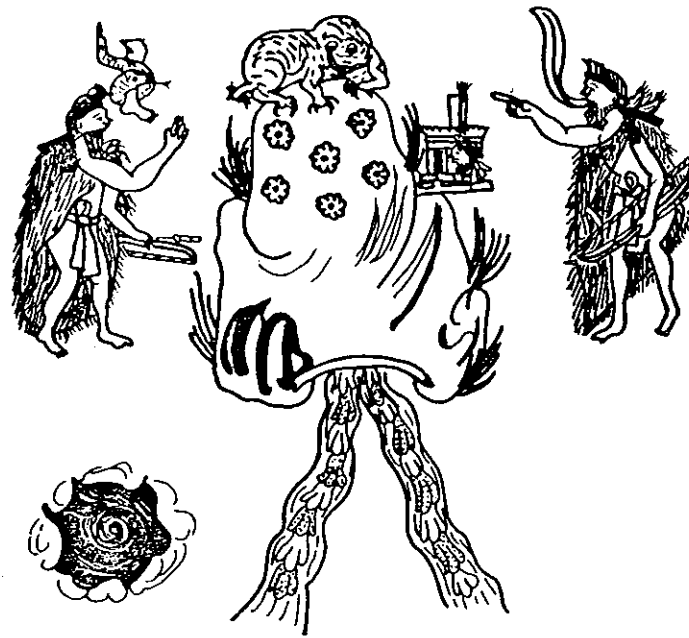
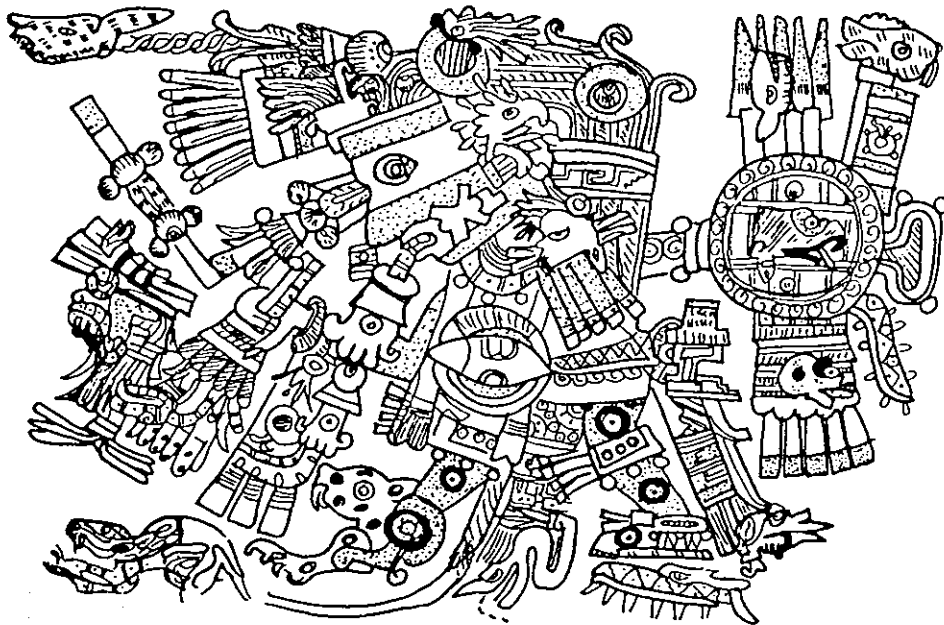


Fig. 2. The Great Pyramid Tlachihualtepetl, showing location of the palace of the Aquiach Amapane (*Historia Tolteca-Chichimeca* 1976:folio 7v).

Fig. 3. The god Tezcatlipoca with the 20 day signs (Codex Borgia 1963:17).



(1989:215) has argued that the final construction phase of the pyramid featured sculpture in a "mature Tajín Totonac style" that should date to post-A.D. 800, presumably in reference to carved altars and stelae from the Patio of the Altars south of the Great Pyramid (Acosta 1970a, 1970b; Contreras 1970). Sanders suggests that Cholula was not abandoned and that in fact it "underwent explosive growth" between A.D. 750 and 950 (Sanders, Parsons, and Santley 1979:133-134).

The final complete construction phase of the Great Pyramid was intentionally covered with yet another massive layer of adobe fill. The pyramid was either never completed or else was so thoroughly weathered (and perhaps stripped of stone building material for later construction) that it now appears as an earthen mound (McCafferty 1992b). On top of the northeast platform of this mound was an elite residence associated with the Altar of the Carved Skulls (Noguera 1937) that dates to the Early Postclassic period. Notably, a palace was depicted in the same relative location in an illustration (Fig. 2) of the Great Pyramid in the *Historia Tolteca-Chichimeca* (1976: fol. 7v), where it was associated with one of the two Olmeca Xicallanca religious leaders, the Aquiach Amanpane.

A reinterpretation of the construction history of the Great Pyramid indicates that, in fact, much of the ceremonial precinct on the south side of the pyramid was probably built during the Epiclassic and Early Postclassic periods, or precisely during the period of the Olmeca Xicallanca occupation (McCafferty 1989b, 1992a, 1992b). While important research is still needed to clarify the cultural processes involved in this transition, I suggest that the archaeological record is now consistent with the ethnohistoric accounts as to the occupational continuity of the site. Furthermore, architectural styles at Cholula indicate similarities with the Gulf Coast region, the probable point of origin for the Olmeca Xicallanca ethnic groups (Jiménez Moreno 1942; McVicker 1985).

Cholula and the Mixteca-Puebla Concept

One aspect of Mesoamerican history in which Cholula has often been included is speculation about the development of the Postclassic Mixteca-Puebla horizon. The initial presentation of the "Mixteca-Puebla" concept was made by George Vaillant (1938, 1941), who perceived a distinct "culture complex" that developed in the modern states of Puebla (especially at Cholula) and Tlaxcala, and in the Mixteca region of northwestern Oaxaca, in the period following the decline of Teotihuacan. From there the culture spread throughout Mesoamerica as the final major cultural stage of the precolumbian era.

The most comprehensive synthesis of the Mixteca-

Puebla concept was developed by H. B. Nicholson (1960, 1982). Nicholson identified a series of glyphic symbols characteristic of the style, particularly relating to the religious connotations of the god Quetzalcoatl. The prototypical example of this style is the Codex Borgia, a religious manuscript that was probably created in the Puebla/Tlaxcala area, perhaps at Cholula itself (Nicholson 1966).

Based on attributes used to define the Mixteca-Puebla style, the associated "culture complex" has been identified throughout Mesoamerica and as far as Nicaragua to the south and Sinaloa to the north. Nicholson (1982) and Jiménez Moreno (1942:128-129) have suggested the possibility that the Mixteca-Puebla style was developed by the Olmeca Xicallanca ethnic group in the Cholula region.

Michael Smith and Cynthia Heath-Smith (1980:15) advanced an important critique of the Mixteca-Puebla concept in which they argued that, instead of indicating an over-arching "culture complex," the Mixteca-Puebla concept combines three distinct elements:

- (1) the *Postclassic Religious Style*, a collection of standardized religious symbols that were popular throughout Mesoamerica, beginning in the Early Postclassic period;
- (2) the *Mixtec Codex Style*, a highly distinctive Late Postclassic polychrome narrative style most commonly associated with codices, murals and ceramics of the Mixteca-Puebla region; and
- (3) the *Mixteca-Puebla Regional Ceramic Sphere*, the local ceramic complexes of the Mixteca-Puebla which share several stylistic features.

In distinguishing these three phenomena, Smith and Heath-Smith suggest that while the "Postclassic Religious Style" was relatively widespread, the other elements were local developments that retained a high degree of regional specificity. The significance of the critique is the suggested model for the transmission of the "Religious Style" through "processes of trade, communication and religious interpretation" (Smith and Heath-Smith 1980:39), and also for the critical evaluation of often simplistic ascriptions of cultural contact.

In evaluating this model, Cholula would seem to be central to all three of these phenomena. As the center of the Quetzalcoatl cult it was probably a source of the "Postclassic Religious Style." As the possible origin for the Codex Borgia and other precolumbian codices, as well as *tipo códice* polychrome pottery, Cholula was an important center for the "Mixtec Codex Style," or at least the Borgia Group branch of it. And Cholula was certainly a major source for the production of Mixteca-Puebla polychrome ceramics.

One of the pervasive themes of the "Postclassic Religious Style" is the prevalence of iconographic elements

of the Quetzalcoatl cult, including feathered serpent motifs and *xicalcolihqui* patterns (Nicholson 1960, 1982). Ethnohistoric sources clearly place Cholula at the center of this religious movement (Rojas 1927; Durán 1971: 128-139; Torquemada 1975-1983: 386-388; Motolinia 1985:176-177).

The conquistador Bernal Díaz del Castillo (1963:202) noted that Cholula's Pyramid of Quetzalcoatl was even larger than the Templo Mayor of Tenochtitlan (see also López de Gómara [1964:130]). Gabriel de Rojas (1927) in 1581 described religious pilgrimages to Cholula from diverse parts of central Mexico, with nobles coming to the temple of Quetzalcoatl to pay tribute and receive confirmation of their authority.

The mechanism for the diffusion of the Postclassic Religious Style is problematic. In addition to the possibility of religious "souvenirs" carried back from pilgrimages, the iconography of Quetzalcoatl may have been transmitted by the *pochteca*, professional merchants affiliated with their patron, Quetzalcoatl/Yacatecuhtli, with their guild centered in Cholula (Durán 1971:262; Rojas 1927).

A possible ethnographic analogue of this process may be found in the spread of Islam in Africa by ethnically oriented Hausa merchants (Cohen 1979; Curtin 1984). The Hausa established a trading "diaspora" based on concepts of ethnic and religious identity. The network was maintained through the distribution of religious icons, creating a "safety net" of religious partisans.

In regard to the "Mixtec Codex Style," Nicholson (1960, 1982:229) suggests that the Codex Borgia was the definitive example of the Mixteca-Puebla style, based on its use of glyphic symbols relating to the religious pantheon and calendrical system (Fig. 3). The Codex Borgia and related texts are distinguishable from examples of the Mixtec group of codices (Nicholson 1966), perhaps relating to regional differences in provenience. Additional evidence for a Puebla/Tlaxcala provenience for the Borgia Group is presented in articles by Contreras Martínez (this volume), and Sisson and Lilly (this volume).

Architectural features of the Great Pyramid also provide evidence of the "Mixtec Codex Style." The woven *petate* motif occurs as both a stone panel on Edificio F (Marquina 1970:41; Fig. 4) and a painted panel on Edificio 3-1 of the Patio of the Altars (Salazar 1970). In the Mixtec codices Bodley, Selden, and Becker II, the *petate* motif is associated with the concept of royal marriage, and is translated as *tayu*, or "throne" (Smith 1973:29, 109).

In the Patio of the Altars the decorated *taludes* that encircle the plaza feature a greca-frieze motif, the equivalent of the Mixtec glyph for *ñuu*, meaning "town" or "city" (Smith 1973:38-39; Fig. 5). The Mixtec name

for Cholula was *Ñuu ndiyo*, or "Town of the Steps" (Rojas 1927; Smith 1973:72,n.98). I suggest that the view of the Great Pyramid from the south would have been of the 60 m. tall staircase sitting on a frieze of greca, creating in effect a 25-story tall place glyph for the Mixtec equivalent of *Ñuu ndiyo* (Fig. 6). The famous "Hollywood" sign pales in comparison!

The use of the *petate* and greca-frieze motifs as architectural elements on the Great Pyramid is evidence that its architects shared a similar vocabulary of symbolic meaning with the artists who painted the Mixtec codices. Not only were the motifs similar, but the contexts in which they were used were "grammatically correct." The possibility is consistent with theories of the multi-ethnic constituency (including Mixtec, Chocho-Popoloca, and Nahua groups) of the Olmeca Xicallanca (Jiménez Moreno 1966; Paddock 1987:50-51). It is also central to the concept of a Mixteca-Puebla culture complex, since it implies an eclectic blending of culture traits from the central highlands, the Mixteca Alta, and including the Gulf Coast.

