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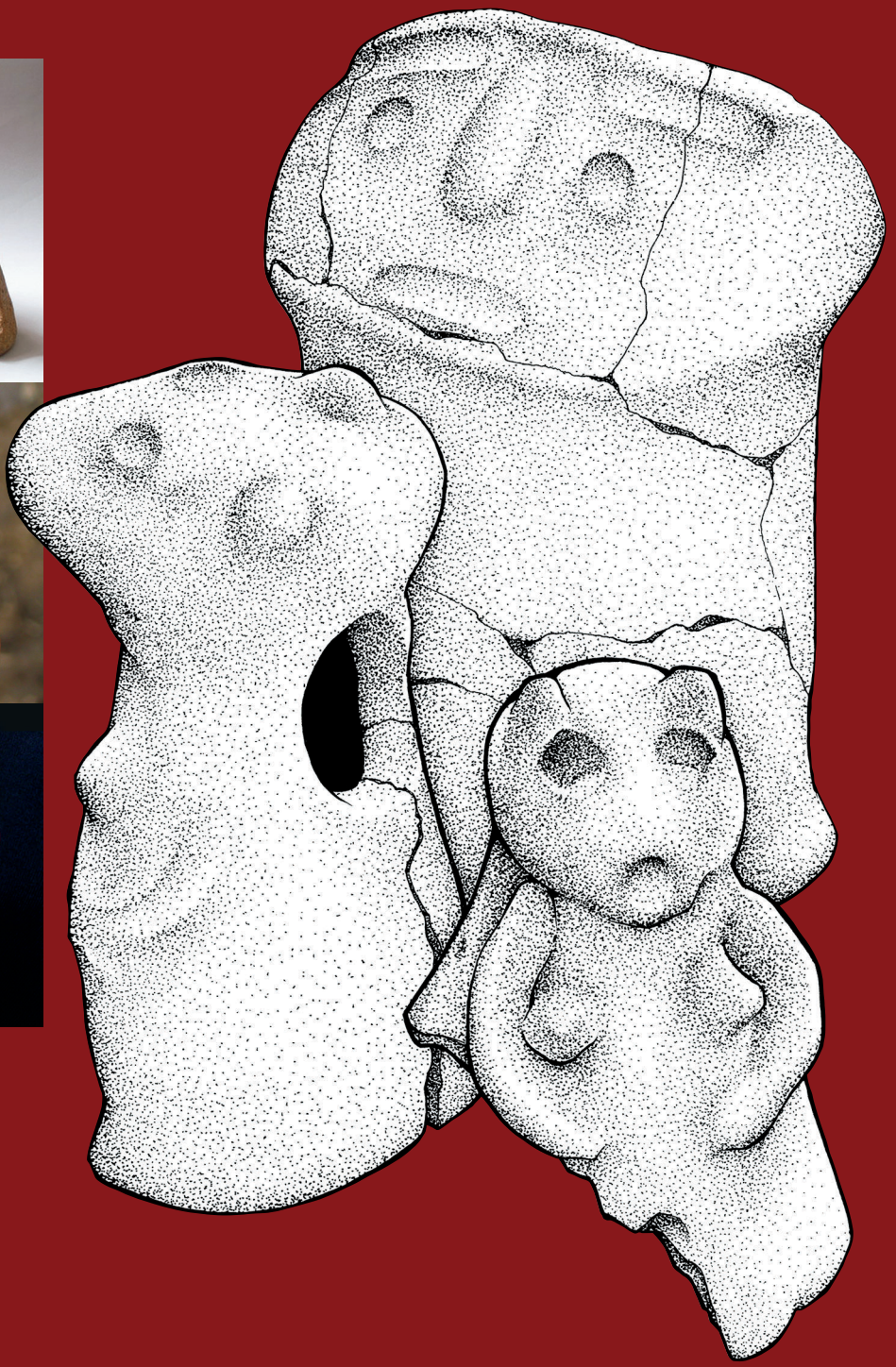

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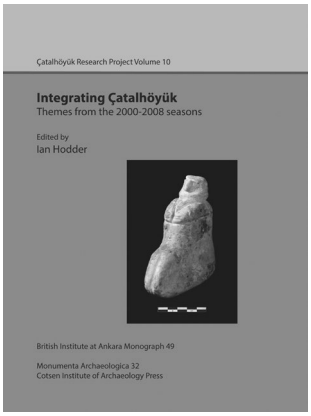

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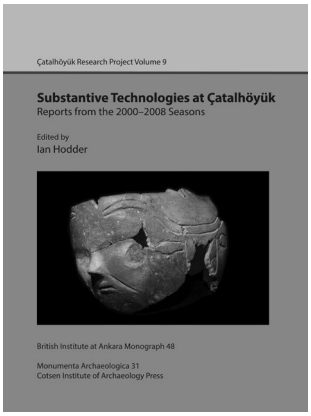

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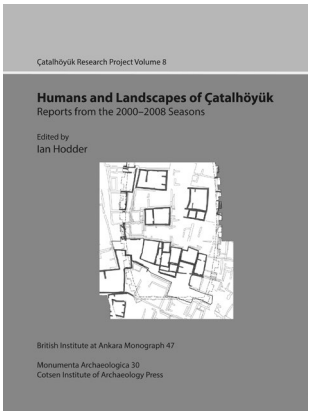

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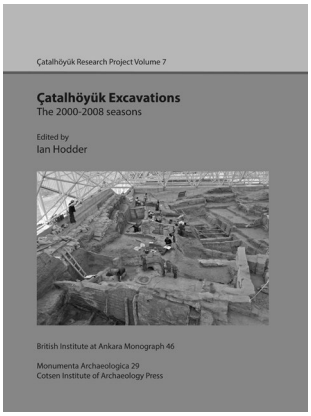

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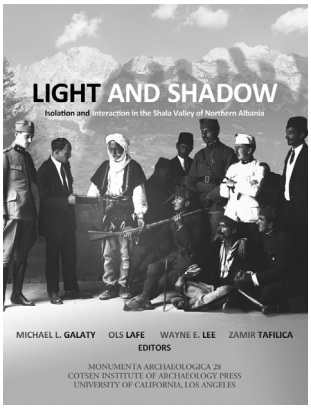

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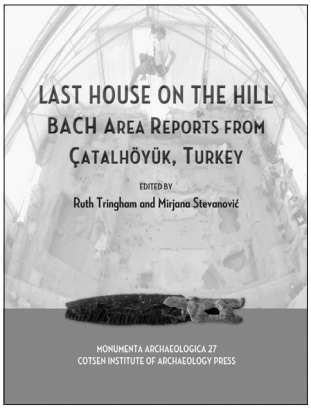

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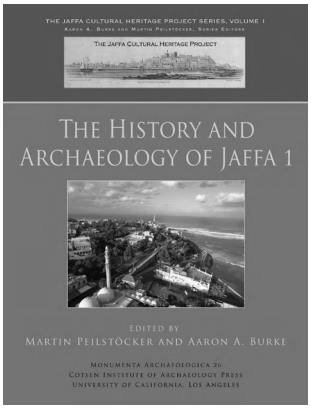

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Aleksander Borejsza

David M. Carballo

Jennifer Carballo

Isabel Rodríguez López

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CHAPTER 1

Formative Lifeways in Central Tlaxcala: An Introduction

Richard G. Lesure

THIS BOOK, THE FIRST of a projected three, reports on excavations at Formative-period sites in the state of Tlaxcala, Mexico. Deposits excavated date from 900 B.C. to A.D. 150 in calendar years. In the study area of central Tlaxcala, centered on the modern city of Apizaco, the millennium under consideration constitutes the entire Formative sequence. Excavations were conducted at three village sites (Amomoloc, Tetel, and Las Mesitas) and one modest regional center (La Laguna).

In this first volume, we describe the excavations, the ceramics, and the figurines. We present a Formative chronology and introduce the important theme of macroregional analysis. Subsequent volumes will combine social interpretation with further descriptive analysis of materials recovered. Topics to be considered in Volume 2 are environment and subsistence, the procurement of basic raw materials, the impact of Formative agricultural practices on the local landscape, and the long-term history of village life in Central Mexico. Volume 3 will focus on symbolic, social, and economic structures in Formative central Tlaxcala and their transformation (or stability) during the first millennium B.C. Of particular interest is the nature of any structural transformation in this era leading up to state formation in Central Mexico. Our study region was peripheral to the centers of sociopolitical development in the Basin of Mexico and the Puebla-Tlaxcala Valley, yet strong stylistic ties indicate that Formative communities of central Tlaxcala were fully integrated into Central Mexican interactions during the first millennium B.C. The study region was certainly outside the centers of political development that led to state formation, but what about social and economic transformation more generally? Were the social-structural transformations associated with state formation—stratification, occupational specialization—concentrated in centers of political innovation, or were they more widespread phenomena that transformed social life in the peripheries before the direct intervention by an expansionist Teotihuacan state during the second century A.D.?

The present chapter briefly reviews the evolution of these research questions over the four seasons of fieldwork. It then provides an overview of the Formative sequence in the study region, the sites excavated, and the nomenclature used in designating proveniences, features, and contexts.

RESEARCH QUESTIONS AND THE HISTORY OF THE PROJECT

In its original conceptualization, the Apizaco Formative Project was to provide a case of Formative-era sociopolitical development comparable to that on which I did dissertation and post-dissertation work on the coast of Chiapas, Mexico (Lesure 1995, 1999). As I looked into possibilities in both Puebla and Tlaxcala, one of the attractions of Tlaxcala was the previous survey by García Cook and Merino Carrión (1989), which, even if published mainly in the form of large-scale overviews, nevertheless provided a basis for targeted excavation at Formative village sites. García Cook (1972a, 1981; García Cook and Merino Carrión 1988, 1989) had reported Early Formative settlement in Tlaxcala from perhaps 1700 B.C., which would place this region among the earliest cases of settled village life in Mesoamerica (e.g., Clark and Cheetham 2002:Figure 2), fully contemporary with early sedentary communities of the Chiapas coast.

It was clear already, before the project began, that the chronology established by García Cook required a careful review. Still, in the summer of 1999, Roberto Bravo

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(INAH-Tlaxcala) and I located two of the earliest sites reported by García Cook in central Tlaxcala and found abundant, unmistakable Middle Formative white wares. Although I saw no type-D figurines, a correlation with the Manantial phase of the Basin of Mexico seemed at that point a possibility, one that would establish occupation in the area as early as 1200 B.C. in calibrated radiocarbon years. Fully creditable Manantial-era ceramics and figurines in good contexts—and possibly traces of earlier material mixed into these levels—are reported by Aufdermauer (1970, 1973) from Moyotzingo in the northern part of the Puebla-Tlaxcala Valley, some 40 km from our site of Tetel.

On the basis of such observations, and with the attraction of being able to move rapidly to the excavation of Formative villages, I selected central Tlaxcala as the location for the project. One additional factor in the choice of Tlaxcala as a research area was the warm reception we received from the local inhabitants from my earliest visit. The friendly disposition of Tlaxcalans toward our work contrasted with receptions I encountered in a couple of other cases as I explored possible research locations, including at the town of Moyotzingo.

On the face of it, central Tlaxcala does not seem like an area that would have been particularly attractive to early agriculturalists (Lesure et al. 2006:475–476). Much of the study area lies above 2,400 m in elevation, and frost and hail are common. The region is at a higher elevation than the neighboring Puebla-Tlaxcala Valley, and, at least currently, access to permanent sources of water is less favorable. Still, at Tlapacoya in the Basin of Mexico, Niederberger (1979) found evidence for year-round occupation during the Late Archaic, which she ascribed to wild resources associated with lakes. One reconstruction of the climatic and environmental history of Tlaxcala locates a lake in the study region some 3,000 years ago (Lauer 1979). Plausibly, a different hydrography at that time could have provided abundant lacustrine resources to offset the agricultural marginality of the area and to provide a basis for Early Formative settlement.

My initial research objectives were thus to evaluate the Formative chronology of the region and the subsistence regime of its earliest inhabitants. If we were to find Early Formative settlement, the lacustrine hypothesis would provide a possible explanation for this seeming anomaly of early settlement in a marginal region. Since Aleksander Borejsza entered the Ph.D. program at UCLA just as I was organizing the Apizaco Project, we built his interest in geoarchaeology into the initial research plan. Under the supervision of Charles Frederick, Borejsza would survey the cut banks of the deeply incised streams that crisscross the area, studying the history of human impacts on the landscape and looking for buried Archaic and Early Formative sites.

Ultimately, we attempted to locate all four of the Tzompantepec-phase sites reported by García Cook and Merino Carrión (1989) in our study region (T-26, T-79, T-76, and T-28). The map in that publication is at too large a scale to allow field identification of sites, but we consulted the registry of sites for our area at the Instituto Nacional de Antropología e Historia as well as a very helpful early publication by García Cook (1972a) with a more detailed map of sites in central Tlaxcala. Of these early sites, we were unable to find T-28 (a *microaldea*) or T-76. T-26 and T-79, however, were our Tetel and Amomoloc, respectively. Only at the latter site did our excavations reveal a Tzompantepec component, the fill of a single bell-shaped pit. Although this pit provides only a limited basis for inferences on lifeways, Amomoloc takes on a certain importance as yielding the earliest excavated Formative component in the study region.