The final aspect of Smith and Heath-Smith's (1980) model involves the identification of "Mixteca-Puebla Regional Ceramic Spheres." The famous Cholula polychrome pottery is the classic example of this style (Smith and Heath-Smith 1980:35-37; Nicholson 1982:243), yet contradictions between the two major ceramic studies from Cholula (Noguera 1954; Müller 1978) have had serious implications for the developmental sequence of Cholula polychrome pottery.

Eduardo Noguera's (1954) outstanding initial study of Cholula ceramics has spurred comparisons with other polychrome styles from throughout Mesoamerica, leading to the consensus interpretation that polychrome pottery developed in Cholula and was transmitted as a consequence of the diffusion of Mixteca-Puebla culture (Chadwick 1971; Weaver 1972). Noguera identified five major polychrome types, and postulated a developmental sequence for the Postclassic period in which *laca* occurred in Cholulteca I, *mate* occurred in the poorly defined Cholulteca II, and *firme* occurred in Cholulteca III.

To account for the early development of *policroma laca* in Cholulteca I, Noguera (1954:142) inferred an evolutionary relationship between it and the Classic period "fresco ware" found at Teotihuacan. This naturalistic succession fit well with the ethnohistorically derived culture history that saw Cholula as the major culture center to survive the collapse of Teotihuacan (Noguera 1954:302-303).

The second major ceramic study was conducted under the direction of Florencia Müller (1970, 1978) as part of

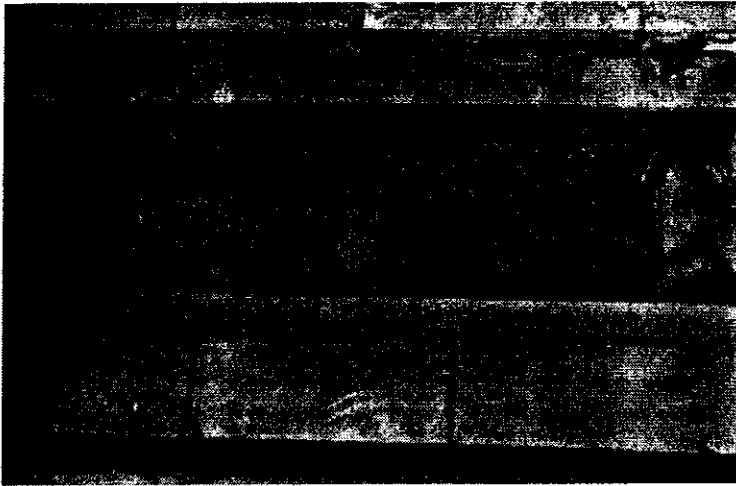


Fig. 4. Detail of the carved stone *talud* of Edificio F on the west side of the Great Pyramid, showing woven *petate* motif (photograph by P. Chilcote).

Fig. 5. Temple with greca frieze motif along the base (Codex Nuttall 1975:53d).

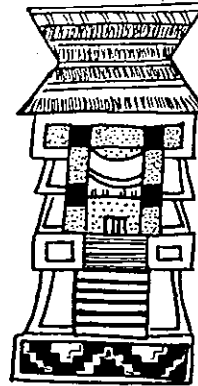


Fig. 6. View of the Great Pyramid of Cholula from the south, showing greca frieze motif on *talud* of the Patio of the Altars on either side of the central staircase (Marquina 1975:118, Fig. 77).

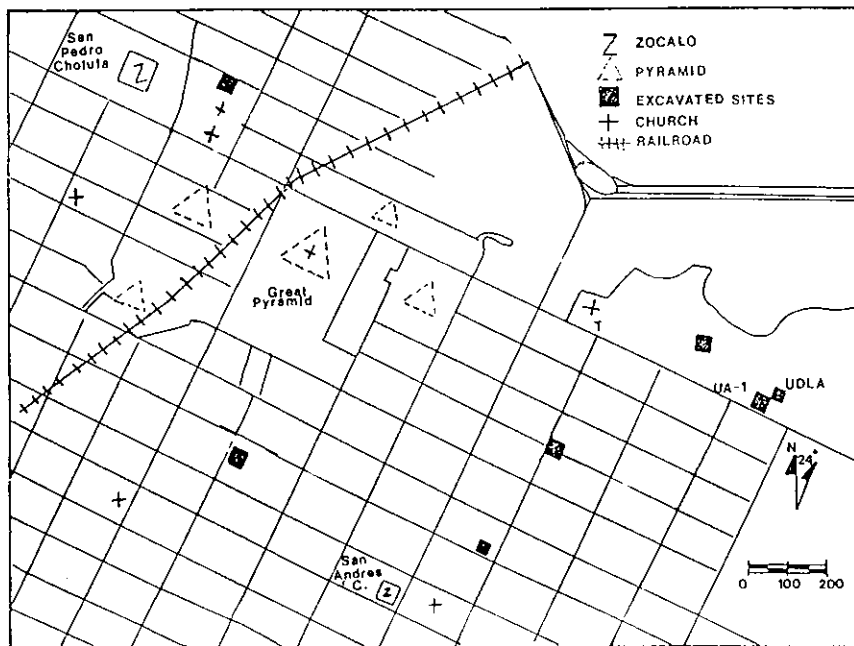
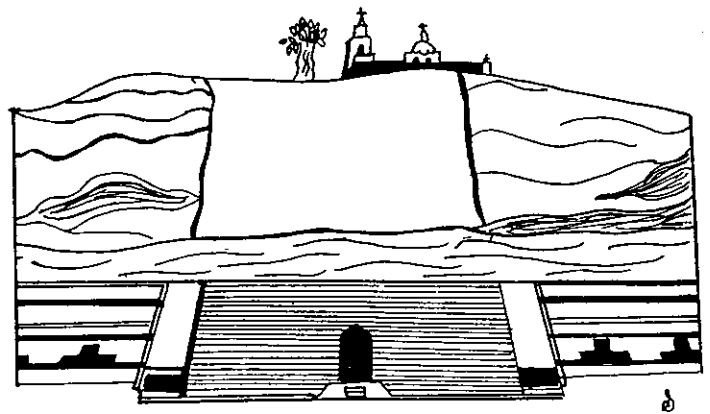


Fig. 7. Map of Cholula, showing the location of the UA-1 excavation in relation to the archaeological zone.

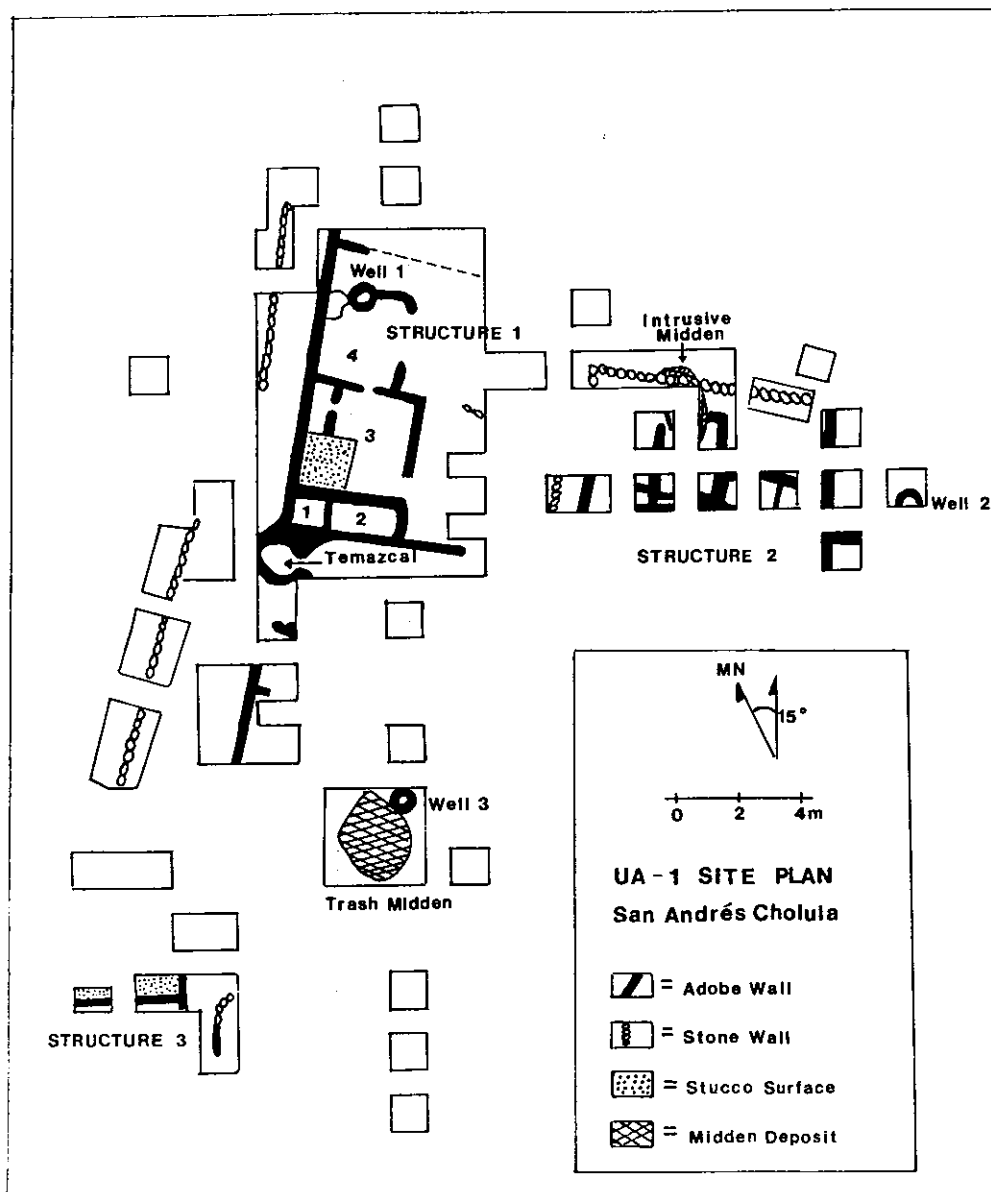


Fig. 8. Plan of the UA-1 excavation.

the Proyecto Cholula. The revised Cholula ceramic sequence proposed by Müller was directly related to the Basin of Mexico sequence, to the extent that temporal phases were even borrowed from Mexican mythico-historical traditions (but see Smith 1987). According to Müller, manufacture of all polychrome pottery occurred after A.D. 1325—the traditional date for the foundation of Tenochtitlan! This late date effectively prevented Cholula from playing a significant role in the development of the Mixteca-Puebla ceramic style, since by that time the style was well developed in other areas (but see Smith and Heath-Smith 1980:36-37).

Even as Müller was developing her revised Postclassic ceramic chronology, investigators at the Universidad de las Américas (UDLA; Fig. 7) were acquiring information that can be used to challenge it (Mountjoy and Peterson 1973). Excavations at UA-69 in the faculty housing complex produced a radiocarbon date of A.D. 1250 \pm 95 (GX-1815) from a trash pit containing 20 percent polychrome pottery representing several identifiable types (Mountjoy and Peterson 1973:30). Although this lone date does overlap slightly with Müller's Cholulteca III phase at the 1-sigma range, it also represents a diverse assemblage of polychrome types from this relative-

ly early period.

A second excavation (UA-79) discovered an extensive midden deposit that contained significant amounts of polychrome pottery relating to the Late Postclassic period (Barrientos 1980; Lind et al. 1990). The UA-79 analysis laid the groundwork for studying the UA-1 ceramics, since it raised important questions about Noguera's and Müller's Postclassic sequences. Specifically, preliminary inspection of the UA-1 materials indicated that there were fairly high concentrations of ceramic types that were not well represented in the UA-79 collections.

The UA-1 Excavation

The UA-1 site was excavated in 1968 as a summer field school on the campus of the University of the Americas, under the direction of Daniel Wolfman (1968). Four weeks of excavation exposed three main structural components (Fig. 8): two Postclassic period domestic compounds (Structures 1 and 2) and a Terminal Formative period platform (Structure 3). Also encountered were numerous features, including three wells, 19 burials, additional walls, and several trash deposits. An extensive midden deposit found in the patio probably related to the occupation of Structure 1.

The most extensively exposed of the Postclassic houses was Structure 1, which consisted of four rooms, exterior porch areas, and an associated patio (McCafferty 1992a). The floors of the rooms were covered with plaster, and the adobe walls had a thin layer of painted stucco. A small oval enclosure just south of the house was probably a *temazcal* ("sweat bath"). Because of a layer of ash and charcoal found just above the house floor, and also the high number of artifacts found *in situ*, it is likely that the house was destroyed by fire.

Room 3 was the largest of the rooms and probably served as a multi-purpose area combining sleeping space and household ritual. It featured a stucco-covered platform that Wolfman (1968:9-10) described as an "altar" (Fig. 9). This identification is supported by the discovery of possible offerings on top of it and also a small enclosed "niche" beside the platform where three anthropomorphic *braseros* were found *in situ* (Fig. 10). Similar altars have been found in Postclassic houses at Coxcatlan (Sisson 1973, 1974), Tetla-11 at Chalcatzingo (Norr 1987), and possibly at Cihuatecpan (Evans 1988).

The other large room (Room 4) was a later addition, possibly indicating the developmental growth of the household group (see also Tourtellot 1988; Healan 1989). This room was disturbed by two intrusive features: a mass burial of six individuals (including an adult female and five children) and a well.

The second domestic compound (Structure 2) was only

partially excavated, due to lack of time. It also consisted of a series of small rooms, and the construction techniques were similar to those of Structure 1. Ceramics from the floor contact and associated features indicated that these two domestic structures were not contemporaneous, with Structure 1 occupied earlier than Structure 2.

The UA-1 site provides a unique data base for the study of Postclassic Cholula (McCafferty 1992a). As one of the only residential areas ever excavated at the urban center, it contains primary and secondary deposits relating to household contexts. The wide variety of artifact classes provides an excellent opportunity for contextual interpretations of the material culture (Hodder 1982, 1986; McCafferty 1992a).

Finally, the site contained a number of primary and secondary depositional contexts from which ceramics could be sampled to develop an alternative ceramic typology and, through seriation analysis of those assemblages, construct a revised ceramic sequence.

The UA-1 Ceramic Analysis

In the UA-1 analysis, I modified the UA-79 classification developed by Michael Lind and his students (Caskey and Lind n.d.; Barrientos 1980). The goal of the ceramic typology is to maximize the number of discernible categories, while at the same time to maintain a means of relating those categories to one another (McCafferty 1992a). The result is a system based on attributes of surface treatment that identifies basic types, but with internally distinctive subtypes defined by more elaborate surface treatment, usually in the form of added decorative techniques.

For example, the type Ocotlán Red Rim is defined by its polished orange slip and red painted band on the rim (Fig. 11). This basic type may be elaborated by such techniques as incising (usually in a horizontal panel that is painted brown/black), or different degrees of painted decoration (ranging from simple horizontal bands to complex polychrome motifs). Yet, regardless of the degree of elaboration, the attributes of the basic type are maintained. Subtype variation can thereby be discriminated without losing the over-arching similarity of the type identity.

Briefly, the UA-1 typology recognizes six basic polychrome types. Two additional decorated types also occur, and in the more elaborate subtypes these can also be polychrome. Including subtypes, this system comprises at least 25 distinct categories of decorated pottery. The eight basic decorated types include:

Apolo Black and Red on Orange Polychrome is identified by a streaky orange slip over a white base coat, and then with painted decoration in either black or red (Fig.



Fig. 9. Room 3 of Structure 1, showing the altar and *brasero* niche (photograph by D. Wolfman).

Fig. 10. Detail of the *brasero* niche with *brasero* UA-1 No. 10826 *in situ* (photograph by D. Wolfman).



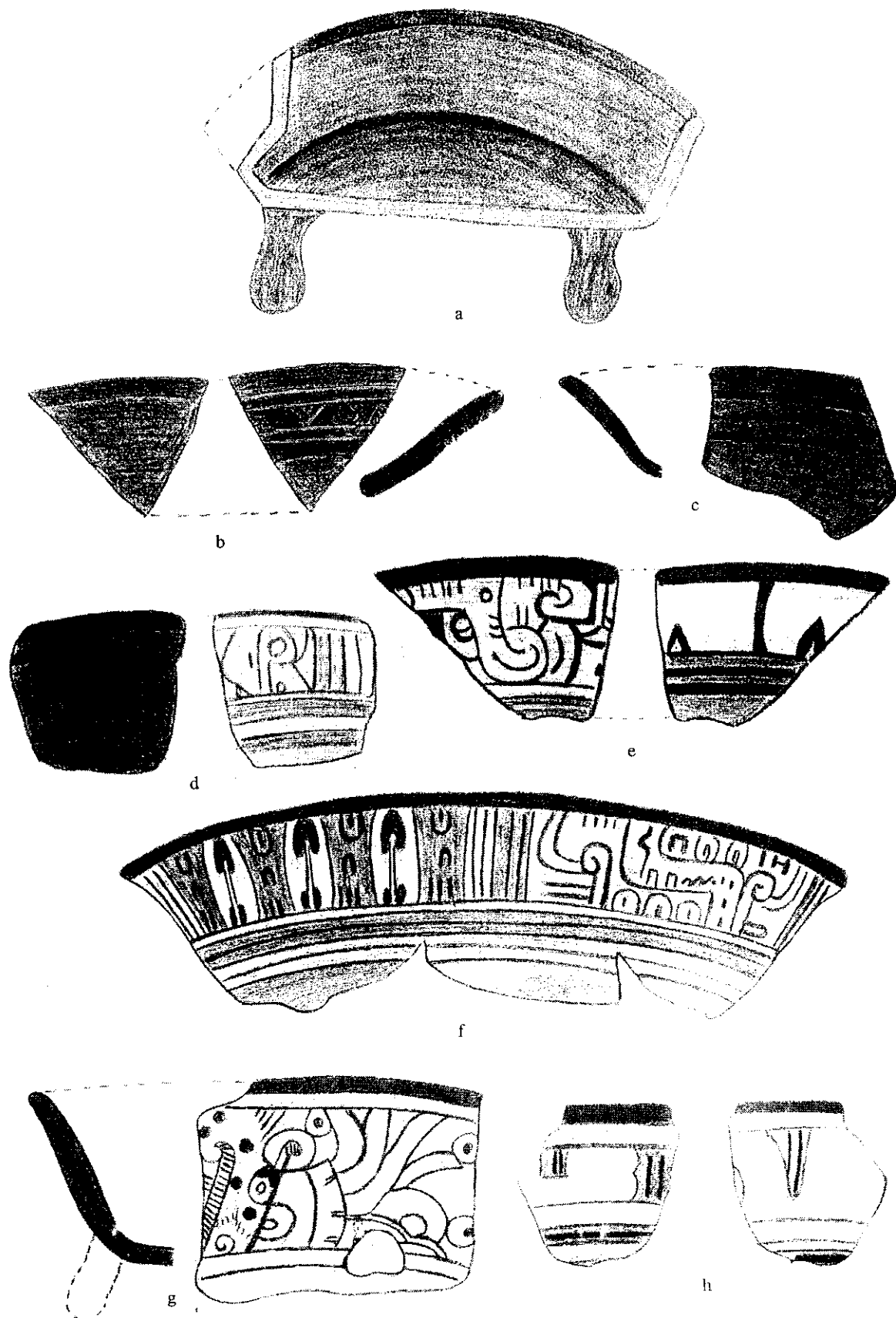


Fig. 11. Ocotlán Red Rim, showing the relationship of the basic type to different subtypes: a. Ocotlán subtype Sencillo; b. subtype Incised; c. subtype Banded; d. subtype Banded Elegante; e. subtype Elegante; f. exterior of subtype Banded Elegante; g-h. subtype Cristina Matte.

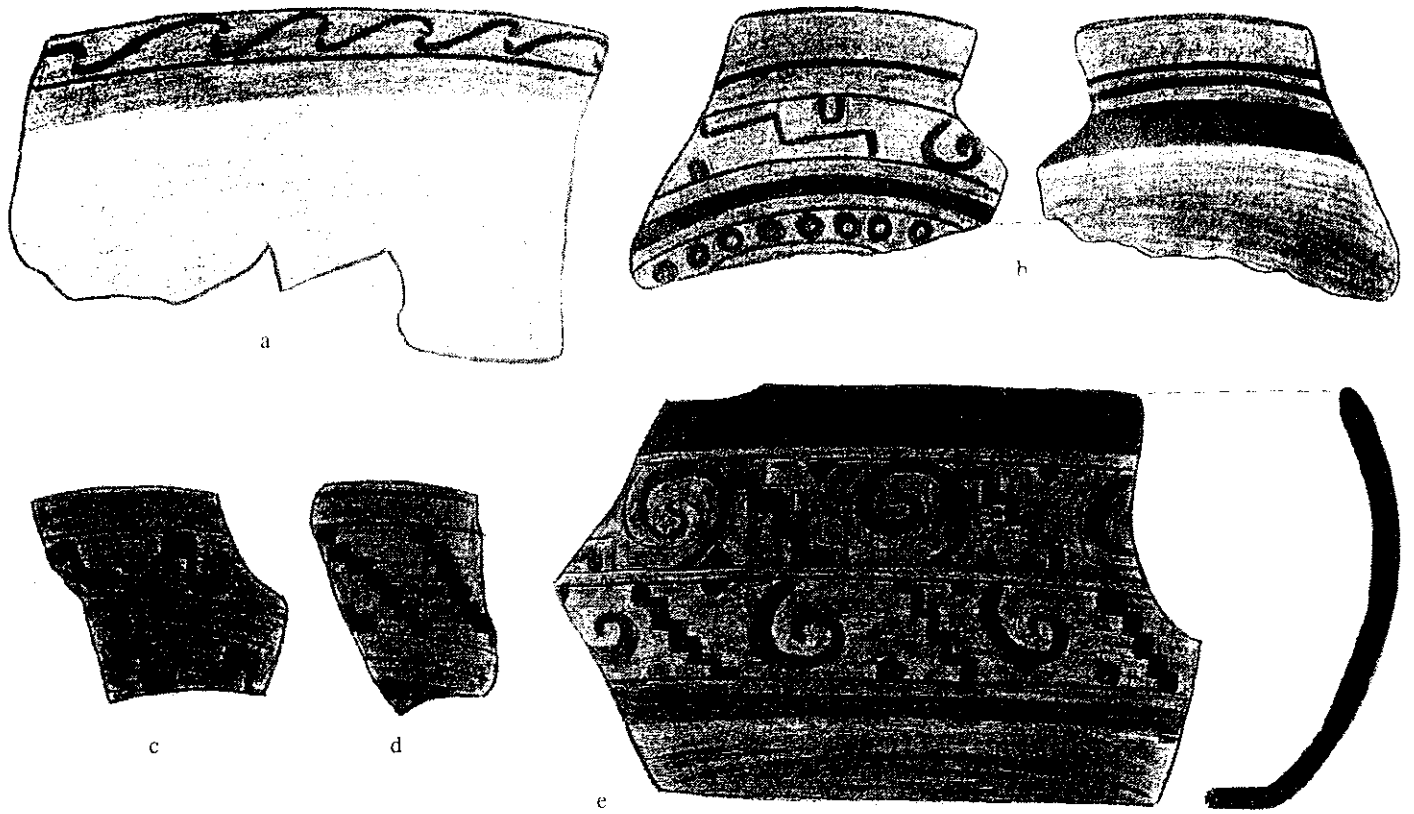
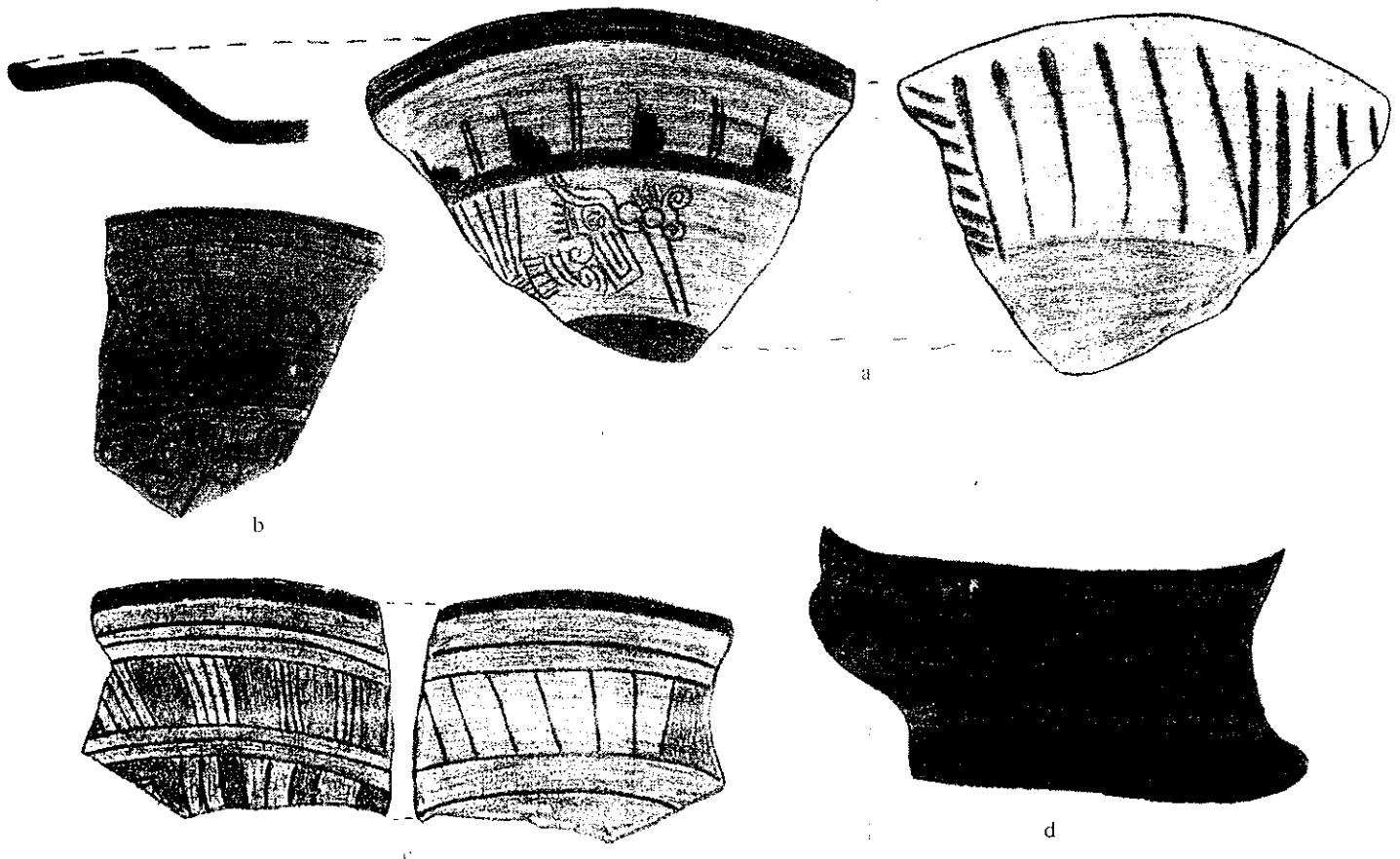