Fieldwork began in summer of 2000 with a brief season devoted to further reconnaissance and to mapping and surface collection at our two known early sites, Tetel and Amomoloc. Besides myself, the crew included Martin Biskowski, Aleksander Borejsza, David Carballo, and Jennifer Carballo. A longer season followed in the winter of 2001. The Tetel excavations were conducted that year, along with limited initial testing at Amomoloc. Borejsza launched his geomorphological study. The crew that season included Aleksander Borejsza, David Carballo, Jennifer Carballo, Jason De León, María Guadalupe Espinosa Rodríguez, Charles Frederick, Hugo Alberto Huerta Vicente, Virginia Popper, and Carol Schultze.

One issue apparent from my first visits to sites in Tlaxcala was their precarious state of preservation. Many Formative sites are on slopes that have been heavily eroded. Erosion is such that the ancient ground surface at all three of our small sites (and parts of the large site of La Laguna) is gone in most areas. Urbanization and agricultural activities have also taken tolls on even the subsurface record at both Amomoloc and Tetel. In the latter case, some of the terraces were repaired with a bulldozer.

Judging from a comparison of Abascal's (1976, 1996) description of Amomoloc with what we found at the site a quarter-century later, site destruction in the last few decades has been considerable. It was not entirely clear at the outset of excavations in 2001 that *any* original deposits at Amomoloc and Tetel were still intact, though at both sites there were areas covered in trees that had clearly not recently been cultivated. Excavations in these areas quickly revealed intact subsurface features such as hearths and roasting pits; burials; and refuse-filled pits, including large bell-shaped pits originally used for storage. Our most common excavation method involved removing a disturbed upper layer of 5 to 20 cm to reveal Formative pit features, which were then excavated stratigraphically. Pits were often full of intact secondary refuse, including reconstructable pottery vessels, grinding stones, obsidian blades, figurines, animal bone, charred plant remains, and a variety of other artifacts. Most of our conclusions derive from a careful analysis of the secondary refuse contained in such features.

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The state of the archaeological record at these sites is scarcely the ideal for research-oriented archaeology. The impossibility of associating refuse samples with surface architectural features considerably impedes any investigation of intracommunity status differences (though see J. Carballo [2011] for a valiant effort). Our work also contributes little new information on political organization beyond what is known from García Cook and Merino Carrión's (1989) survey. Visits to other sites indicate that the state of preservation at Amomoloc and Tetel is typical among Formative village sites in the region that have not been entirely destroyed. This is a widespread problem in Central Mexico and there is a growing sense that research archaeology should find ways to give greater attention to the recovery of information from threatened sites (Plunket and Uruñuela 2012:34). That will mean grappling with the interpretive challenges posed by such archaeological records. Methodological questions to be dealt with in our volumes 2 and 3—What kinds of social information can be extracted from the damaged archaeological records of our sites, and how?—thus have larger relevance in that they are likely to be increasingly common concerns for archaeologists working in highland Central Mexico.

As we began analyzing the results of the 2001 season, the outlines of our current understanding of the Formative sequence of central Tlaxcala took shape. By that point, I had recognized that the Early–Middle Formative white ware tradition of the Basin of Mexico consisted of two readily distinguishable horizons (Manantial and Zacatenco), that those were replicated at Moyotzingo in the northern Puebla-Tlaxcala Valley (Moyotzingo A-B versus C-D), and that only markers of the *later* of those horizons appeared at Amomoloc and Tetel—or indeed at any of the sites we had visited in central Tlaxcala. We also determined that there probably had been no lacustrine resources to speak of in the vicinity of either site. It was beginning to appear that agricultural village life in our study area began only after 1000 B.C., an argument we were able to make with more force once we identified a refuse deposit of the Tzompantepec phase—García Cook's earliest for Tlaxcala—during our 2003 season and dated it with two consistent radiocarbon assays (Lesure et al. 2006). At this point, Jennifer Carballo chose as her dissertation project the early pottery of Amomoloc and Tetel. Also, by the end of the 2001 season, Borejsza had amassed a significant base of geomorphological information on human impacts on the landscape. He had found no buried Archaic or Early Formative sites and already had some evidence that human-generated erosional events in the study region dated no earlier than 1000 B.C.

As a result of these findings, we reformulated our research questions prior to the 2003 season. Borejsza decided to focus his dissertation on long-term agricultural history. I refocused the goals of the Formative village excavations on prestate social-structural transformations. Both of these reformulated research plans represented a shift away from my original conception in which central Tlaxcala was to be "a case" of early sociopolitical development for comparison to other cases, such as the Chiapas coast. Borejsza and I now recognized the importance of understanding the Formative of our study region in relation to long-term historical processes that played out at a much larger scale—the entire macroregion of Central Mexico. The theme of macroregional analysis is developed further in Chapter 12.

It is useful to view the Formative sequence in central Tlaxcala as framed by two great historical occurrences of macroregional scope. The first was the early sociopolitical synthesis and associated cultural florescence that occurred between 1400 and 1000 B.C. in southern Puebla, Morelos, and the southern Basin of Mexico. Consideration of Early Formative developments to the south allows us to develop reasonable working hypotheses concerning cultural inheritance already in place at the beginning of our sequence. For instance, much of the social and ideological basis for heritable socioeconomic differentiation probably already existed in the Apizaco area at the time of earliest identifiable settlement. The second occurrence, at the other end of our sequence, was the urban explosion at Teotihuacan during the first century A.D. It is from this other bookend to our sequence that we derive our reformulated problem focus for the excavations at Formative villages. The urban synthesis at Teotihuacan had a dramatic impact on sociopolitical systems across the central highlands. Although the political, economic, and demographic effects of Teotihuacan hegemony outside the Basin of Mexico are better documented in Morelos (Hirth 1978; Hirth and Angulo Villaseñor 1981), it is clear that central Tlaxcala was also profoundly affected (García Cook 1981; García Cook and Merino Carrión 1996; Snow 1966).

It is therefore obvious that any understanding of events in central Tlaxcala *after* A.D. 100 needs to include a macroregional frame stretching at least to Teotihuacan. Crucial scales for understanding social processes during the preceding Formative period are less clear. Were social transformations leading up to state formation at Teotihuacan much more localized, or did they also have a macroregional dimension in which central Tlaxcala should be included? The study region is located at the margins of the Puebla-Tlaxcala Valley, 30 to 50 km from major Late Formative centers such as Xochitécatl, Tlalancaleca, and Cholula (Figure 1.1, next page). Its Formative material culture is closely tied stylistically to Puebla and the Basin of Mexico. The region's inhabitants appear to have been just outside the main centers of political innovation and yet in close contact with those centers. As a result, this is a promising area in which to probe the areal limits of social-structural transformations leading toward state formation and thus the problem of choosing a relevant scale for the analysis of such processes in Central Mexico. One question to be addressed is whether there is any local evidence, during the first millennium B.C., for socioeco-

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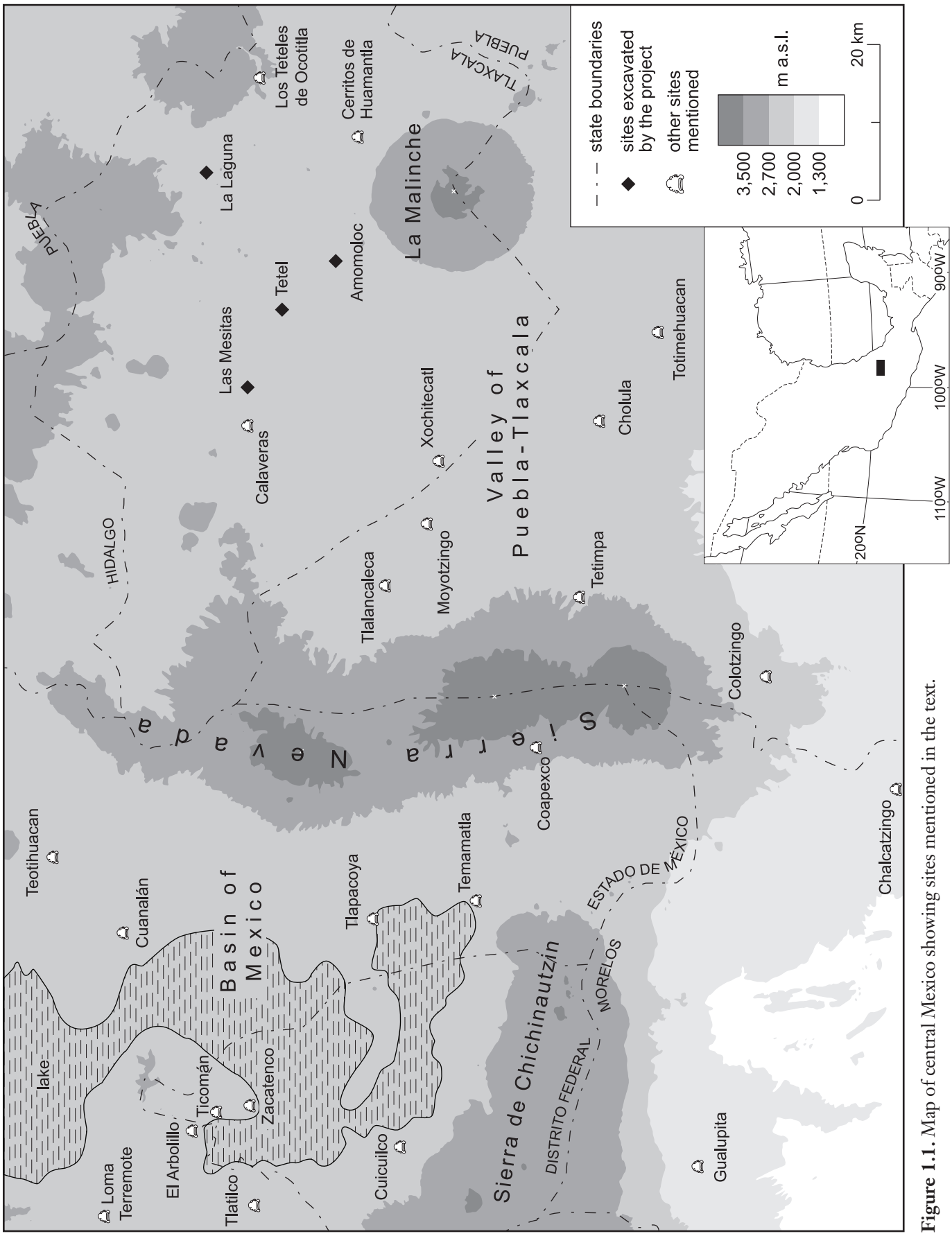

Figure 1.1. Map of central Mexico showing sites mentioned in the text.

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nomic changes that would anticipate state formation. Did kin-ordered social and economic structures characteristic of prestate systems in the Central Highlands continue fundamentally unchanged until the overt effects of Teotihuacan hegemony after A.D. 100, or, instead, were the inhabitants of Apizaco already making a transition toward a rural peasantry in the last few centuries of the Formative period?

These reformulated research questions lay behind the plan of excavations for the 2003 and 2004 field seasons. The goal was to recover domestic refuse from four sites: a large and a small site dating to the first part of the sequence (Tlatempa and Texoloc phases) and a similar pair for the second part of the sequence (Tezoquipan). Although we had by that point begun to reconfigure the first part of the local sequence, we still knew nothing of the complexities we would encounter in the later part. We were thus dating the Tlatempa and Texoloc phases to 800 to 350 B.C. and Tezoquipan to 350 B.C. to A.D. 100. Our pairs of sites were to be Amomoloc (large) and Tetel (small) for the early part of the sequence and La Laguna (large) and Las Mesitas (small) for the later part. We did indeed recover domestic refuse at all the sites, but the resulting collection of samples diverges from the initial scheme of paired early and late sites. This is mainly the result of complexities of chronology that will be introduced briefly in the next two sections and covered in detail in Chapter 11.

It is the investigations of Formative-era domestic deposits from 2000 to 2004 that provide the data to be considered in this and subsequent volumes. Borejsza will draw on his studies of human impacts on the landscape of central Tlaxcala in Volume 2, but the results of that work have mainly been published elsewhere (Borejsza and Frederick 2010; Borejsza et al. 2008, 2011). In areas B and F at La Laguna—in excavations far from the site center designed to study agricultural terraces that proved to be post-Formative—Borejsza did recover numerous Formative domestic and mortuary deposits. Those finds are covered in these volumes, beginning with Chapter 7.

Project personnel during the 2003 and 2004 seasons included Julie Bernard, Aleksander Borejsza, David Carballo, Jennifer Carballo, Nandi Cohen, Mauro de Ángeles Guzmán, Jason De León, Paola Demattè, Edna Luz Díaz Barrera, Paloma Diez de Sollano Guggenbuehl, María Guadalupe Espinosa Rodríguez, Charles Frederick, Andrea Gueyger, Juan Rodolfo Hernández Montes, Hugo Alberto Huerta Vicente, Karolina Kawczyńska, Edgar Pineda Santa Cruz, Virginia Popper, Isabel Rodríguez López, Rodrigo Vilanova de Allende, and Thomas Wake.

Project materials have so far provided the subject matter for four theses. Paloma Diez de Sollano Guggenbuehl (2008) studied the ceramics of Las Mesitas for her licenciatura thesis at the Universidad de las Américas in Puebla. Unfortunately, it proved so difficult to correlate her vessel form codes with those reported here that Isabel Rodríguez restudied the collection; it is that restudy that is incorporated in Chapter 9. Lourdes Couoh Hernández (2009) based her master's thesis in anthropology at the Universidad Nacional Autónoma de México on archaeometric analyses of human bone excavated at La Laguna. The grinding stones from our sites provided part of the material considered by Karen Watson (2011) for her master's thesis at California State University at Sacramento. Aleksander Borejsza (2006) wrote his UCLA dissertation on the history of land use from Formative to modern times. Jennifer Carballo (2011) wrote her University of Michigan dissertation on the most spectacular ceramics recovered in our excavations, the decorated white wares of the Tzompantepec through early Texoloc phases.

David Carballo worked with us in all four field seasons, although his UCLA dissertation concerned an obsidian workshop near the Pyramid of the Moon at Teotihuacan rather than materials from Tlaxcala. In the final field season of the project (2004), he mapped La Laguna and excavated in areas D and H. That work provided him with a platform to launch his own project at the site beginning in 2005. He began with extensive excavations in areas F and H (D. Carballo 2009); we have incorporated a few of the refuse contexts excavated in those seasons in the analysis for this volume. He has since shifted his focus to the site center, in work codirected with Luís Barba of the Universidad Nacional Autónoma de México.

THE FORMATIVE SEQUENCE IN CENTRAL TLAXCALA

Central to our understanding of the Formative sequence in central Tlaxcala is, first, the verification of the four ceramic *complexes* identified by García Cook and Merino Carrión and, second, our significant revisions to the absolute *dates* assigned to the four corresponding phases. The complexes and dates assigned by García Cook and Merino Carrión (García Cook 1974, 1981; García Cook and Merino Carrión 1988, 1989) are Tzompantepec (1700/1600–1200 B.C.), Tlatempa (1200–800 B.C.), Texoloc (800–350 B.C.), and Tezoquipan (350 B.C.–100 A.D.).Our revisions, initially described by Lesure et al. (2006) and elaborated in this volume (Chapter 11), involve greatly compressing the first three phases. We also shift the beginning of the fourth phase back in time but are unable to fix an ending date for it due in part to a gap in our sequence of refuse deposits in the later Formative. Finally, we define a new complex, Tenexac, positioned toward the end of the Formative sequence.

The ceramic complexes we identify and the corresponding dates are Tzompantepec (900–800 B.C.), Tlatempa (800–650 B.C.), Texoloc (650–500 B.C.), Early Tezoquipan (500–400 B.C. or later), and Tenexac (A.D. 50/100–150/200). There was a hiatus in the occupation of La Laguna from 400 B.C. through approximately 100 B.C. We remain uncertain of the ceramic complex in use at the

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site from 100 B.C. through the beginning of the Tenexac phase, at A.D. 50 or 100 (see discussion of La Laguna, below, and Chapter 11).

García Cook and Merino Carrión (1988, 1989) view the Tzompantepec phase as marking the earliest appearance of settled agriculturalists in Tlaxcala. We agree with that view for the Apizaco study region. As a result of our compression of the local chronology, however, the transition to the Formative in central Tlaxcala takes on new relations to sequences in other areas of the Central Highlands. Basically, the initial Formative in Apizaco shifts from surprisingly early to notably late. A late appearance of Formative agriculturalists makes sense for central Tlaxcala. Lack of stylistically "Olmec" materials across much of the state of Tlaxcala (e.g., García Cook 1981:246), despite the presence of such materials at nearby Moyotzingo in the better-watered Puebla-Tlaxcala Valley (Aufdermauer 1973), would be satisfactorily explained by an absence of settlement in Tlaxcala. Further, this shift in understanding would allow central and northern Tlaxcala to fall into line with the settlement history of the northern Basin of Mexico, much as suggested by Snow (1966, 1969), with an infilling of agriculturalists, presumably from the south, occurring after 1000 B.C. (Parsons et al. 1982:366–369; Sanders et al. 1979:94–96). In our reconstruction, Tzompantepec correlates with Tetelpan or the initial Zacatenco phase in the Basin of Mexico, around 900 to 800 B.C. The Tzompantepec complex could well be the material culture of recent migrants to central Tlaxcala, people who left more attractive locations for agriculture as populations there expanded.

As a result of our compression of the chronology, the Formative sequence in central Tlaxcala should now be understood as postdating rather than predating the earliest manifestations of sociopolitical complexity in the Central Highlands of Mexico. That early florescence, which would include the Tlatilco culture (Grove 1974a, 2007b) as well as early "Olmec" manifestations (Tolstoy 1989a), was centered in the southern part of the Central Highlands between 1400 and 1000 B.C. It included the establishment of such important centers as Tlapacoya, Tlatilco, Las Bocas, San Pablo, and (Barranca-phase) Chalcatzingo (Grove 2007b; Grove and Gillespie 1992; Niederberger 2000; Plunket and Uruñuela 2012:6–12). A demographic ripple effect of expanding population at the northern edge of those developments may have been the source for Tzompantepec-phase migrants to central Tlaxcala, but we have not found a perfect match with Tzompantepec material culture in any adjacent region and thus cannot pinpoint a source for any proposed migration. Of course, the adjacent Puebla-Tlaxcala Valley would be the obvious candidate.

By 800 B.C., across the Central Highlands, populations were expanding rapidly in areas peripheral to the Early Formative centers of population concentration, including the northern part of the Basin of Mexico and northern Tlaxcala (García Cook 1981; Merino Carrión 1989; Sanders et al. 1979; Snow 1966).This in-filling of the landscape coincided with the start of a second episode of coalescence of political centers, which were this time much more numerous than during the late second millennium. The Apizaco region fits comfortably into that overall picture during the Tlatempa, Texoloc, and Tezoquipan phases. We propose to accept in general terms García Cook and Merino Carrión's (1989:figures 4–9) synthesis of settlement patterns for the corresponding phases, even as we slide Tlatempa and Texoloc forward in time. By later Tlatempa, García Cook and Merino Carrión (1989:Figure 5) register 36 sites in our study area; 6 of them are identified as large villages.

It is with the Tlatempa phase that we have our first strong match of material culture with that of adjacent regions. Pottery and figurines have close correlates in the Puebla-Tlaxcala Valley and, beyond that, the Basin of Mexico. Ties are strongest to the nearby site of Xochitécatl, where platform construction and substantial population concentration were well under way at this time (Serra Puche 1998; Serra Puche and Palavicini Beltrán 1996; Serra Puche and Lazcano Arce 2011). It is possible that villages in our area came under the direct political control of Xochitécatl (30 km from Amomoloc) during the Tlatempa or Texoloc phase, but given the close spacing between major centers that developed in the following centuries, we suspect instead that areas of direct control were rather small. We suggest that sites in our region were under cultural dominance of Xochitécatl without direct political control. However, as we pointed out above, our research is not of a nature that would shed much light on the issue.

Populations continued to grow into the Texoloc phase, with further expansion in the scale of important centers. For the latter part of the phase, García Cook and Merino Carrión (1989:Figure 7) register about 60 sites in our study area, including four towns (with formal civic-religious centers) and nine large villages. Platform construction for public buildings or elite residences reached a new scale, but was again more marked in the Puebla-Tlaxcala Valley. We again suspect that towns developing in our area were substantially independent politically, but they were minor places in comparison to the impressive sites to the southwest (Xochitécatl, Tlalancaleca).

García Cook and Merino Carrión (1989) identify the Tezoquipan phase, which they date from 350 B.C. to A.D. 100, as the "cultural climax" of the local pre-Hispanic sequence, with the maximum number of sites observed for any phase. In our study area, they record 75 sites in the first part of the phase, including at least 10 towns and two or three large towns (with this density of sites, the map becomes difficult to read; see García Cook and Merino Carrión1989:Figure 8).In some publications, García Cook (1981:258) refers to the large towns as proto-cities or city-states. He includes La Laguna in this category but also a site called San José Tetel. He is not referring there to the site we excavated but to a large Late Formative site on the

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opposite side of the hill. (To avoid confusion, we refer to our site simply as Tetel, shortened from the local community name of San José Tetel.)

The pattern of demographic expansion and steadily expanding sizes of the largest centers is a general one across Central Mexico during the first millennium B.C. By 100 B.C., most habitable areas were divided into small polities controlled by population centers boasting substantial public architecture, monumental sculpture, and thousands of inhabitants. Large centers were spaced every 6 to 12 km in the Basin of Mexico, though they were dominated by the end of this span by Cuicuilco and Teotihuacan, each with populations of perhaps 20,000 (Sanders et al. 1979:105–107). In the Puebla-Tlaxcala Valley, survey coverage is not as systematic or well published, but major sites with monumental architecture and sculpture appear to have been spaced every 6 to 15 km, from Tlalancaleca on the northeastern slopes of Iztaccíhuatl to Totimehuacan south of Puebla (García Cook and Merino Carrión1989, 1996; also McCafferty 1996; Serra Puche 1998; Serra Puche and Lazcano Arce 2011). In our study area, spacing was similar, though the top-tier sites were smaller. For the Tezoquipan phase of northern Tlaxcala, Merino Carrión (1989) finds sites of 18 to 35 ha, sometimes in close pairs, spaced 5 km or so apart. Some sites, including La Laguna, were considerably larger than 35 ha. A point to be elaborated in the next section is that La Laguna, due to an unusual occupation history, was a regionally important center twice during the Late–Terminal Formative, first before 400 B.C., then again after 100 B.C.

It appears that by the later Formative, our study region was divided into multiple small polities, each centered on one or more towns with monumental civic-ceremonial architecture. Impressive as some of these were, they were still dwarfed by centers to the southwest like Tlalancaleca. For example, García Cook (1972b, 1981:252–253) identified 24 significant mounds plus another 50 probable residential platforms at Tlalancaleca; he also reports seven significant stone sculptures. At Laguna, we mapped nine sizable mounds and seven probable residential platforms; we identified no monumental sculpture.

Major changes occurred across Central Mexico between 100 B.C. and A.D. 100 (Plunket and Uruñuela 2012:31–34). Teotihuacan expanded rapidly in population and political importance (Sanders et al. 1979:105–107). Major centers in the Puebla-Tlaxcala Valley, including Tlalancaleca and Xochitécatl, were abandoned, though Cholula thrived (Plunket and Uruñuela 2012; Uruñuela et al. 2009). Political competition was a major factor, but volcanic activity was also a disrupting force, particularly the eruption of Popocatepetl in the middle of the first century A.D. (Plunket and Uruñuela 2000, 2006). From A.D. 100 or so, the aggressive political expansion of the Teotihuacan state impacted all adjacent regions. Parts of Tlaxcala came under the direct control of Teotihuacan, though García Cook and Merino Carrión (1988, 1996) identify much of our study area as part of a stylistically and thus perhaps politically independent tradition termed Tenanyecac (100–650 A.D.). Settlement underwent "ruralization," and several larger communities of the local Terminal Formative were abandoned. Although the details are complex, it is clear that the trajectory of development that had begun in central Tlaxcala around 900 B.C. was interrupted sometime between A.D. 100 and A.D. 200 and that the political and economic hegemony of Teotihuacan was a major determining factor in the interruption. These developments thus form an appropriate closing bookend for our Formative millennium in the Apizaco region.

THE SITES

Our excavations of 2003 and 2004 were planned to augment our samples of domestic refuse from the early and late parts of the Formative sequence. In renewed excavations at Amomoloc, we were lucky enough to find a Tzompantepec refuse feature; we also expanded our Tlatempa refuse sample to the point that we are now able to distinguish early and late subphases. The goal for the later part of the sequence was to excavate at one small village site (Las Mesitas) and one regional center (La Laguna) to provide some basis for assessing synchronic as well as diachronic variation in social and economic practices. The occupation at Las Mesitas turned out to be brief and relatively early; the samples recovered do not overlap in time with the bulk of those excavated at La Laguna. At the large site of La Laguna, the history of occupation proved to be more complicated than we originally supposed. This section provides a brief description of each site excavated, an assessment of how it might have fit into a larger settlement system, and an initial characterization of the nature of our sample.

The sites are dispersed across central Tlaxcala (Figure 1.1). From Tetel, Las Mesitas is 11 km to the northwest, La Laguna 19 km to the northeast, and Amomoloc 9 km to the southeast. The straight-line distance between Las Mesitas and La Laguna is 27 km, between Las Mesitas and Amomoloc 20 km.