Fig. 12. Apolo Black and Red on Orange Polychrome: a. Apolo subtype Sencillo; b-d. subtype Geométrico; e. subtype Elegante.

Fig. 13. Aquiahuac Burnt Orange Polychrome: a-b. Aquiahuac subtype Sencillo; c. subtype Santa Catarina; d. subtype Zócalo.



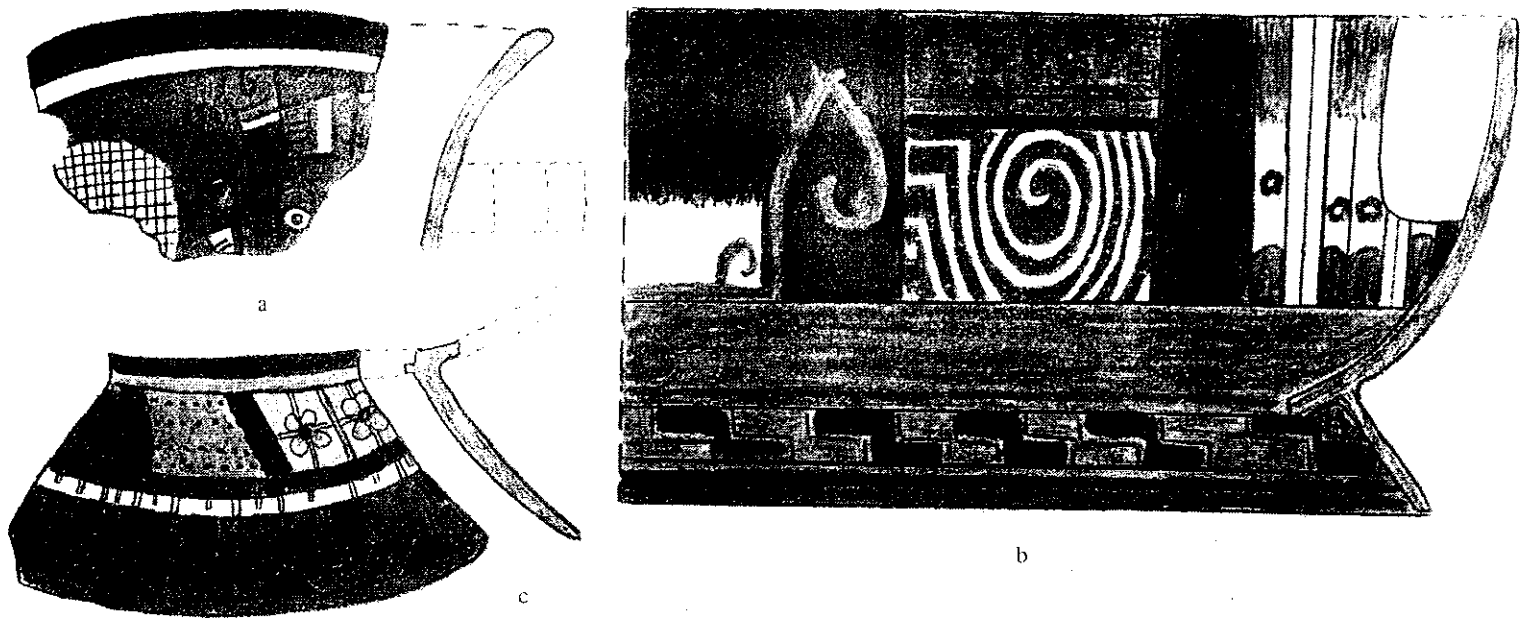
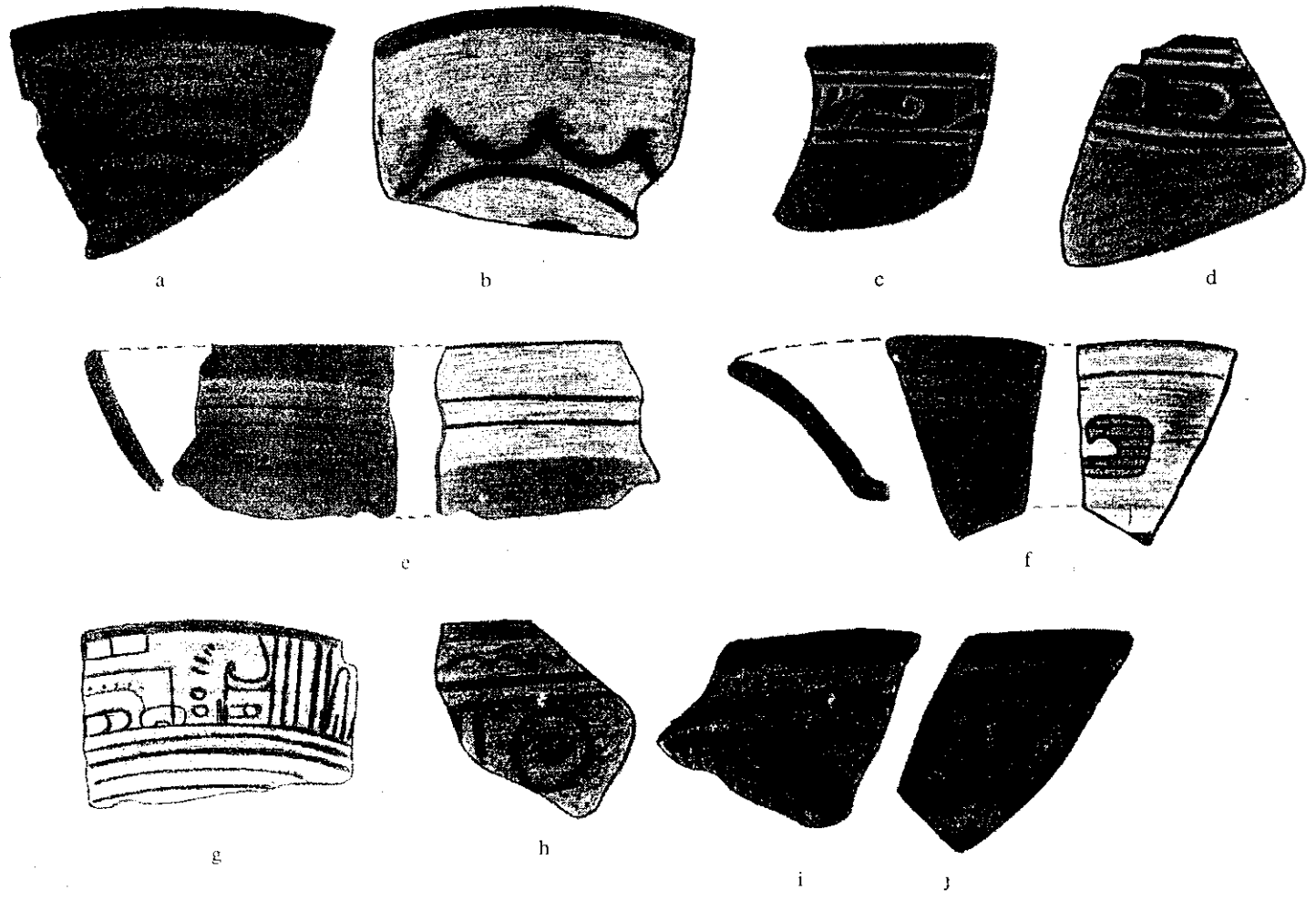


Fig. 14. Coapan Laca Polychrome. ■ See also color section.

Fig. 15. Cocoyotla Black on Natural: a-b. Cocoyotla subtype Sencillo; c-d. subtype Incised; e. subtype Banded; f. subtype Banded Elegante; g. subtype Elegante; h-j. subtype Chalco Black on Orange.