Amomoloc

Amomoloc, earliest of the sites, is located in the southeastern part of the study region on the lowermost slopes of La Malinche volcano. It lies just to the south of the modern town of San Andrés Ahuashuatepec, on land that slopes gently down toward the Amomoloc River. The river is 200 m south of the intact remnant of the site, in a deeply incised barranca. A little upstream, an outcrop of resistant bedrock forms a small waterfall. Several lines of evidence indicate that the river already flowed in a deep gorge in the Formative. One of them is that an ignimbrite exposed at the waterfall (and perhaps elsewhere along the streambed) appears to have been used for chipped stone tools at Amomoloc and another site across the river (Aleksander Bore-

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jsza, personal communication 2005). Surface scatter of Tlatempa diagnostics covers more than 6.75 ha, but after our final season of excavation we are no longer confident that these boundaries approximate those of the Formative community. It is possible that erosion carried sherds beyond the original boundaries. We can conclude that the site was between 2 and 7 ha; we favor the higher end of that span, but we cannot be sure. As a result of these findings, our original assessment of Amomoloc as a "large village"—to be compared with the small village of Tetel—is more equivocal than we originally thought.

García Cook (1972a) identified the site as T-79. It was the subject of two reports by Abascal (1976, 1996). Abascal's plan of houses and burned features was based on surface finds and should be considered schematic (Ángel García Cook, personal communication 2002).There is no evidence of platform construction, but significant portions of the site have been completely destroyed. Borejsza's work indicates that terracing at the site postdates the Formative occupation.

Amomoloc was occupied during the Tzompantepec and Tlatempa phases, approximately 900 to 650 B.C. There is no evidence of Texoloc or later Formative occupation. Several Terminal Classic and Postclassic settlements lie in the vicinity, but apparently only ephemeral later activities directly impacted the preserved portion of the site (with the exception of terrace construction of uncertain date). As a result, the site is largely a single-component Tlatempa settlement with an earlier Tzompantepec occupation of unknown extent.

During the height of its occupation Amomoloc was probably a modest village and not one of the largest in the Apizaco region—an *aldea concentrada chica* in García Cook and Merino Carrión's (1989) terminology. The large village indicated in the vicinity of T-79 in García Cook and Merino Carrión (1989:Figure 4) appears to correspond to the site labeled T-83 in García Cook (1972a:Figure 1). It lies a few kilometers to the southwest of Amomoloc. Borejsza and Bravo visited on a few occasions what may have been part of that site and saw remnants of two mounds and deep underground tombs but were met by hostile landowners.

Our excavations at Amomoloc, which spanned three seasons, revealed numerous Formative features, including refuse-filled pits, roasting pits, and a single burial. We recovered a small sample of Tzompantepec-phase refuse and a large sample dating to the Tlatempa phase.

Tetel

Tetel, on the slope of a small cinder cone near the Zahuapan River near the center of the study region, is today on the outskirts of Apizaco, just uphill from the community of San José Tetel. The hill on which Tetel is located is a prominent feature of the local landscape, and there are numerous sites, small and large, in the vicinity. Those include a Late Formative occupation, larger than Tetel, concentrated on the other side of the hill, and Postclassic remains immediately downslope from our site. Tlatempa diagnostics cover an area of about 2 ha and provide a basis for systematically defining the boundaries of Tetel in relation to other nearby sites. There are no evident mounds at the site, though it is worth noting that the terraces were refurbished by a bulldozer a couple of decades ago.

García Cook (1972a) labeled the site T-26 and identified it as having an Early Formative (Tzompantepec) component. Our excavations and surface explorations revealed no Tzompantepec material, leading us to debate among ourselves whether we were in fact excavating T-26.The case in favor appears to be strong. Our phase assignments for sites surrounding Tetel match up well with those for sites surrounding T-26 in García Cook's map (1972a:Figure 1). In the current site registry of the Instituto Nacional de Antropología e Historia, García Cook's T-26 and T-49 have been lumped together. It seems to us useful to separate Tetel from T-49, however, because of the absence of Tlatempa diagnostics at the latter site. The large Tezoquipan town (city-state) that García Cook (1981:258) refers to as San José Tetel appears to be T-54 or else a combination of the sites identified as T-49, T-54, and T-55 on the 1972 map. Much of the hill has been covered by the urban sprawl of Apizaco since our first visits, so resurveying these sites will no longer be possible.

Tetel was occupied during the Tlatempa and Texoloc phases. If our excavated materials can be considered representative, we would set the initial occupation partway through Tlatempa and abandonment before the end of Texoloc, perhaps 750 to 550 B.C. It would have been an *aldea concentrada chica* in García Cook and Merino Carrión's (1989) terminology, a minor community for the Texoloc phase. However, by that phase it may have been only a short walk away from a larger settlement.

Our excavations, confined to a single season, revealed several Formative features, mostly pits filled with refuse. In two cases there were also deposits of human bone. We recovered moderate-sized samples of domestic refuse of the Tlatempa and Texoloc phases.

Las Mesitas

Las Mesitas is located on sloping uplands above the deeply incised Xilomantla barranca. It is a short walk from the modern community of Las Mesas. A light scatter of sherds covers about 7 ha. We excavated on either side of an eroded road cut that had exposed Formative features with abundant refuse.

Initially, we believed we were excavating in García Cook's (1972a) T-86, identified as having a Formative and Classic occupation; that site corresponds to E14B33-080 (Las Mesas) in the registry of the Instituto Nacional de Antropología e Historia. Further surface walking and more precise UTM readings, however, indicate that the area we

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excavated was some 800 m to the southeast of Las Mesas proper (thus our designation Las Mesitas).

I now believe that the Formative "community" was a dispersed scatter of homesteads, probably each surrounded by cultivated fields. Most of the materials deriving from our excavations were probably deposited by the inhabitants of a single homestead, occupied for less than a century, perhaps no more than a couple of generations, during the Texoloc phase (650–500 B.C.). Surface finds indicate that occupation in other locations at the site continued into Tezoquipan.

We had hoped that the excavations at Las Mesitas would provide refuse samples from a small site overlapping in time with the full occupation of the large site of La Laguna, but the overlap appears to be only with the earliest identified component at La Laguna. We excavated several refuse-filled features, one of which also included a human burial.

La Laguna

La Laguna is located on lands of a former hacienda of that name near the modern industrial park north of Apizaco. It is a qualitatively different site than the others we investigated both in terms of its size and because of the presence of platform architecture. A plaza flanked by large mounds, including a ballcourt, lies nestled between three hills. Formative settlement extended far up the slopes of the hills, covering a total area of at least 100 ha. Although there was a cluster of mounds at the center of the site in what we take to be the civic-ceremonial core, mounds 3 to 5 m high appear at distances of several hundred meters from the core. These suggest some internal complexity to administrative-religious organization.

The site was described by Snow (1966, 1969), who emphasized its considerable local importance. García Cook (1981:258) identifies it as a Tezoquipan city-state or large town. Occupation extends from approximately 600 B.C. through A.D. 150 or 200.The site appears to have been unoccupied for most of the Classic period, but Postclassic occupation covers part of the Formative site.

For a variety of reasons, La Laguna pushes the boundaries of feasibility of the simple scheme for data recovery and analysis employed so effectively at the other sites. Exposing Formative refuse concentrations proved more challenging and time-consuming at La Laguna because the deposits are often of greater depth and Formative occupation surfaces are preserved in some areas. Further, there appear to have been distinctive refuse disposal practices at La Laguna. Whereas bell-shaped pits at Amomoloc and Tetel tended to be filled with materials that can legitimately be labeled secondary refuse, that was a rarer occurrence at La Laguna. By the end of the occupation, use of the bell-shaped storage pit had been abandoned, and trash-filled pit deposits are consequently rare. At La Laguna, we are therefore more permissive in our selection of samples appropriate for analysis (see Chapter 8). The size and evident internal complexity of La Laguna also raise concerns about how representative of the whole ancient community can be any necessarily limited sample.

The biggest challenge posed by La Laguna to the reformulated research plan of the 2003–2004 seasons has nevertheless been the surprising occupational history of the site and the difficulties we encountered in working out a chronology. Dominating the history of the occupation is a hiatus—or dramatic depopulation without full abandonment—between 400 and 100 B.C. Initially, assuming García Cook's chronology, we considered the first occupation of the site (that is, pre-hiatus) to be Texoloc and the second occupation (post-hiatus) Tezoquipan. We were a couple of years into the post-field analyses when we finally admitted that we had a fully "Tezoquipan" occupation (matching García Cook and Merino Carrión's [1988:296–304] description) from before the hiatus—indeed, that the overwhelming majority of excavated pre-hiatus features were Tezoquipan rather than Texoloc. Around the same time, David Carballo and I recognized what we have dubbed Tenexac as a ceramic complex dramatically different from Tezoquipan, in use at the end of the occupation of the site.

According to our current understanding of the site, La Laguna grew dramatically from what was probably a small Texoloc-phase settlement to reach its maximum areal extent in Early Tezoquipan, from 500 B.C. through 400 B.C. During this century, it was one of the largest communities in central Tlaxcala and was likely the seat of a small polity. This modest regional center was nevertheless abandoned at approximately 400 B.C.

Around 100 B.C., the population surged once again. Mound construction resumed, and the site again acquired regional importance. Unfortunately, we are not able to definitively describe the ceramic complex in use during the initial second occupation (100 B.C. through approximately A.D. 50). We refer to this era as Late Tezoquipan, but it needs to be emphasized that this is a term of convenience, a placeholder that, unlike the designations for our other complexes, is not linked to a clearly defined set of distinctive material culture attributes. The seemingly contradictory evidence on pottery styles of this era is reviewed in Chapter 11.

Investigations carried out at La Laguna under the aegis of my Apizaco Formative Project included mapping of the site and excavations in areas D and H, which revealed a few Tezoquipan pit features as well as some Tenexac architectural elements and middens. Our knowledge of the site is greatly expanded by Borejsza's work on terraces along the hill slopes toward the edges of the site. That work produced a wealth of information on land use over time but also revealed numerous Formative pit features in areas A, B, and F. In addition, Borejsza excavated several burials and other deposits of human bone in areas B and F. Finally, David Carballo's work, begun in 2005, has led to the recovery

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of further architectural elements and numerous additional features and middens. The portrait of La Laguna developed in the present volume will soon face evaluation and revision in that ongoing work.

PROVENIENCE DESIGNATIONS: LOTS, FEATURES, CONTEXTS

The following are brief definitions of the nomenclature we use to identify excavated proveniences and analytical designations such as primary and secondary contexts.

Excavation Units. To build redundancy into provenience designations, a slightly different system for labeling excavation units was used at each site. Those systems are described in the appropriate chapter for each site.

Minimal Provenience Designation (Lots).The minimal provenience designation was the lot. Lots were conceived to provide maximum flexibility to the excavator. A lot could be any layer or part thereof deemed potentially significant. The upper and lower bounds of lots generally conformed to natural stratigraphy, but they could be arbitrarily defined if the excavator so chose. If a single layer extended through two or more excavation units, it was given different lot numbers in each unit.

Lot Nomenclature. Each lot received a unique number designation. Blocks of lot numbers were assigned to each site. Whenever an excavator opened a new lot, he or she went to the master list for that site and signed out the next available lot number in sequence. As a result, lot numbers that are numerically adjacent (for example, 105, 106, 107) were assigned near each other in time, but they are not necessarily in the same excavation unit. The stratigraphic sequence within a single excavation unit can therefore be a series of seemingly disparate lot numbers. For example, the sequence of lots in Tetel's Unit C4 was 32, 33, 46, 77, 80, 86.The main advantage of this system is that the lot number fully designates provenience. There are no duplicate designations in other excavation units or sites.

Features. Deposits created as a direct result of human activity were designated features. Identification of features was one of the primary goals of the excavations. The term *feature* as we use it is less specific than our term *context*, described below. For example, a pit and its fill are both referred to as the same feature, but they may be designated as distinct contexts. Most of the features we identified were subsurface pits, either open profile or bell-shaped. Generally, we bisected these in our excavations, digging out the fill of half the pit so that we could record the exposed profile before excavating the remainder. If an excavation unit boundary crossed through a pit feature, we simply followed that in sectioning it for excavation.

Feature Nomenclature. We divide our features into three series—A, B, and C—according to the project under which they were recovered. The main series (A) includes all features excavated under my Apizaco Formative Project (2000–2004). Features from Amomoloc, Tetel, and Las Mesitas are all series A. In addition, excavations in areas D and H at La Laguna are series A. In series A, feature numbers are unique rather than site specific. Thus the designation A4 was used only at Tetel, with the lowest feature number at Amomoloc being A20. Series B includes all features excavated by Borejsza in his dissertation work on terraces at La Laguna (2003–2004).The numeration for series B overlaps with that of series A, making the initial letter necessary to uniquely designate a feature. Series C designates those features excavated by David Carballo in his work at La Laguna beginning in 2005 and incorporated into the analysis of this volume. Feature numbers of Series C do not overlap with those of series A or B.

Strata in Features. Pit features were usually bisected for recording of stratigraphy. In understanding and describing some features, we found it useful to identify a simplified series of strata, each of which might be composed of a number of layers that nevertheless cohered together in some way. Such strata were numbered from the top down. Like our feature numbers, our full designations for strata are unique. Thus Stratum A4-1 is the uppermost stratum of pit fill in Feature A4, and Stratum A13-4 is the fourth stratum in Feature A13. Borejsza's system (Chapter 7) was somewhat different.

Provenience Labels. Field labels took the following format: (site) (area within site) (excavation unit)/(lot number), followed by F.(feature number), if any. Lot numbers, always preceded by a slash, indicate a unique provenience. All other information is redundant, provided to guard against clerical errors and to allow recovery of partial information should a lot number become illegible. Feature numbers, in particular, were often left off artifact labels.