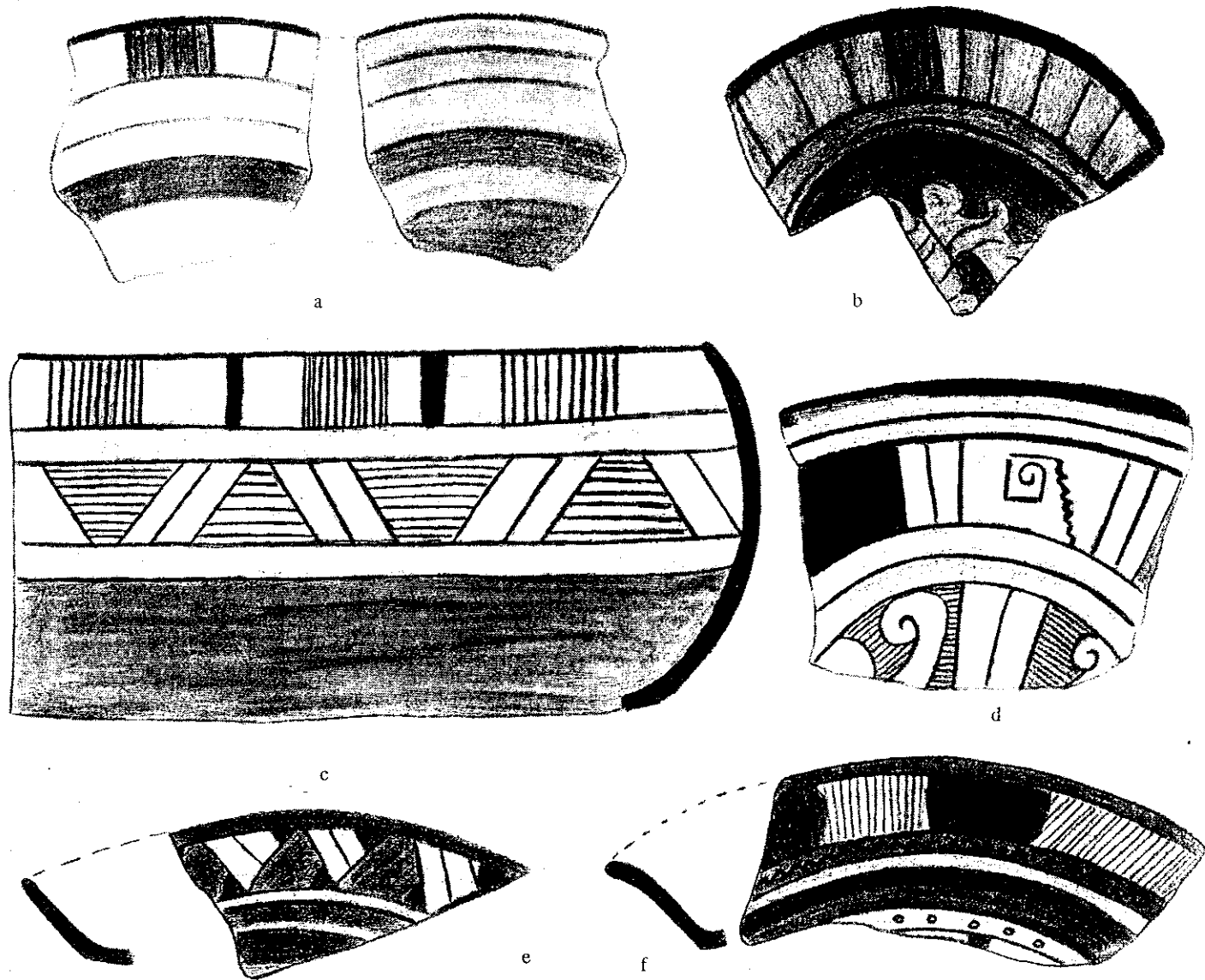
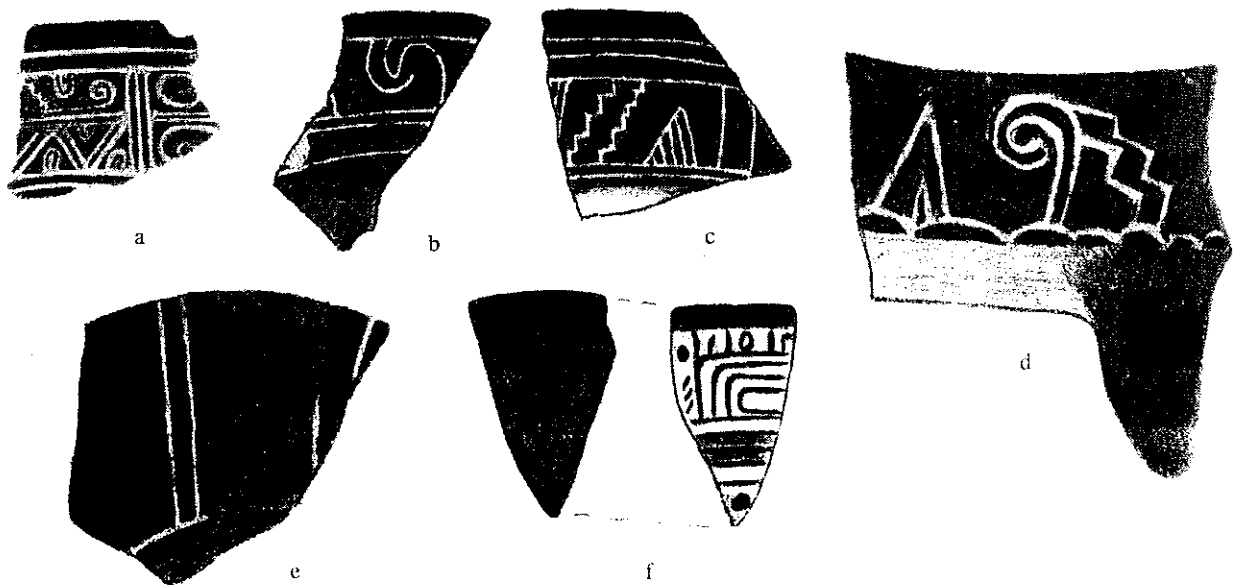
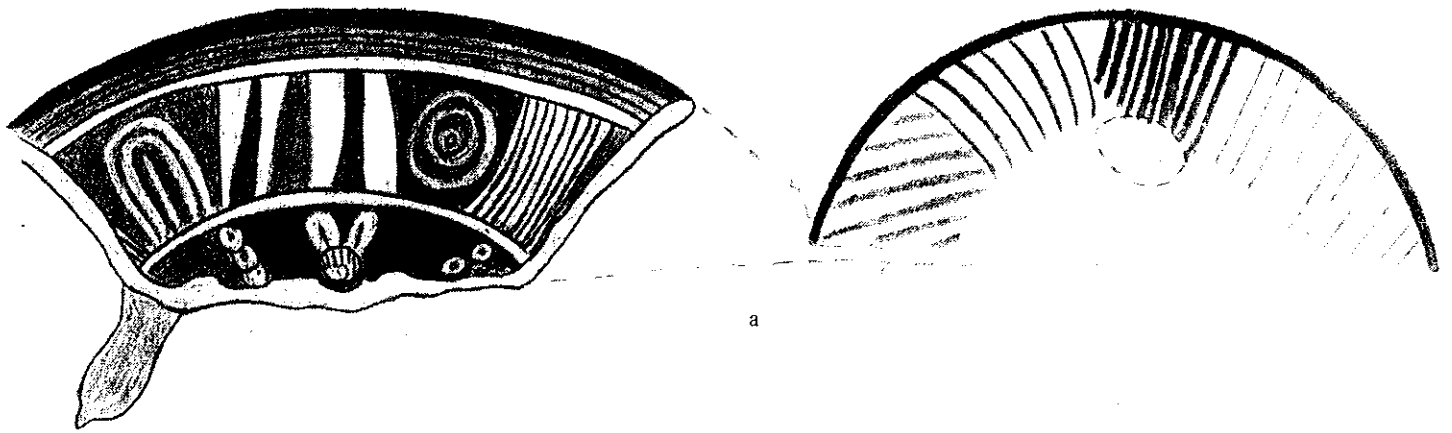


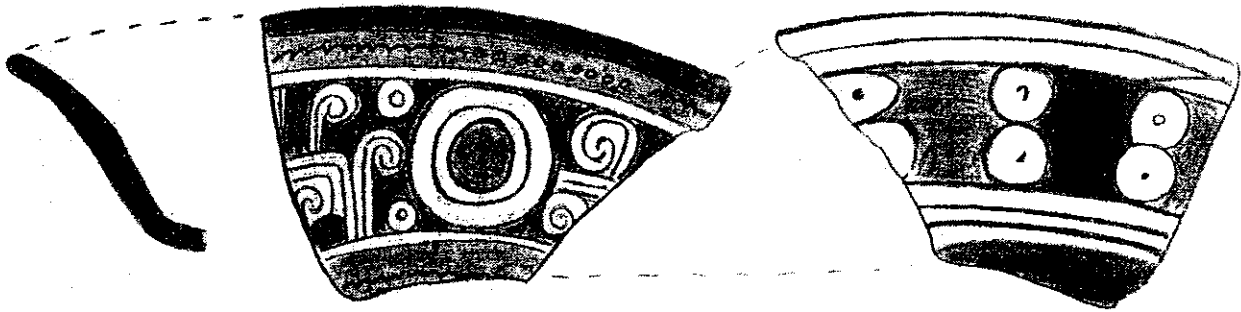
Fig. 16. Cuaxiloa Matte Polychrome: a-d. basic type; e-f. subtype Polished Cream.

Fig. 17. San Pedro Polished Red: a-b. San Pedro subtype Incised; c-d. subtype Incised Black on Red; e. subtype Incised Graphite on Red; f. subtype Elegante.

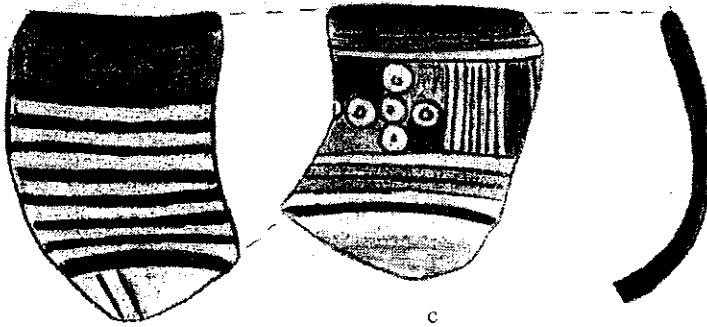




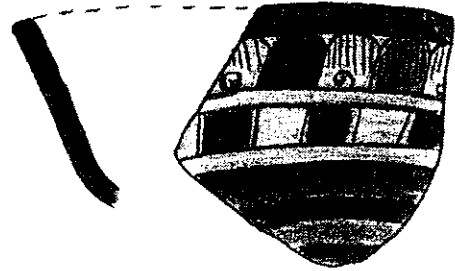
a



b



c



d

Fig. 18. Torre Red and Orange on White Polychrome.

Fig. 20. Torre Polychrome portrait plates: a. UA-1 No. 11872; b. UA-1 No. 9551. ■ See also color section.



a



b

TABLE 1
 CERAMIC FREQUENCIES FROM SELECTED CONTEXTS

	Well 1 (#/x)	Well 2 (#/x)	Intrusive Midden (#/x)	Trash Midden (#/x)	Well 3 (#/x)	Structure 1 Floor (#/x)
MAJOR DECORATED TYPES						
APOLO BLACK & RED/ORANGE	163/.46	24/.06	6/.04	12/.004	0	7/.016
AQUIAHUACH BURNT ORANGE	14/.04	16/.04	36/.21	7/.002	0	3/.007
COAPAN LACA	1/.003	0	1/.006	0	0	0
COCOYOTLA BLACK/NATURAL	0	9/.02	10/.06	204/.07	20/.08	47/.11
Sencillo	0	(7/.78)*	(4/.40)	(65/.32)	0	(39/.83)
Banded	0	(1/.11)	(3/.30)	(110/.54)	(17/.85)	(5/.11)
Banded Elegante	0	(1/.11)	(3/.30)	0	(3/.15)	(1/.02)
Chalco Black/Orange	0	0	0	(24/.12)	0	(2/.04)
CUAXILOA MATTE	6/.017	7/.019	7/.04	237/.08	62/.25	15/.03
OCOTLAN RED RIM	1/.003	6/.016	11/.06	332/.11	21/.08	118/.27
Sencillo	0	(4/.67)	(6/.55)	(246/.74)	(16/.76)	(91/.77)
Elegante	(1/1.00)	(1/.17)	(2/.18)	0	(2/.10)	(16/.14)
Cristina Matte	0	(1/.17)	(1/.09)	(56/.17)	(1/.05)	(3/.03)
SAN PEDRO POLISHED	2/.006	16/.04	4/.02	65/.02	3/.012	10/.02
TORRE RED & ORANGE/WHITE	2/.006	4/.011	6/.04	228/.08	27/.11	2/.005
MAJOR UNDECORATED TYPES						
CERRO ZAPOTECAS SANDY PLAIN	3/.008	14/.04	2/.012	97/.03	4/.016	5/.012
MONOXPAN METALLIC ORANGE	84/.24	75/.20	42/.25	587/.20	39/.16	84/.19
SAN ANDRES RED	50/.14	108/.29	17/.10	216/.07	25/.10	32/.07
TEPONTLA BURNISHED	3/.008	2/.005	4/.02	75/.03	3/.012	11/.03
XICALLI PLAIN	15/.04	21/.06	22/.13	841/.29	44/.18	98/.23
MINOR TYPES						
COLONIAL/HISTORICAL	0	75/.20	0	1/.0003	0	0
LATE POSTCLASSIC	7/.02	0	1/.006	1/.0003	0	0
EARLY POSTCLASSIC	0	0	0	11/.004	1/.004	0
CLASSIC	2/.006	0	1/.006	20/.007	0	1/.002
PRECLASSIC	1/.003	0	0	4/.001	0	1/.002
UNIDENTIFIED	1/.003	0	0	11/.004	0	0
=====						
SUBTOTAL OF IDENTIFIABLE RIMS	355/1.00 (.80 of total)	377/1.00 (.70 of total)	170/1.00 (.68 of total)	2949/1.00 (.76 of total)	249/1.00 (.95 of total)	434/1.00 (.84 of total)
=====						
UNIDENTIFIABLE (burnt, eroded, too small)	90/.20	165/.30	79/.32	909/.24	13/.05	83/.16

TOTAL RIM SHERDS	445/1.00	542/1.00	249/1.00	3858/1.00	262/1.00	517/1.00

* Numbers in parentheses indicate frequencies of selected subtypes relative to the basic type

12). Subtypes of Apolo are Sencillo, Geométrico, or Elegante, depending on the degree of elaboration in design.