Contexts. What we refer to as contexts are analytically more refined understandings of our features. In the case of contexts, we make a basic distinction between primary and secondary (Schiffer 1972). Primary contexts designate items or features in their location of creation or use, whereas secondary contexts are those removed from their location of use. Platforms and walls are primary contexts, as are burials (although this last category we distinguish from other primary contexts, as described below). Pits used for storage purposes can be considered primary contexts, whereas their fill typically consists of materials in secondary context. As a result, features can be analytically divided into multiple contexts, both primary and secondary. (In some instances, secondary deposits are really more tertiary, a distinction discussed in the next paragraph). In practice, we designate a primary context only when we have a clear idea of use. Thus bell-shaped storage pits are registered in Chapter 8 as primary contexts with unique labels, but open-profile pits, the uses of which remain unclear, are not. An assemblage of items abandoned on the floor of a pit is identified as a primary context when there is evidence indicating that it relates to the original use of the pit. However, as Schiffer (1987) makes clear, assemblages of items abandoned in a structure or pit—abandonment assemblag-

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es—are not necessarily the full assemblages of tools actually used in those locations. Considerations like size, weight, and value all come into play when people decide what to take with them and what to leave behind. For these reasons, when we identify an abandonment assemblage at the bottom of a bell-shaped pit, we distinguish it as a primary context separate from the pit itself.

Secondary and Tertiary Contexts. Schiffer (1972) used the concept of secondary context broadly to refer to materials removed from their primary contexts of use. For studies of refuse in sedentary societies, the distinction between primary and secondary refuse often has little relevance, since virtually no refuse is recovered in its primary context. More relevant is a distinction between secondary and tertiary contexts (Rosenswig 2009:16). Secondary refuse refers to items collected from their primary contexts of use and dumped in another location but not subsequently disturbed. Tertiary refuse refers to items dumped in one location and subsequently reworked in various ways, including removal to still another location. That distinction is very messy in practice, and few deposits can be identified as pure secondary refuse. It is more helpful to think of a distinction between secondary and tertiary refuse as a matter of degree. In evaluating samples of refuse, we have assessed the degree to which they conform to the ideal model of what constitutes secondary refuse or they stray instead toward the mixed, worked-over character of tertiary refuse (see Chapter 8). Since the secondary/tertiary distinction is a matter of degree, we do not try to distinguish secondary from tertiary contexts in our designations of analytically interesting components of features.

Special Features. Some features were assigned numbers apart from their feature numbers for easy identification. Thus we kept a separate enumeration of walls, platforms, and burials at each site. We make use of the separate numbering for walls and platforms in our discussion, though each is also assigned a formal context designation. Burials we refer to mainly by context designations (A4-3B and so forth). Although burials (and other deposits of human bone) are primary contexts, we have found it useful to systematically distinguish them from other such contexts (see Chapter 8).

Context Nomenclature. Each context is assigned a unique label according to the following format: (feature series) (feature number)-(sequential number within feature) (letter designating type of context).The final letter is P, S, or B, designating, respectively, primary context, secondary context, or burial. Thus context A4-1P is the first context in Feature 4 of Series A; it is in this case a primary context—the pit itself. Context A4-4S is the fill of that same feature, while A4-3B is the deposit of human bone on the pit floor. A catalog of excavated contexts is provided in Chapter 8.

ORGANIZATION OF THIS VOLUME

This book, the first of a projected three, covers excavations, pottery, figurines, and chronology. Chapters 2 through 7 describe our field investigations at the four sites. Amomoloc, Tetel, and Las Mesitas are each dealt with in one chapter (2, 3, and 4, respectively). Work at La Laguna is described in three chapters: an overview by Borejsza and David Carballo (Chapter 5), followed by descriptions of excavations in different parts of the site (chapters 6 and 7). Chapter 8 provides a catalog of analytically important contexts from the excavations. Chapter 9 presents pottery types and vessel forms, while Chapter 10 reports on the stylistic analysis of figurines. Chapter 11 presents our Formative chronology for central Tlaxcala based on pottery, figurines, radiocarbon dates, and stratigraphy. Finally, Chapter 12 develops the issue of macroregional analysis, identifying research topics to be pursued in subsequent volumes.

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CHAPTER 2

Amomoloc

Jennifer Carballo and Richard G. Lesure

AMOMOLOC IS A Formative village site located approximately 1.5 km south of the modern town of San Andrés Ahuashuatepec, just north of the Río Amomoloc (Figure 1.1). In the early 1970s, through the survey associated with the Proyecto Arqueológico Puebla-Tlaxcala, García Cook identified the site as T-79 (García Cook 1972a:Figure 1). Amomoloc also forms part of the site designated E14B33-076 by the Registro Público de Monumentos of the Instituto Nacional de Antropología e Historia, a designation that incorporates García Cook's sites T-77, T-78, and T-79 and thus combines what were originally recorded as separate Classic and Postclassic sites. In provenience designations, we have referred to Amomoloc by the numbers given to it by the registry (TLX-076) to conform to the more recent catalog system established by INAH, but our investigations took place only at the spatially distinct Formative component.

In August 2000 we conducted a brief surface study of Amomoloc, making systematic collections and preparing a basic map. In 2001 we surveyed the site with a total station to create a more detailed topographic map and excavated a total of 32 m^2 in three areas of the site to reveal six subterranean features, all dating to the Tlatempa phase.

In August and September of 2003, we excavated in four areas of Amomoloc, in two cases extending excavations done in 2001. We exposed 195 m^2 and 17 features, including bell-shaped pits, shallow trash pits, and roasting pits filled with rocks. One of the bell-shaped pits excavated in 2003 was found to date to the Tzompantepec phase, while the remaining features all pertained to the Tlatempa phase.

In July and August of 2004, in the hopes of uncovering more Tzompantepec features, as well as to improve our understanding of how settlement was distributed, we excavated a systematic random sampling of the site (described in more detail below), which brought the total excavated area of the site to 471 m^2 and 34 features. We did not encounter additional Tzompantepec features, but the excavations confirmed that occupation at this site did not extend beyond the Tlatempa phase.

THE SITE

The site of Amomoloc is located west of the road leading south from San Andrés Ahuashuatepec to San Antonio Coaxomulco, on a gradual slope that ends at the edge of a barranca associated with the Río Amomoloc (Figure 2.1) As is common across the study region, sediments in this area are probably pyroclastic in origin but redeposited by wind. Upon exposure to air and water, they take on a cement-like hardness, yielding a formation locally referred to as *tepetate*. The modern ground surface in much of the site consists of tepetate.

Lying at an average elevation of 2,425 m above sea level, the site is a dispersed sherd scatter covering 6.75 ha. Settlement over this area does not appear to be continuous but is concentrated on terraces 1 through 4 and on a much eroded area to the south of the terraces, close to the edge of the barranca. Across the road leading to San Antonio Coaxomulco, about 500 m from the excavated Formative component, is a separate sherd scatter of Postclassic material. In this highly eroded area, sherds rest directly on tepetate. As no Formative materials were found here, we do not consider this area to the east of the road part of the site that we refer to as Amomoloc.

The Formative site is bordered on three sides by deeply eroded barrancas. Most of it is terraced. The terraces located upslope of the site, as well as terraces 5 through 8, are under maize cultivation, while Terrace 1 is eroded down to

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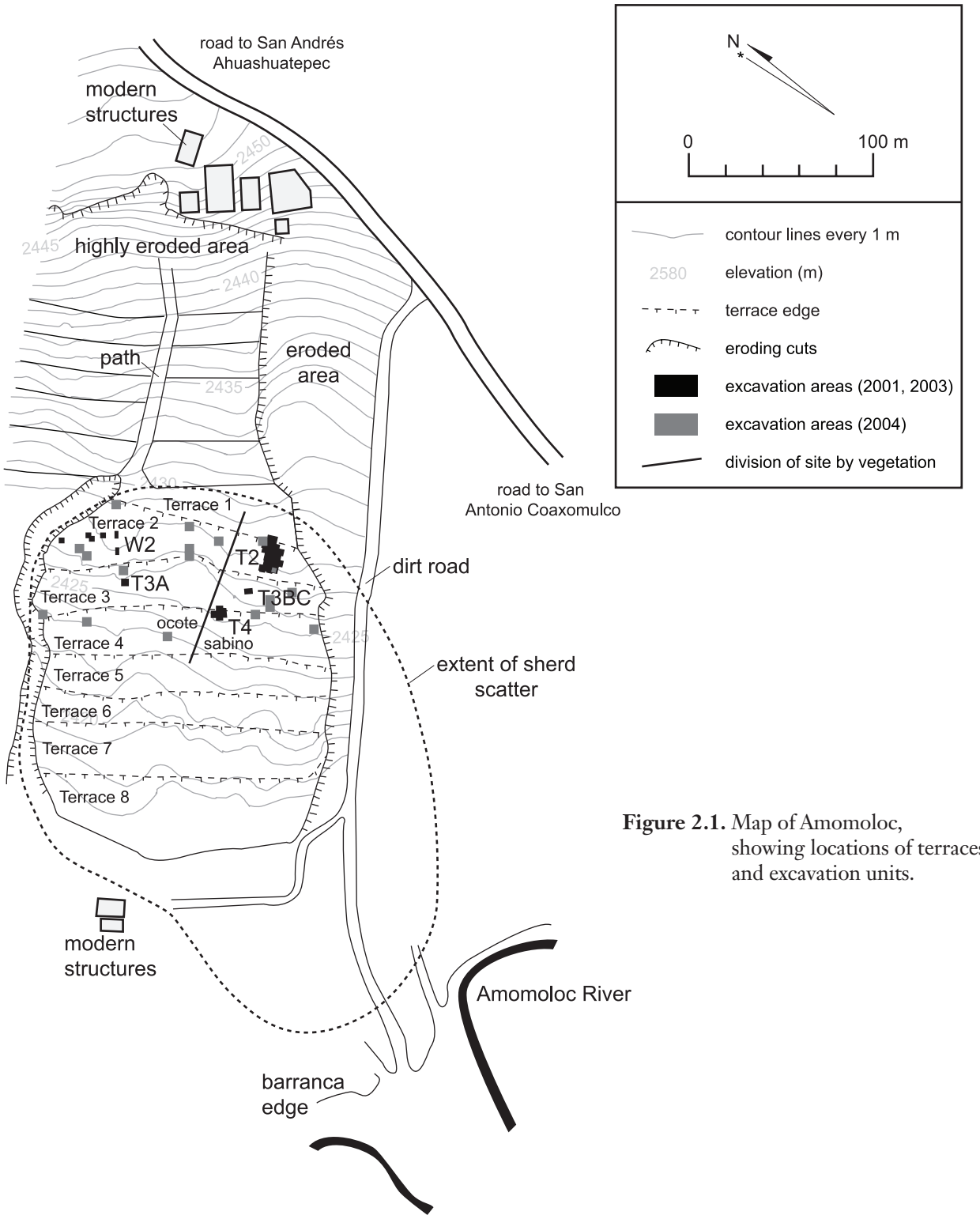

Figure 2.1. Map of Amomoloc, showing locations of terraces and excavation units.

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the tepetate-forming layer. Terraces 2 through 4, the only areas of the site where we found intact features, do not appear to have been cultivated for many years and are covered with different types of vegetation. The southern side of terraces 2 through 4 is grassy, with small conifers (*sabino*), while the northern side is more eroded and sandy and supports tall pine trees (*ocote*). The approximate dividing line between the two is indicated with a heavy solid line in Figure 2.1. The division between the two forms of vegetation turns out to correspond to the history of the underlying sediments, as became apparent during our 2004 season.

Areas close to the barranca of Río Amomoloc where Formative sherds were also found on the surface are not terraced and are highly eroded (Figure 2.2). It is very unlikely that any intact features are left to be found in this area of the site, as we did not find any features in the few profile cuts that remain.

In fact, destruction of Amomoloc by erosion is so severe that we believe that no Formative occupation surface remains preserved anywhere at the site. Only subsurface features, such as bell-shaped storage pits and pits with open profiles of different shapes and sizes, have managed to avoid destruction.

EXCAVATION STRATEGY OVER THREE SEASONS

Excavations were confined to the three terraces covered in trees (terraces 2 through 4), covering an area of 1.07 ha. Our strategy of investigation evolved over the three seasons of excavation (2001, 2003, and 2004), based on the progress of our findings.

Goals of the 2001 excavations were to search for intact Formative features, assess the age of the terraces, and attempt to identify Tzompantepec- and Tlatempa-phase components. We were successful in all these goals, except that we found no evidence of a Tzompantepec occupation during that season. Excavation units were labeled with letters assigned sequentially on each terrace (Figure 2.3). A full unit designation thus required the terrace number. For example, T2B is Unit B on Terrace 2. Lots and feature designations were assigned as described in Chapter 1. An excavation laid out to investigate the terraces themselves (T4A and T4B) indicated that terracing postdated the Formative occupation. Our search for Formative features, though more modest than we had intended due to difficulties finding local workers, resulted in the discovery of a concentration of three intact Tlatempa pits on Terrace 2, descending as much as 60 cm below the modern ground surface. We also found an intact roasting pit on Terrace 2 and explored a more elaborate rock-lined roasting pit or kiln on Terrace 3 that had been visible on the surface. Although these pit features did not extend as deep as those at the Tetel site, Amomoloc appeared to be the earlier of the two sites, and we decided it merited further investigation.

The goal for the 2003 season was recovery of additional

Figure 2.2. Severe erosion at the site of Amomoloc.

early refuse-filled features. We were successful in that endeavor, finding 18 Tlatempa pits of various kinds as well as the only Tzompantepec-phase feature recovered in all the excavations of the project. We also recovered intact bell-shaped pits descending up to 1.5 m below the modern ground surface. Stratigraphic observations of these pits allowed us to be certain that at least in the southern part of terraces 2 and 3, subsurface pit features were relatively intact. Although the Formative ground surface itself had eroded away, no more than 20 to 30 cm was missing. We opened a large area on southern T2, revealing features in two concentrations (Figure 2.4). We also found two features in a small test on T3. Somewhat surprisingly, given the density of features to the south, six separate units on the north end of T2 (totaling 22 m^2) revealed no features. Those are the small units in black near the label W2 in Figure 2.1.

As the result of the overall success of our 2003 season, we shifted in 2004 from simply recovering features to a more ambitious attempt to understand the organization of the Formative community. Based on arguments derived from previous work on Formative communities in highland Mexico, as well as the results of our first two seasons at Amomoloc, we devised a program of simple random testing in 4-x-4-m units. Our fundamental assumption, drawn from work by members of the University of Michigan project in Oaxaca at San José Mogote, Tomaltepec, and Tierras Largas (Flannery ed. 1976; Whalen 1981; Winter 1972), was that Amomoloc would have comprised a scattering of small houses of perishable materials, each surrounded by a "yard" in which domestic activities took place. We reasoned that the archaeological signature of a house-yard would be a concentration of subsurface features, including bell-shaped pits, roasting pits, and burials. Although loss of the Formative ground surface at Amomoloc made identification of houses themselves a doubtful prospect, we reasoned that we might be able to identify house-yards by looking for dense concentrations of subsurface features. Indeed, we thought the shallowness of the deposits at the site might be an advantage in that we would be able to investigate a significant total area on our modest budget.

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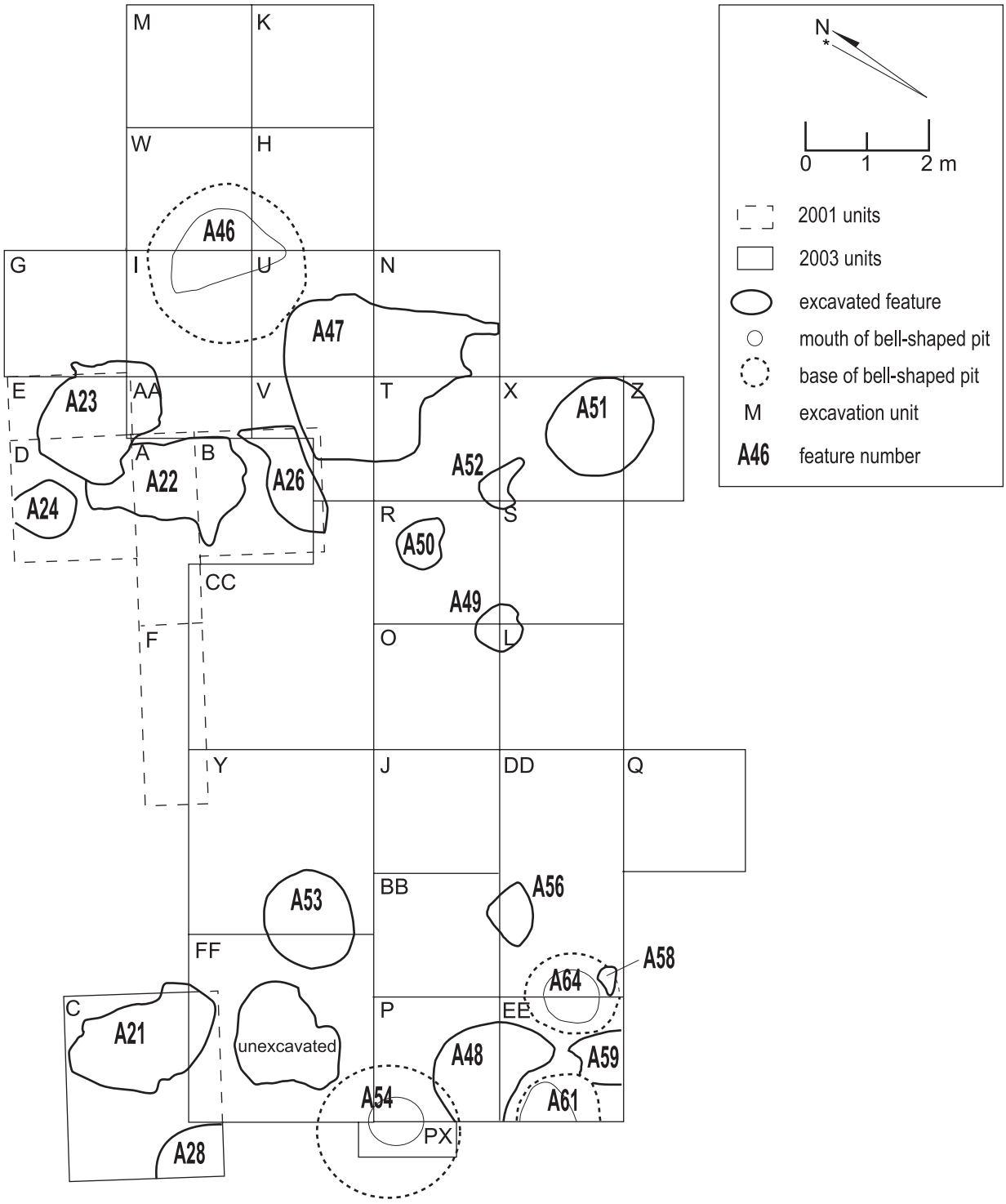

Figure 2.3. Excavations conducted on Terrace 2 during the first two seasons at Amomoloc. Units T2A–T2F were excavated in 2001, revealing features 21–24 and 26, while units T2G–T2FF were excavated in 2003.

One aspect of community organization that seemed both of general interest and amenable to investigation at Amomoloc was the *density of packing of house-yards*. Our reasoning went as follows. An important initial consideration was whether the site might be an unreadable palimpsest of features without evident grouping into house-yards. Two considerations seemed to suggest that this was not the case. First was the density of features on southern T2 in contrast to the absence of features in our tests in the northern part of T2. Second was the pattern of features in our

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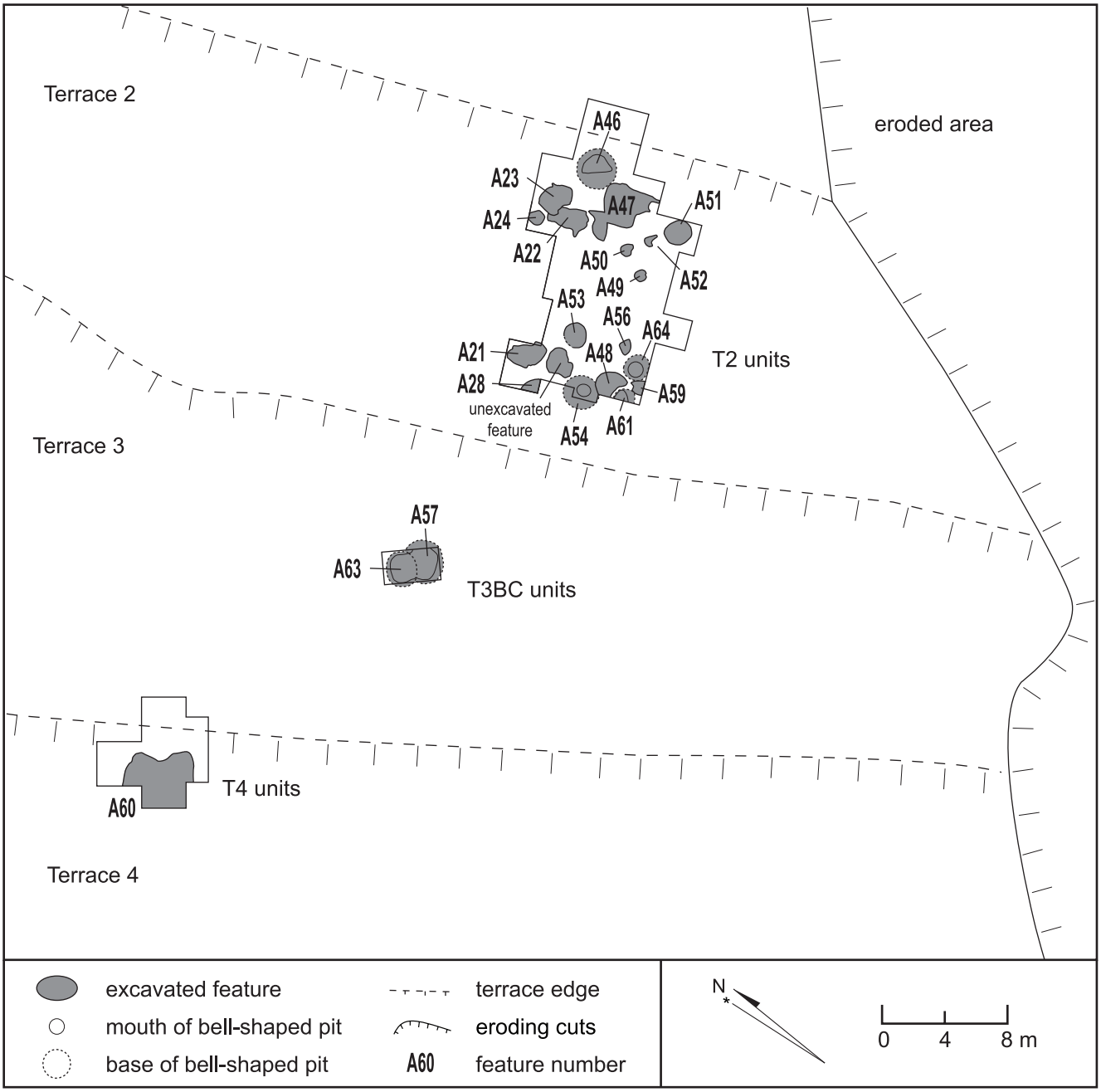

Figure 2.4. Southern portion of Amomoloc, showing features from the 2001 and 2003 excavations.

large T2 excavation (Figure 2.4). We had cleared 144 m^2 and revealed 18 Formative features that seemed to form two concentrations separated by about 4 m. The features included bell-shaped storage pits, shallow pits or toss-middens, hearths, and roasting pits. In the empty area between the concentrations of features, we noted a single possible posthole. We speculated that what we had excavated was the yard area of a single house, now eroded away except for subsurface features. A small house of perishable materials such as those evidenced at Formative sites in other parts of the Central Highlands could have stood in the middle of our two concentrations. This idea seemed to be consistent with other extensive excavations of Formative habitation zones in highland Mexico, and it remains a plausible interpretation of our findings on southern Terrace 2, though we now would differentiate the features by subphase.

We decided to base our sampling procedure on inferences drawn from the southern T2 concentration of features. We estimated that a house-yard would be characterized by a concentration of numerous subsurface features about 17 m in diameter. A house-yard would thus cover approximately 252 m^2, some of which would be empty of

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features. This hypothesized house-yard size, based on evidence from Amomoloc—ours and that of Abascal (1976, 1996)—is compatible also with results from other areas (Whalen 1976:78; Winter 1972:85–87).