Aquihhuac Burnt Orange Polychrome is identified by a darker "burnt orange" slip over a white base coat. Painted decoration again includes black and red, but usually with a broad red band on the interior base (Fig. 13). Another common element is a panel of diagonal lines on the exterior rim. Subtypes include Sencillo, Santa Catarina, and Zócalo, defined on the basis of degree of elaboration and characteristic motifs.

Coapan Laca Polychrome is the most elaborate of the Cholula polychromes, and is identified by a lacquer-like finish over a white base coat. As noted by Noguera (1954:139), the painted outer surface was often poorly bonded to the white base, so that it chips off easily. Painted decoration includes brilliant colors and complex motifs that often incorporate codex style symbolic elements (Fig. 14). No subtypes have been recognized, perhaps because of the relative scarcity of this type in domestic contexts.

Cocoyotla Black on Natural in its basic type is the equivalent of Noguera's *negra sobre color natural del barro*, often called "Aztec I." It is identified by a lightly burnished, unslipped tannish orange body with black painted decoration, usually in the form of horizontal or wavy lines on the vessel walls (Fig. 15). More elaborate decoration in zoomorphic or floral motifs may occur on the interior base. Subtypes include Sencillo, Incised, Banded, Banded Elegante, and Chalco Black on Orange.

Cuaxiloa Matte Polychrome is identified by a dull white/light gray slip. Painted decoration is in brown and/or orange, and is usually in the form of complex geometric motifs in a panel around the rim (Fig. 16). Occasionally the interior base will feature an elaborate codex-style motif. The only subtype that occurs in quantity has a polished rather than matte surface.

Ocotlán Red Rim is identified by a red painted band that occurs on the rim above a polished orange slip (Fig. 11). In its basic subtype (Sencillo) it is otherwise undecorated. As discussed above, however, it can occur in several other subtypes, including Incised, Banded, Elegante, Banded Elegante, and Cristina Matte.

San Pedro Polished Red is identified by its deep red (*guinda*) slip that is usually polished to a high gloss (Fig. 17). It occurs in numerous subtypes, the most common of which include Sencillo, Incised, Black on Red, Elegante, and Incised Graphite on Red. This last subtype is usually found in the form of long-handled *sahumadores*, or incense burners.

Torre Red and Orange on White Polychrome is recognized for its use of color, particularly white. The brightly colored designs usually include complex geometric

motifs on the vessel walls, but occasionally have elaborate codex style representations on the interior base (Fig. 20). A design trait that often appears is a panel of diagonal lines on the exterior rim, in a pattern similar to Aquihhuac Burnt Orange Polychrome.

Polychrome types almost always occur as serving wares, such as *cajetes* (bowls) or *platos* (plates). Utilitarian wares such as *ollas* (jars), *comales* (griddles), and *cazuelas* (cooking pots), as well as less elegant serving wares, occur in five basic types: Cerro Zapotecas Sandy Plain, Momoxpan Metallic Orange, San Andrés Red, Tepontla Burnished, and Xicalli Plain.

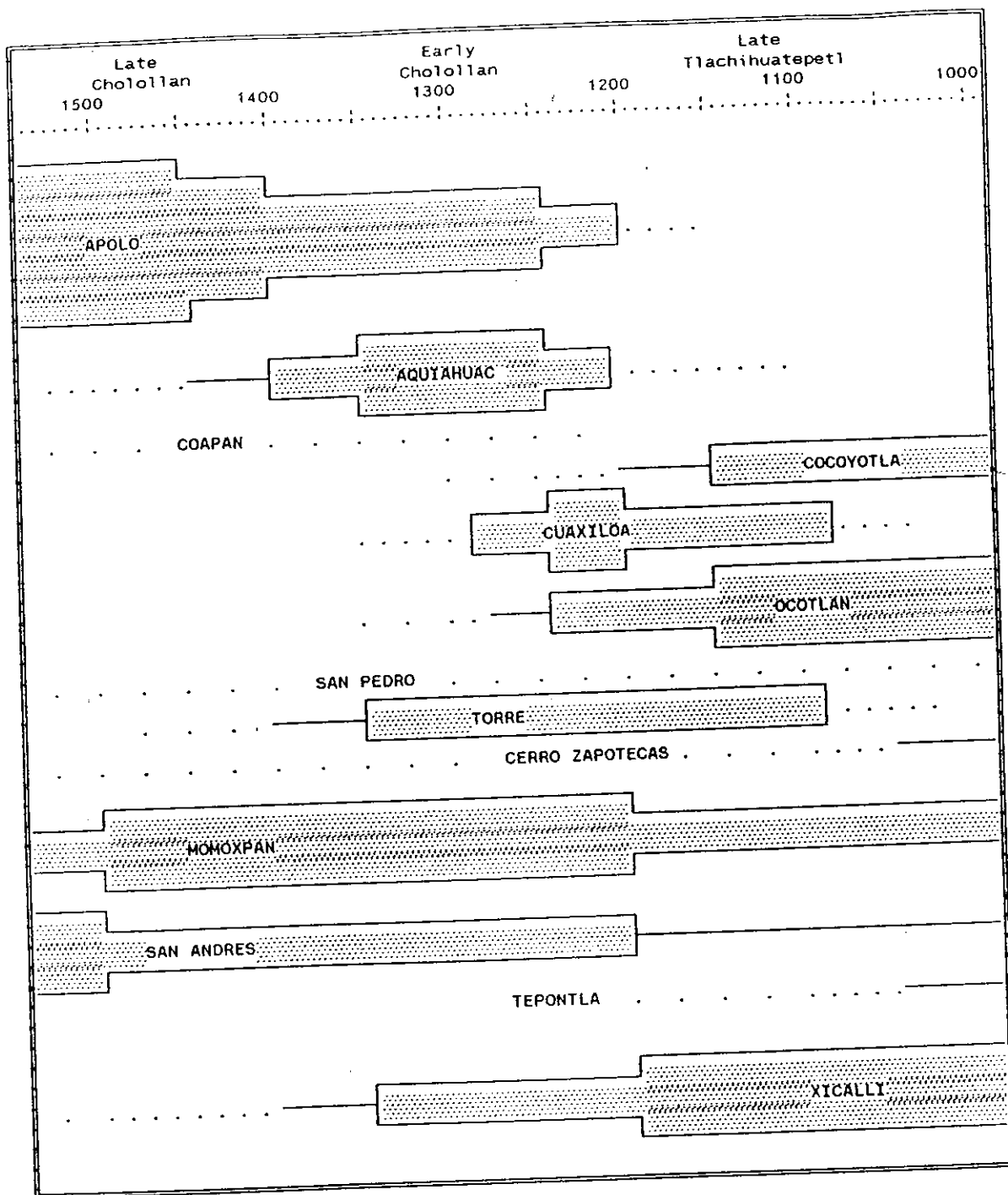
In summary, the UA-1 ceramic classification creates an alternative to the existing typologies for Postclassic Cholula ceramics.² By providing an expanded system for quantifying variability, potential differences between particular ceramic assemblages can be detected that relate to temporal and/or social variation.

The UA-1 Ceramic Seriation and the Postclassic Chronology

The UA-1 site produced thirteen depositional contexts suitable for a seriation analysis of ceramic frequencies. Four discrete assemblages, from three wells and the extensive trash midden, provide the best data potential, while other features, such as the house floor contact layers and several sherd concentrations, provide additional information. A seriation of the ceramic percentages from these assemblages produced a revised ceramic sequence for Postclassic Cholula³ (McCafferty 1992a). Distinctive ceramic complexes were recognized from the four principal deposits and also from the Structure 1 floor contact and an intrusive midden associated with Structure 2 (Table 1).

To summarize these data, the UA-1 excavation indicates ceramic complexes spanning the Postclassic and Colonial period (Fig. 19). The most extensive component relates to Structure 1 and the associated Trash Midden and Well 3 deposits. Decorated ceramics include moderate to high concentrations of Ocotlán Red Rim, and low to moderate amounts of Cocoyotla Black on Natural. Variations in the proportions of Torre Polychrome and Cuaxiloa Matte Polychrome may relate to cultural differences in disposal patterns, or perhaps short-term change.

In contrast, the intrusive midden associated with Structure 2 had a high frequency of Aquihhuac Polychrome and low amounts of Apolo, Cuaxiloa, Ocotlán, and Torre. Well 1 had a very high amount of Apolo Polychrome and a low frequency of Aquihhuac. Finally, Well 2 contained a high proportion of Colonial/historical glaze wares, indicating that it post-dates the Conquest; poly-



SCALE:

0 - 2x
 2 - 5x
 5 - 10x _____

10 - 20x



20 - 30x

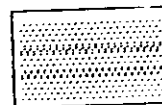


Fig. 19. Postclassic Cholula ceramic chronology.

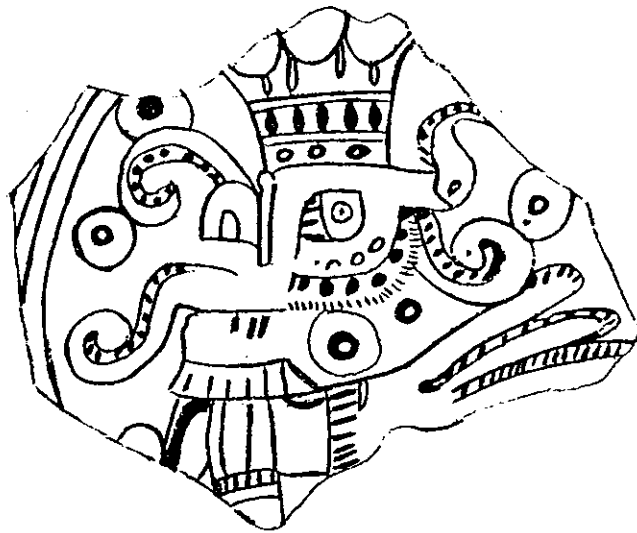


Fig. 21. Ocotlán Red Rim subtype Cristina Matte with "octopus" motif (UA-I Bag No. 8076).

Fig. 22. Ocotlán Red Rim subtype Cristina Matte with Gulf Coast style anthropomorphic figure (UA-I No. 10927).



chrome pottery included low amounts of Apolo, Aquiahuac, and San Pedro Polished Red.

These new data allow a significant reinterpretation of Noguera's (1954) sequence because of the greater number of identified types, and they are in direct contrast to Müller's (1978) assertions that polychromes were all contemporaneous during the Late Postclassic period. To formalize this distinction, I propose a new set of chronological phase names for Postclassic Cholula.

Based on ethnohistorical sources, we have the rare luxury of knowing the precolumbian names for Cholula during different phases of its culture history, and I suggest that these are appropriate terms for identifying chronological distinctions. For example, after the arrival of the Tolteca-Chichimeca in about A.D. 1200, the site was called Tollan Cholollan. I therefore suggest that the period from about A.D. 1200-1350 be called the Early Cholollan phase, as characterized by the Aquiahuac ceramic complex found in the intrusive midden at Structure 2 and at the C-14 dated UA-69 site (Mountjoy and Peterson 1973). The Late Cholollan phase would date from about A.D. 1350-1550, as characterized by the Apolo Polychrome complex found in Well 1 and at UA-79 (Barrientos 1980).

Early Postclassic Cholula was associated with the Olmeca Xicallanca occupation, when the city was called Tlachihualtepetl, after the Great Pyramid. I suggest that the period from about A.D. 1000-1200 be called the Late Tlachihualtepetl phase, characterized by the Ocotlán Red Rim complex found at Structure 1 and possibly in the UA-1 Trash Midden and Well 3.⁴ The Early Tlachihualtepetl phase (ca. A.D. 800-1000) was not represented at UA-1, but I suggest that it should be characterized by the Cocoyotla Black on Natural complex found at the Altar of the Carved Skulls (Noguera 1937).

Finally, while we do not know the name for Classic period Cholula, Ixtlilxochitl (1975-1977, 1:529) provided the name for the inhabitants as *quinametin* ("giants"), and I therefore propose the phase name Quinametepec to indicate the Classic period construction of the Great Pyramid.

The proposed ceramic sequence is based on only a small sample of contexts from a limited area of the Cholula urban center and must be treated as preliminary. An even greater question is the ascription of absolute dates to the phases, since only a single radiocarbon date has ever been published from a Postclassic ceramic assemblage at Cholula (Mountjoy and Peterson 1973:30). It should be a priority for future research to test this sequence with additional seriation analyses, particularly using assemblages associated with archaeometric dates.

Conclusion

The UA-1 site provides unique information for the interpretation of Postclassic Cholula. The recent boom in Mesoamerican studies of household archaeology demonstrates the research potential of archaeological investigations of domestic contexts (e.g., Evans 1989; Healan 1989; and articles in Wilk and Ashmore 1988).

Additionally, the development of an alternative ceramic typology, and the detailed analysis of vessel fragments from discrete depositional contexts, has provided the opportunity to re-evaluate ceramic sequences proposed by Noguera (1954) and Müller (1970, 1978). Preliminary interpretations and a tentative ceramic chronology are proposed, with the suggestion that the most comprehensively excavated portion of UA-1 be dated to the Late Tlachihualtepetl phase, ca. A.D. 1000-1200.

What, then, can the UA-1 excavation contribute to an understanding of a Mixteca-Puebla culture complex of shared religious ideology and stylistic traits? In reference to the tripartite model proposed by Smith and Heath-Smith (1980), the UA-1 material culture in varying degrees does indicate Mixteca-Puebla traits in each of the three categories.

Smith and Heath-Smith (1980:19-20) suggest that the *xicalcolihqui* pattern and variations of the feathered serpent motif may be considered symbolic manifestations of the "Postclassic Religious Style." Examples of these stylistic motifs occur frequently on polychrome ceramics at UA-1, particularly Cuaxiloa Matte and Ocotlán subtypes Elegante and Cristina Matte. Although only one possible figurine representing Ehecatl/Quetzalcoatl was found,⁵ others representing Tlaloc, Xipe Totec, and perhaps Xochiquetzal, also relate to the Postclassic religious pantheon of central Mexico.

Examples of the "Mixtec Codex Style" occur in what Müller (1978) called "*tipo códice*," a group incorporating stylistic elements similar to those found in the codices. In addition to the *xicalcolihqui* and feathered serpent motifs, other symbolic elements include crossed bones, eagle feathers, and tule grass.

The most significant example of the "Codex Style" is a set of five Torre Polychrome dishes found both in the trash midden and in association with the Structure 1 house floor. These depict a bald human head with a speech scroll coming from the mouth, differentially patterned black face paint, and, occasionally, elaborate ear plugs (Fig. 20). Although these figures are not painted in a style clearly identifiable with either Mixtec or Borgia Group codices, they do comply with what Nicholson (1960, 1982:229) referred to as a "Disney type" caricature, and I believe they may represent an early stage in

the development of the style. Similar examples occur in Noguera (1954:279) and Müller (1978:203, lám.44-2).

Finally, the quantity and diversity of polychrome pottery found in association with Late Tlachiualtepetl contexts suggests a relatively early presence of the "Mixteca-Puebla Regional Ceramic Style." The predominant type found in association with the floor of Structure 1 was Ocotlán Red Rim, including examples of the subtypes Elegante and Cristina Matte. The Trash Midden and Well 3 had more diverse polychrome assemblages, with moderate amounts of Torre Polychrome and Cuaxiloa Matte, in addition to Ocotlán Red Rim.

Comparisons of the Late Tlachiualtepetl ceramic complex with ceramics from other regions provide useful information for interpreting the cultural interactions that may have contributed to the early Mixteca-Puebla ceramic assemblage found at Cholula. Cocoyotla Black on Natural has obvious parallels with Early Aztec pottery from the Basin of Mexico (Noguera 1954:282-283), but it is also similar to "X Fine Orange" from the Gulf Coast. The Cocoyotla subtype Chalco Black on Orange has particularly close affiliation with Mixquic Black on Orange found around Lake Chalco in the southern Basin of Mexico (Hodge and Minc 1991:84-96). Polychrome pottery similar to Torre Polychrome and Cuaxiloa Matte Polychrome is also known from the Basin of Mexico (Séjourné 1983) and has recently been found at Xaltocan (Elizabeth Brumfiel, personal communication).

Other types with similarities to Gulf Coast pottery include Cuaxiloa Matte Polychrome and Ocotlán subtype Cristina Matte. Illustrated examples of Isla de Sacrificios pottery are virtually indistinguishable from pottery found at UA-1 (García Payón 1971:535-536). This possible Gulf Coast connection is further supported by decorative motifs, including an octopus (Fig. 21) and a figure with Maya-style cranial deformation, black face paint, and an elaborate feathered headdress (Fig. 22).

In conclusion, analysis of the UA-1 material culture sheds light on the culture history of Early Postclassic Cholula, and particularly on its role in the development of the Mixteca-Puebla stylistic tradition. Cholula had a vibrant polychrome tradition in the Late Tlachiualtepetl phase, and the closest stylistic similarities were with the Gulf Coast. This conclusion seems to support Jiménez Moreno's (1942) and Nicholson's (1982) hypotheses that the Mixteca-Puebla horizon may have originated during the Olmeca Xicallanca occupation of Cholula. It further supports the architectural evidence from the Great Pyramid for Gulf Coast interaction during the Epiclassic period and strengthens assertions that Cholula was never abandoned.

These suggestions are obviously based on a limited

data set. To take the lid off the "black box" that has been precolumbian Cholula will require extensive investigations in a variety of site contexts, both in and around the center. I believe that the UA-1 excavation demonstrates the potential rewards of such an undertaking. However, like Tenochtitlan before it, Cholula is undergoing rapid and devastating modern development, and unless a significant investment in new research is made the lid to that box will soon be nailed shut.

Acknowledgments. My fascination with precolumbian Cholula developed while I was a graduate student at the Universidad de las Américas, through interaction with Michael Lind, Eduardo Merlo, John Paddock, David Peterson, Sergio Suárez Cruz, and particularly with the late Wigberto Jiménez Moreno. Funding for the UA-1 ceramic analysis was provided in part by grants from the SUNY Binghamton Foundation Special Projects Fund and a Sigma Xi Grant-in-Aid. The illustrations for Figs. 11-18, 20, were prepared by Sharisse D. McCafferty, who, using color pencils, painstakingly blended the colors to match the original polychrome colors of the pottery.

1. The term "giants" is generally applied to the Classic period Teotihuacanos (Davies 1977:111).

2. Michael Lind (Lind et al. 1990) has recently proposed another alternative typology, also using ceramics from the Uni-

Table 2. Correlation of Cholula Polychrome Ceramic Typologies

NOGUERA (1954)	MCCAFFERTY (1992a)	LIND et al. (1990)
Decoración negro sobre color natural del barro	Cocoyotla Black on Natural/ Sencillo subtype Cocoyotla Black on Natural/ Banded subtype Cocoyotla Black on Natural/ Chalco subtype	Xicotenco Black on Orange
Policroma maté	Cuaxiloa Matte Polychrome Cocoyotla Black on Natural/ Elegante subtype Ocotlán Red Rim/ Cristina Matte subtype	Cristina Polychrome
Policroma firme	Torre Red and Orange on White Polychrome Aquiahuac Burnt Orange Polychrome/ Santa Catarina subtype Ocotlán Red Rim/ Elegante subtype	Albina Polychrome Estela Polychrome
Policroma laca	Coapan Laca Polychrome San Pedro Polished Red/ Elegante subtype Apolo Black and Red on Orange Polychrome/ Elegante subtype	Catalina Polychrome
Decoración negro o rojo sobre anaranjado	Apolo Polychrome/ Geométrico subtype Aquiahuac Polychrome/ Zócalo subtype	Diana Polychrome
Decoración sencillo	Apolo Polychrome/ Sencillo subtype Aquiahuac Polychrome/ Sencillo subtype Ocotlán Red Rim/ Sencillo subtype Ocotlán Red Rim/ Banded subtype	Nila Polychrome Silvia Polychrome Marta Polychrome

versidad de las Américas (UDLA), including the UA-1 assemblage. Although there are many similarities between these two schemes, I prefer to modify the original UDLA typology for the sake of consistency and because I feel it provides greater flexibility for identifying variation. Table 2 presents a comparison of type names from Noguera (1954), McCafferty (1992a), and Lind (Lind et al. 1990).

3. The seriation analysis was conducted using Gelfand's Method II as described in Marquardt (1978). See McCafferty (1992a) for a detailed discussion of the methodology and results.

4. Recent excavations by the Centro Regional de Puebla have encountered a rich midden deposit in an abandoned well, with ceramics relating to this Late Tlachihualtepetl complex. Two C14 dates fall in the 900-1000 range (Sergio Suárez Cruz, personal communication).

5. Figurine UA-1 No. 9999 was described on the original Object Card as a representation of Quetzalcoatl, with a head-dress and green and red painted decoration. The figurine was missing from the collection when the assemblage was reanalyzed during my dissertation research, so this identification is considered tentative.