To investigate the density of occupation in the site, we therefore proposed conceiving of a kind of macrofeature—the house-yard. We had neither the time nor the resources to uncover all house-yards at the site. We therefore needed to devise a sampling procedure that would allow us to infer the density of house-yards without exposing them fully. Since we would identify a house-yard by the presence of subsurface features, we needed a sample unit size big enough to reveal at least one feature if in fact we were in a house-yard. It would be virtually impossible to place a 4-x-4-m unit in the proposed southern T2 house-yard without hitting at least one subsurface feature. The same could not be said for smaller unit sizes (for example, 2-x-2-m tests). We therefore superimposed a 4-m grid across the preserved area of the site, yielding 670 grid units (Figure 2.5). For ease of excavation, we aligned the grid with the terraces. They thus ran at an angle of 51 degrees east of magnetic north across the site. We numbered them from t1 to t670, moving from top to bottom and left to right on the map. Because the terraces postdated the Formative, we excavated a simple random sample of these grid units without stratification by terrace. We identified three possible models of house-yard density at the site (light, moderate, and high packing) by experimenting with the positioning of 17-m-diameter circles on our map of the site (Figure 2.6). We then calculated the total percentage of site area that would be covered by house-yards in each model. Light packing would cover 13 percent, moderate packing 21 percent, and high packing 42 percent of the preserved site area. We randomly chose 15 of the 670 grid units for exca-

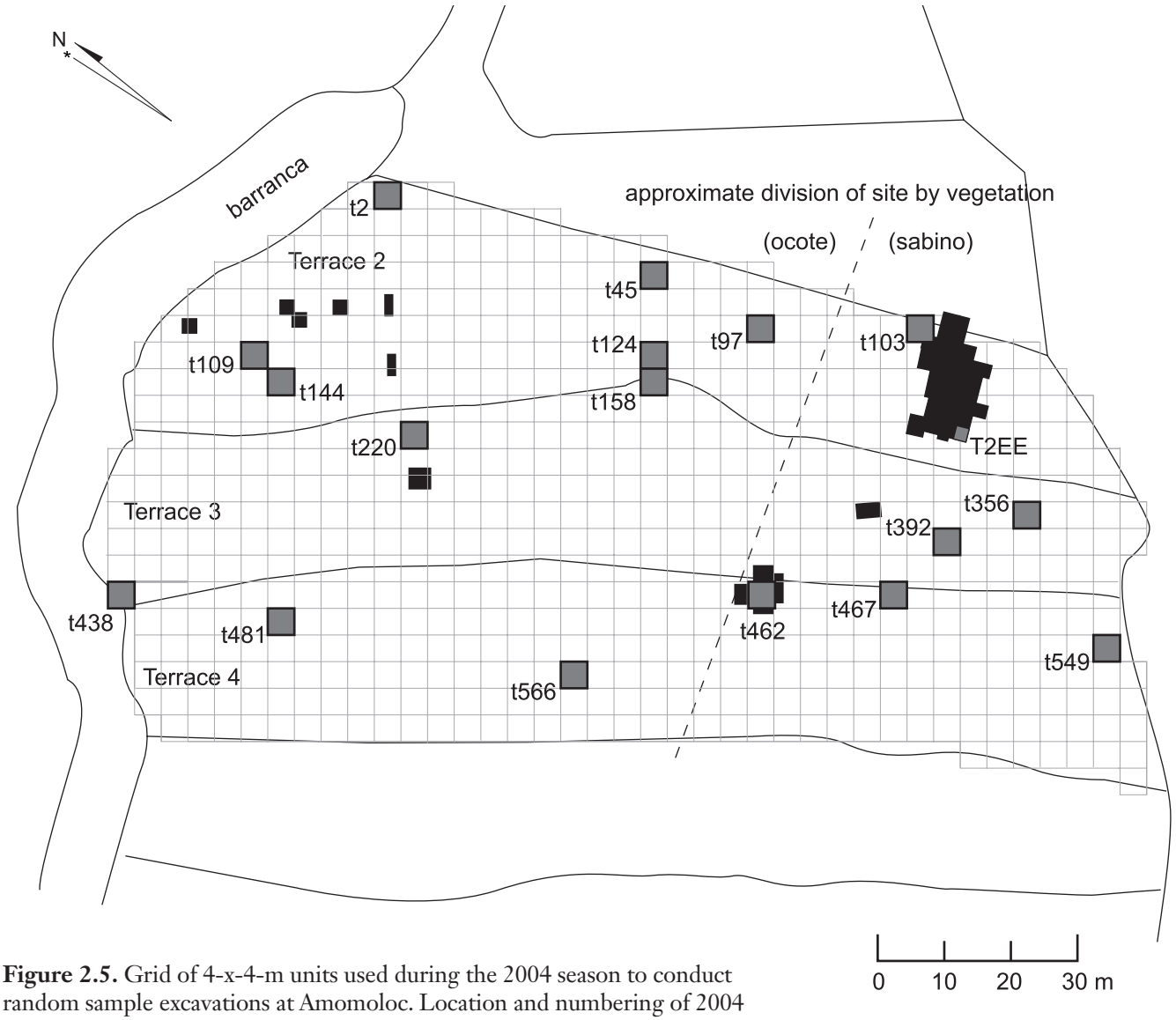

Figure 2.5. Grid of 4-x-4-m units used during the 2004 season to conduct random sample excavations at Amomoloc. Location and numbering of 2004 excavation units shown in gray; 2001 and 2003 units shown in black.

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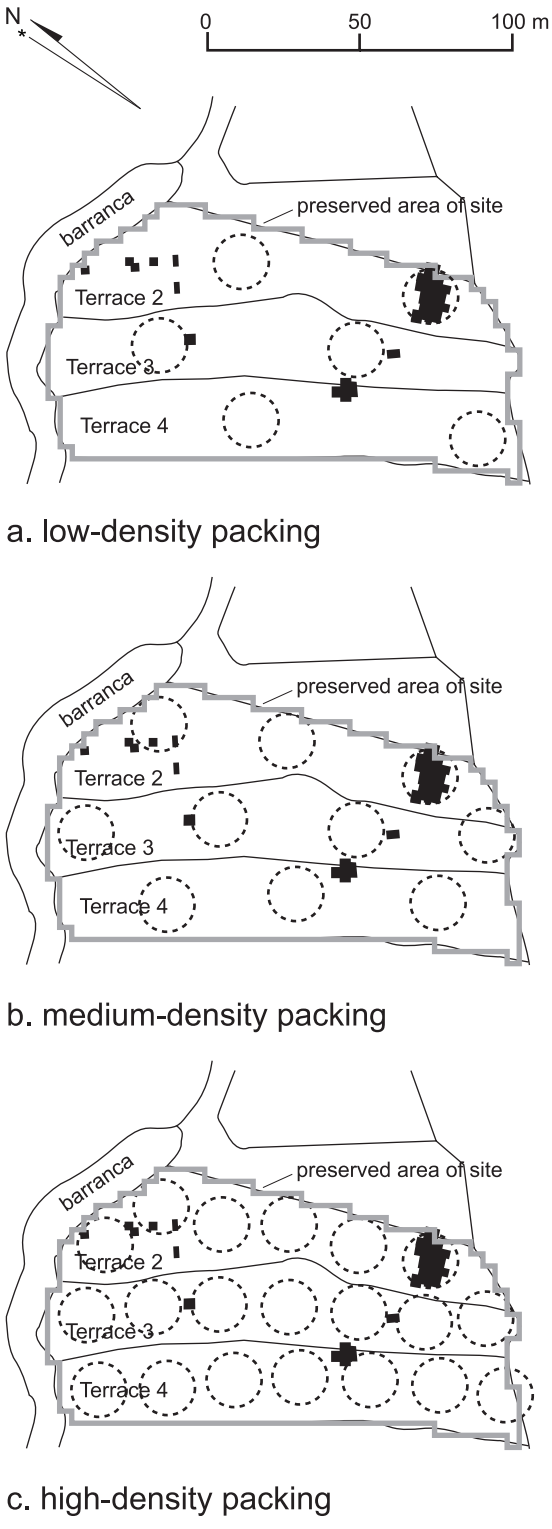

Figure 2.6. Idealized models of low-, medium-, and high-density packing of residential units at Amomoloc.

vation without replacement. (We chose that number to excavate because the expected number of hits for light packing rose above one and because we felt it was the maximum number of units we could possibly complete with the time and resources available.) If the packing of house-yards was light, we would expect 2.0 of the 15 units to yield subsurface Formative features. For moderate packing, the expected number of positives was 3.2, while for heavy packing we would expect 6.3.

We excavated the 15 squares during the summer of 2004. The randomly chosen sample (units t2, t45, t97, t103, t109, t124, t144, t356, t392, t438, t462, t467, t480, t511, and t604) was not distributed evenly across the site, with seven units on Terrace 2, three units on Terrace 3, and five units on Terrace 4, but did represent each terrace on both the northern and southern areas of the site (Figure 2.5). In three cases we had to shift the location of the unit that we excavated due to impeding vegetation. (Units t480, t511, and t604 were moved to units t481, t549, and t566, respectively.) One of the randomly chosen units (Unit t462) overlapped with excavations we conducted in this area in 2003 (units T4C through T4F), so we already had information on features in this unit. During the 2004 season, we also excavated an extension to one of our test pits to examine the terrace step just south of Unit t124 (Unit t158), an extension to follow two bell-shaped pits (Unit t431), and a small test pit on the northern end of Terrace 3 to recover an eroding feature (Unit t220). Figure 2.7 shows the full set of intact Formative features excavated from 2001 through 2004 in the southern portion of the site.

OVERVIEW OF RESULTS

The Age of the Terraces

Excavations in different areas of the site have informed our understanding of the terracing visible at the site today. In 2001 Borejsza excavated units T4A and T4B at an angle perpendicular to the juncture of terraces 3 and 4 to investigate their construction and approximate age. (The unit is shown with 2003 extensions in figures 2.1 and 2.4.) Terrace 3 slopes down to Terrace 4 at an angle of 35 degrees, and a shallow ditch about 1 m wide rests at this meeting point between the terraces (Figure 2.8). This ditch catches runoff sediment from Terrace 3 and appears to be the result of construction of the terrace, the source of dirt used to build up a makeshift retaining wall at the leading edge of Terrace 3.

In any terracing system, sediment accumulation occurs near the leading edges while sediment losses are registered at the backs of terraces, since sediment is washed down the incline due to erosion but is stopped by the built-up terrace wall. Terraces that fall out of use may cease to retain sediment, suffering erosion at leading terrace edges and eventually more widespread slope degradation. Zones 1 and 2 in Figure 2.8 fit expectations for deposits accumulated on existing terraces. As a unit, they are thicker at the leading edge of Terrace 3 than at the back or in the middle of Terrace 4 (Figure 2.8). If the profile had been the result of the erosion of Formative terraces, we would have expected

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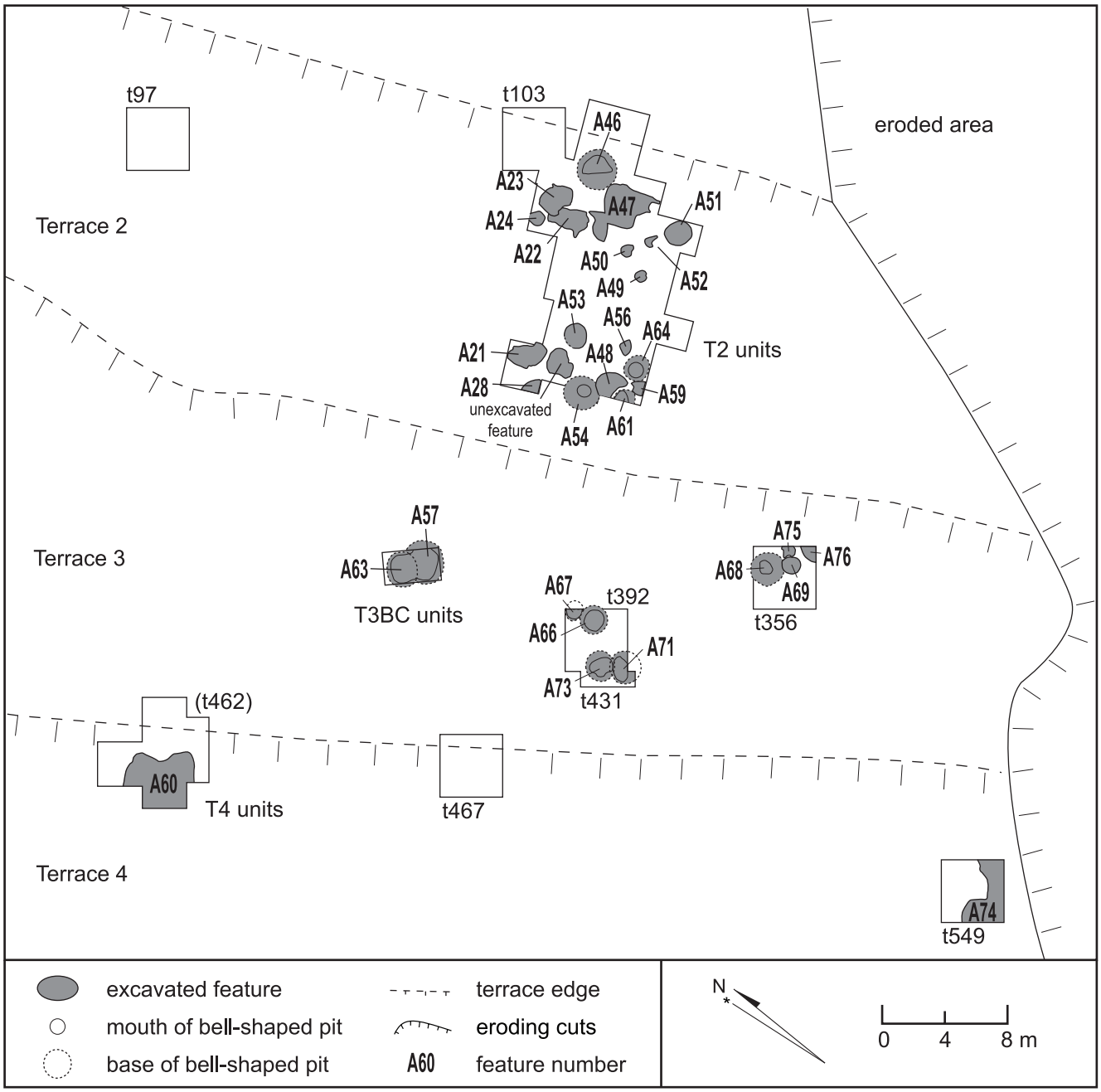

Figure 2.7. Distribution of features on the southern portions of terraces 2, 3, and 4, Amomoloc, after the 2004 season.

the opposite situation, with zones 1 and 2 forming a unit that became progressively thinner from the back part of the terrace toward the leading edge. These terraces must have been constructed *after* the deposition of zones 1 and 2 since we see this thickening toward the leading edge.