REFERENCES CITED

- Acosta, Jorge R.
 1970a El Altar 1. In *Proyecto Cholula*, edited by Ignacio Marquina, pp. 93-102. Serie Investigaciones 19. Instituto Nacional de Antropología e Historia, México.
 1970b El Altar 2. In *Proyecto Cholula*, edited by Ignacio Marquina, pp. 103-110. Serie Investigaciones 19. Instituto Nacional de Antropología e Historia, México.
- Barrientos, Catalina
 1980 Análisis de la Cerámica del Elemento 10 de UA-79. Tesis de Licenciatura, Universidad de las Américas, Cholula, Puebla.
- Carrasco, Pedro
 1971 Los Barrios Antiguos de Cholula. *Estudios y Documentos de la Región de Puebla-Tlaxcala* 3:9-87. Instituto Poblano de Antropología e Historia, Puebla.
- Caskey, Charles, and Michael Lind
 n.d. Late Postclassic Cholula Ceramic Typology, Annex IV. Unpublished manuscript on file, Department of Anthropology, Universidad de las Américas, Cholula, Puebla.
- Chadwick, Robert
 1971 Postclassic Pottery of the Central Valleys. In *Archaeology of Northern Mesoamerica*, Part 1, edited by Gordon F. Ekholm and Ignacio Bernal, pp. 228-257. *Handbook of Middle American Indians*, vol. 10, Robert Wauchoppe, general editor. University of Texas Press, Austin.
- Codex Borgia
 1963 Eduard Seler, *Comentarios al Códice Borgia*. Translated by Mariana Frenk, 3 vols. Fondo de Cultura Económica, México.
- Codex Nuttall
 1975 *The Codex Nuttall: A Picture Manuscript from Ancient Mexico*. The Peabody Museum facsimile, edited by Zelia Nuttall, with New Introductory Text by Arthur G. Miller. Dover Publications, New York.
- Cohen, Abner
 1969 *Custom and Politics in Urban Africa*. University of California Press, Berkeley.
- Contreras, Eduardo
 1970 El Altar 3. In *Proyecto Cholula*, edited by Ignacio Marquina, pp. 111-118. Serie Investigaciones 19. Instituto Nacional de Antropología e Historia, México.
- Curtin, Phillip D.
 1984 *Cross-Cultural Trade in World Prehistory*. Cambridge University Press, Cambridge.
- Davies, Nigel
 1977 *The Toltecs: Until the Fall of Tula*. University of Oklahoma Press, Norman.
- Díaz del Castillo, Bernal
 1963 *The Conquest of New Spain*. Translated by J. M. Cohen. Penguin Books, Harmondsworth.
- Dumond, Don
 1972 Demographic Aspects of the Classic Period in Puebla/Tlaxcala. *Southwest Journal of Anthropology* 28: 101-130.
- Dumond, Don, and Florencia Müller
 1972 Classic to Post-Classic in Highland Central Mexico. *Science* 175:1208-1215.
- Durán, Diego
 1971 *The Book of the Gods and Rites and the Ancient Calendar*. Translated by Fernando Horcasitas and Doris

- Heyden. University of Oklahoma Press, Norman.
- Evans, Susan T.
 1988 Cihuateopan: The Village in its Ecological and Historical Context. In *Excavations at Cihuateopan: An Aztec Village in the Teotihuacan Valley*, edited by S. T. Evans, pp. 1-49. Vanderbilt University Publications in Anthropology 36, Nashville.
- 1989 House and Household in the Aztec World: The Village of Cihuateopan. In *Households and Communities: Proceedings of the Twenty-first Annual Conference of the Archaeological Association of the University of Calgary*, edited by S. MacEachern, D.J.W. Archer, and R. D. Garvin, pp. 407-415. University of Calgary Archaeological Association, Calgary.
- García Payón, José
 1971 Archaeology of Central Veracruz. In *Archaeology of Northern Mesoamerica*, Part 1, edited by Gordon F. Ekholm and Ignacio Bernal, pp. 505-543. *Handbook of Middle American Indians*, vol. 10, Robert Wauchope, general editor. University of Texas Press, Austin.
- Healan, Dan M.
 1989 House, Household and Neighborhood in a Postclassic City. In *Households and Communities: Proceedings of the Twenty-first Annual Conference of the Archaeological Association of the University of Calgary*, edited by S. MacEachern, D.J.W. Archer, and R. D. Garvin, pp. 416-429. University of Calgary Archaeological Association, Calgary.
- Historia Tolteca-Chichimeca
 1976 *Historia Tolteca-Chichimeca*. Edited and translated by Paul Kirchhoff, Lina Odena Güemes, and Luis Reyes García. Instituto Nacional de Antropología e Historia, México.
- Hodder, Ian
 1982 *Symbols in Action*. Cambridge University Press, Cambridge.
 1986 *Reading the Past: Current Approaches to Interpretation in Archaeology*. Cambridge University Press, Cambridge.
- Hodge, Mary G., and Leah D. Minc
 1991 *Aztec Period Ceramic Distribution and Exchange Systems*. Report submitted to the National Science Foundation.
- Ixtlilxochitl, Fernando de Alva
 1975-77 *Obras Históricas*, 2 vols. Edited and with introduction by Edmund O'Gorman. Instituto de Investigaciones Históricas, Universidad Nacional Autónoma de México, México.
- Jiménez Moreno, Wigberto
 1942 El Enigma de los Olmecas. *Cuadernos Americanos* I(5):113-145.
 1966 Mesoamerica before the Toltecs. Translated by M. Bullington and C. R. Wicke. In *Ancient Oaxaca: Discoveries in Mexican Archaeology and History*, edited by John Paddock, pp. 3-82. Stanford University Press, Stanford.
- Lind, Michael, Catalina Barrientos, Chris Turner, Charles Caskey, Geoffrey McCafferty, Carmen Martínez,
 Martha Orea
 1990 Cholula Polychrome. Unpublished manuscript in possession of author.
- López de Gómara, Francisco
 1964 *Cortés: The Life of the Conqueror by his Secretary*. Translated and edited by L. B. Simpson. University of California Press, Berkeley.
- López de Molina, Diana
 1981 Un informe preliminar sobre la cronología de Cacaxtla. In *Interacción cultural en México Central*, edited by E. C. Rattray, J. Litvak K., and C. Diaz O., pp. 169-174. Instituto de Investigaciones Antropológicas, Universidad Nacional Autónoma de México, México.
- Marquardt, William H.
 1978 Advances in Archaeological Seriation. In *Advances in Archaeological Method and Theory: Selections for Students from Volumes 1 through 4*, edited by M. B. Schiffer, pp. 416-464. Academic Press, New York.
- Marquina, Ignacio
 1970 Pirámide de Cholula. In *Proyecto Cholula*, edited by Ignacio Marquina, pp. 31-46. Serie Investigaciones 19. Instituto Nacional de Antropología e Historia, México.
 1975 Cholula, Puebla. In *Los Pueblos y Señoríos Teocráticos: El Periodo de las Ciudades Urbanas*, edited by R. Piña Chan, pp. 109-122. Instituto Nacional de Antropología e Historia, México.
- McCafferty, Geoffrey G.
 1989a Ethnic Boundaries and Ethnic Identity: Case Studies from Postclassic Mexico. M.A. thesis, State University of New York, Binghamton.

- 1989b Ethnic Identity in the Material Culture of Postclassic Cholula. Paper presented at the annual meeting of the Society for Historical Archaeology, Baltimore.
- 1992a The Material Culture of Postclassic Cholula: Contextual Interpretations of the UA-J Domestic Compounds. Ph.D. dissertation, State University of New York, Binghamton.
- 1992b Reinterpreting the Great Pyramid of Cholula, Mexico. Paper presented at the annual meeting of the American Anthropological Association, San Francisco.
- McVicker, Donald
1985 The "Mayanized" Mexicans. *American Antiquity* 50(1):82-101.
- Motolinia, Toribio de Benavente
1985 *Historia de los Indios de la Nueva España*. Edited by G. Baudot. Clásicos Castalia, Madrid.
- Mountjoy, Joseph
1987 The Collapse of the Classic at Cholula as Seen from Cerro Zapotecas. *Notas Mesoamericanas* 10:119-151.
- Mountjoy, Joseph, and David A. Peterson
1973 *Man and Land in Prehispanic Cholula*. Vanderbilt University Publications in Anthropology 4, Nashville.
- Müller, Florencia
1970 La Cerámica de Cholula. In *Proyecto Cholula*, edited by Ignacio Marquina, pp. 129-142. Serie Investigaciones 19. Instituto Nacional de Antropología e Historia, México.
1978 *La Alfarería de Cholula*. Serie Arqueología. Instituto Nacional de Antropología e Historia, México.
- Nicholson, H. B.
1960 The Mixteca-Puebla Concept in Mesoamerican Archaeology: A Reexamination. In *Men and Cultures: Selected Papers from the Fifth International Congress of Anthropological and Ethnological Sciences, Philadelphia, September 1-9, 1956*, edited by Anthony F. C. Wallace, pp. 612-617. University of Pennsylvania, Philadelphia.
1966 The Problem of the Provenience of the Members of the "Codex Borgia Group": A Summary. In *Summa Antropológica en Homenaje a Roberto J. Weitlaner*, edited by Antonio Pompa y Pompa, pp. 145-158. Instituto Nacional de Antropología e Historia, México.
1982 The Mixteca-Puebla Concept Revisited. In *The Art and Iconography of Late Post-Classic Central Mexico*, edited by Elizabeth H. Boone, pp. 227-254. Dumbarton Oaks, Washington, D.C.
- Noguera, Eduardo
1937 *El Altar de los Craneos Esculpidos de Cholula*. Talleres Gráficos de la Nación, México.
1954 *La cerámica arqueológica de Cholula*. Editorial Guaranía, México.
- Norr, Lynette
1987 The Excavation of a Postclassic House at Tetla. In *Ancient Chalcatzingo*, edited by David C. Grove, pp. 400-408. University of Texas Press, Austin.
- Olivera de V., Mercedes, and Cayetano Reyes
1969 Los Choloques y los Cholultecas: Apuntes sobre las relaciones etnicas en Cholula hasta el siglo XVI. *Anales del INAH* 7(1):247-274.
- Paddock, John
1987 Cholula en Mesoamérica. *Notas Mesoamericanas* 10:21-70.
- Rojas, Gabriel de
1927 Descripción de Cholula. *Revista Mexicana de Estudios Históricos* 1(6):158-170. Originally written 1581.
- Salazar O., Ponciano
1970 Lado Oeste. In *Proyecto Cholula*, edited by Ignacio Marquina, pp. 67-70. Serie Investigaciones 19. Instituto Nacional de Antropología e Historia, México.
- Sanders, William T.
1989 The Epiclassic as a Stage in Mesoamerican Prehistory: An Evaluation. In *Mesoamerica After the Decline of Teotihuacan, A.D. 700-900*, edited by Richard A. Diehl and Janet C. Berlo, pp. 211-218. Dumbarton Oaks, Washington, D.C.
- Sanders, William T., Jeffrey Parsons, and Robert Santley
1979 *The Basin of Mexico: Ecological Processes in the Evolution of a Civilization*. Academic Press, New York.
- Séjourné, Laurette
1983 *Arqueología e historia del Valle de México: De Xochimilco a Amecameca*. Siglo Veintiuno Editores, México.
- Sisson, Edward B.
1973 *First Annual Report of the Coxcatlán Project*. Robert S. Peabody Foundation for Archaeology, Andover.

- 1974 *Second Annual Report of the Coxcatlán Project*. Robert S. Peabody Foundation for Archaeology, Andover.
- Smith, Mary Elizabeth
1973 *Picture Writing from Ancient Southern Mexico: Mixtec Place Signs and Maps*. University of Oklahoma Press, Norman.
- Smith, Michael E.
1987 The Expansion of the Aztec Empire: A Case Study in the Correlation of Diachronic Archaeological and Ethnohistorical Data. *American Antiquity* 52:37-54.
- Smith, Michael E., and Cynthia M. Heath-Smith
1980 Waves of Influence in Postclassic Mesoamerica? A Critique of the Mixteca-Puebla Concept. *Anthropology* 4(2):15-50.
- Torquemada, Juan de
1975-83 *Monarquía Indiana*, 7 vols. Edición preparada por el Seminario para el Estudio de Fuentes de Tradición Indígena, bajo la coordinación de Miguel León-Portilla. Universidad Nacional Autónoma de México, Instituto de Investigaciones Históricas, Serie de Historiadores y Cronistas de Indias, México.
- Tourtellot, Gair
1988 Developmental Cycles of Households and Houses at Seibal. In *Household and Community in the Mesoamerican Past*, edited by R. R. Wilk and Wendy Ashmore, pp. 97-120. University of New Mexico Press, Albuquerque.
- Vaillant, George C.
1938 A Correlation of Archaeological and Historical Sequences in the Valley of Mexico. *American Anthropologist* 40:535-573.
1941 *Aztecs of Mexico: Origin, Rise and Fall of the Aztec Nation*. Doubleday, Garden City.
- Weaver, Muriel Porter
1972 *The Aztecs, Mayas, and Their Predecessors: Archaeology of Mesoamerica*. Seminar Press, New York.
- Wolfman, Daniel
1968 Preliminary Report on Excavations at UA-1, July 1968. Report submitted to the Departamento de Monumentos Prehispánicos. Unpublished manuscript on file, Department of Anthropology, Universidad de las Américas, Cholula, Puebla.