Borejsza (in Carballo et al. 2002:157–158) points out that zones 1 and 2 are themselves recognizable as exemplars of a sandy surface deposit widely encountered in Puebla-Tlaxcala and designated the Holocene layer (Aeppli and Schönhals 1975:8–73, 84–85; Werner 1988:85–88, 125–128, 157–171; see also Borejsza 2006, Borejsza et al. 2008). The Holocene layer appears to have accumulated during the last thousand years. If we are correct to identify zones 1 and 2 with this more widespread regional phenomenon, then deposition of this sandy layer at Amomoloc would have occurred *later* than the Formative occupation of the site. The terracing, which postdates deposition of the sandy layer, would also be post-Formative.

Excavations conducted in units t124 and t158 in 2004, revealing the profile of the Terrace 2 to Terrace 3 transition, support the observations made by Borejsza in 2001. In this area of the site, there is a similar thickening of the sandy layer covering tepetate near the slope of Terrace 2 (Figure 2.9). An interesting difference between the two

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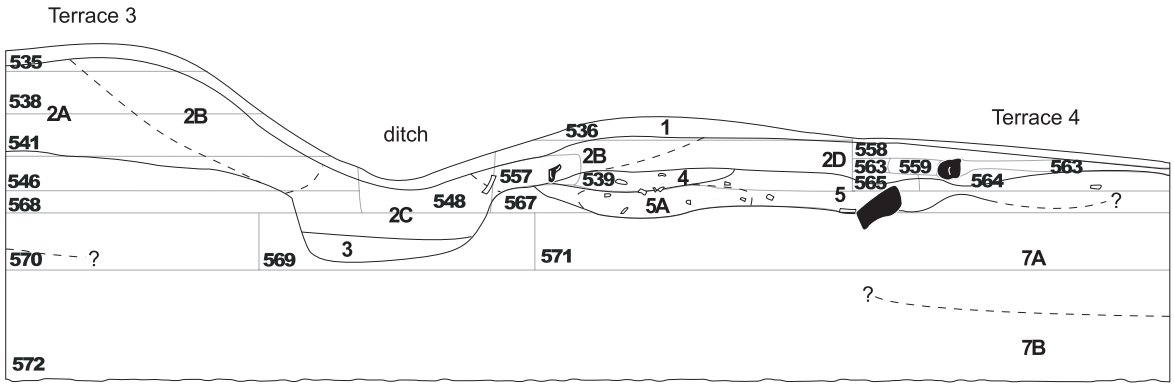

Zone 1	Soft to slightly hard light brownish gray loamy sand, held together by grass-root mat
Zone 2A	Very hard olive brown loamy sand, weakly developed coarse subangular blocky peds
Zone 2B	Hard olive brown loamy sand, moderately developed coarse subangular blocky peds
Zone 2C	Slightly hard grayish brown loamy sand, weakly developed coarse subangular blocky peds
Zone 2D	Slightly hard olive brown loamy sand
Zone 3	Very hard clay loam, moderately developed coarse to medium platy peds, light yellowish brown and very dark gray laminae
Zone 4	Slightly hard olive brown loamy sand with abundant artifacts
Zone 5	Very hard grayish brown sandy loam with artifacts and charcoal, weakly to moderately developed coarse subangular blocky peds
Zone 7A	Very hard pale yellow sandy loam, weakly developed coarse subangular blocky peds, brownish gray clay films
Zone 7B	Hard pale yellow sandy loam

0 50 cm

Figure 2.8. Profile of the Terrace 3–Terrace 4 transition at Amomoloc: southeastern wall of units T4A and T4B, showing the Holocene layer, zones 1 and 2.

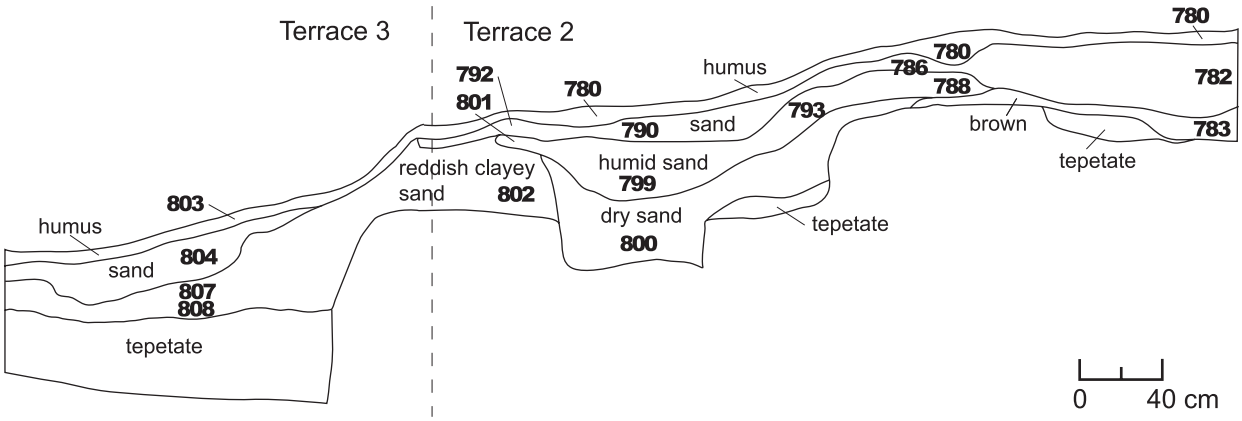

Figure 2.9. Western profile of the Terrace 2–Terrace 3 transition at Amomoloc, showing thickening of a sandy layer covering tepetate near the slope of Terrace 2.

excavations is that the tepetate here appears to have been cut twice. (There are two steps to this terrace transition rather than just one, which is what we saw in the T4A and T4B excavations.) Although the stratigraphy of this area is complicated by vegetation as well as modern human disturbances (we encountered a ditch dug to transport water by hose down to the house at the bottom of the hill), no archaeological materials were recovered in either of these two units, further supporting the idea that the terraces postdate the Formative occupation of the site.

We would expect occupation surfaces or features that existed prior to terracing to be buried at greater depth and to be better conserved near the leading edges of terraces, since this would tend to be a place of deposition rather than erosion. Two of the roasting pits discovered at the site fit this pattern: Feature A27, which is located in the middle of Terrace 3, was visible from the modern surface and was somewhat eroded, but Feature A21, located near

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Table 2.1. Results of the Random Sample Excavated at Amomoloc

	Tzompantepec	Early Tlatempa	Late Tlatempa
Squares with positive results	< 1	1-2	4
Proportion positives in preserved area	< .17	.17-.33	.67
Estimated original total squares	≤ 2	3-5	10
Closest model of packing	light	moderate	high +
Estimated population per hectare	20	30-50	100 +

the slope of Terrace 2, was completely buried. Similarly, there is some tendency for bell-shaped pits located closer to the slopes of terraces to be deeper and to have more of their mouths intact; compare Feature A64 to Feature A66, for example (see Figure 2.21 and locations in Figure 2.7). Terracing after the Formative would also explain the damage suffered by Formative cultural deposits, even in areas where the modern ground surface seems little affected by erosion. The Formative deposits were damaged prior to construction of the terraces.

Results of the Random Sample

Our attempt to estimate the density of packing of house-yards in the area of the site currently in trees and apparently preserved (especially when compared to the complete destruction evident in surrounding agricultural fields) revealed that a significantly smaller portion of the site remained intact than we had originally thought. The results nevertheless suggest a trajectory of increasing density of settlement over a total occupation span of 200 to 250 years.

We identified features in 4 of the 15 4-x-4-m sample units excavated on terraces 2, 3, and 4 (units t356, t392, t462, and t549). However, several lines of evidence suggest that 9 of our 15 units sampled an area of the site in which Formative features have been almost entirely destroyed by erosion, even in a part of the site under vegetation, with abundant surface sherds and seemingly intact. The area where our sample units hit features was along the southern margin of the site. Excavations in this area, which includes the southern part of Terrace 2 but which extends also to the southern parts of terraces 3 and 4, had a similar stratigraphy in which pit features appeared immediately below a 10-cm humic layer extending into a compact sterile substrate. To the north of this area, a very thin humic layer generally overlay sandy, uncompacted sediments, which in turn rested atop the compact substrate. Artifacts recovered in the northern area were eroded, suggesting exposure on the surface and/or movement from their original context.

This difference in areas corresponds to the difference in vegetation mentioned above, on either side of a division running approximately east–west across the southern part of the preserved area (see Figure 2.5; see also Figure 2.1). We now believe that most of the northern area was eroded down to below the level of Formative features and then covered with water-worked sands and silts. That interpretation is supported by two Formative features identified on Terrace 3 (not included in our random sample) that appear to be on remnant pedestals preserving fragments of the earlier ground surface.

It appears that the preserved portion of the site is considerably smaller than we had originally postulated. In the preserved area, the density of features is high, exceeding our model of high packing. However, we are also now able to divide the larger Tlatempa features into Early and Late subphases, each estimated at 75 years in length (see Chapter 11). When the distribution of features is divided by phase and subphase, the results of the random sample, modest as they are, yield a coherent story of increasing village population over the three periods, followed by abandonment.

The results of the random sample are summarized in Table 2.1. Four sample units had positive results in that we encountered Formative pit features. Of those, all four contained Late Tlatempa features, one (t392) contained an Early Tlatempa feature, and none of them contained Tzompantepec features. Unit t356, in addition to Late Tlatempa Feature A68, yielded three small Tlatempa-phase pit features whose contents were too meager to allow assignment to a subphase. Since one or more of those could be Early rather than Late, we register one to two positives for Early Tlatempa. Also, since we know from units not included in the random sample that there was a Tzompantepec occupation at the site, we register the number of positives for that phase as less than one rather than zero to facilitate the calculations in succeeding lines of the table.

We now realize that only 6 of our 15 units of the random sample were located in the intact area of the site. The second line of the table gives the corresponding proportion of positive results for a sample of six, and the line after that gives the estimated number of positives we would have found if the entire area in trees had been preserved. The results correspond to light packing of households in Tzompantepec, moderate packing in Early Tlatempa, and a density of house-yards greater than our model of high packing in the Late Tlatempa subphase.

The last line of the table provides an estimate of the number of people per hectare for each period, assuming that each house-yard contained a nuclear family residence with four inhabitants. It would be wonderful to be able to estimate the total number of inhabitants of the community for each period, but our experience in the excavations—in which despite a good surface scatter of sherds, a large portion of what we took to be intact site had been eroded down to tepetate and then covered over again with sedi-

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ment—leaves us hesitant to set much store by surface distributions of sherds. Still, the current surface scatter covers 6.75 ha and includes some area upslope from the intact area. If we say that the original site extended over somewhere between 2 and 7 ha, then the Tzompantepec-phase population would have been 20 to 70 people, the Early Tlatempa population 60 to 350 people, and the Late Tlatempa population 200 to 700.

Figures 2.10 and 2.11 show the full distribution of features split by phase or subphase. The dashed line again indicates the difference in vegetation, corresponding to the divide between intact and destroyed parts of the site. Units of the random sample in the intact area are indicated with heavy borders. Unshaded features are Tlatempa but are not assignable to subphase. For Early Tlatempa (Figure 2.10) and Late Tlatempa (Figure 2.11), circles representing hypothetical house-yards are superimposed at the proper density based on findings of the random sample, arranged to correspond to the full set of features actually recovered. The hypothetical house-yards with excavated refuse samples are labeled, and the features assigned to each are provided in Table 2.2. For an analysis of pottery split by house-yard, see Carballo (2011).

Table 2.2. Hypothetized Households at Amomoloc

Hypothetized household	Excavated features
Amom-TZ-1	A46
Amom-ET-1	A22, A23, A47, A49
Amom-ET-2	A57, A63, A71
Amom-LT-1	A48, A54, A61, A64
Amom-LT-2	A66, A67, A68, A73
Amom-LT-3	A60
Amom-LT-4	A74

TZOMPANTEPEC OCCUPATION

Feature A46

A large bell-shaped pit filled with domestic refuse. Dimensions: 65 cm deep, 2.54 m diameter at its base, 2.84 m^3 volume. The mouth of the pit is irregularly shaped and varies from 90 cm to 1.80 m in diameter. A small portion of the pit along its northern edge was not excavated fully because of tree roots.

Phase. Tzompantepec pit; filled in Tzompantepec. Two consistent radiocarbon dates place the contents of the pit between 900 and 800 B.C. (see Chapter 11).

Units. T2H, T2I, T2U, T2W.

Lots. Pit was sectioned for excavation, yielding four series of lots. Lots include 586, 588, 589, 592, 593, 596, 601, 605, 606, 612, 614, 615, 617, 620, 625, 627, 629, 630, 631, 633, 635, 636, 641, 642, 643, 644, 646, 648, 649, 650, 653, 657, and 658. Lots 581, 584, 618, and 623 were excavated while defining the mouth of the pit, and likely contain some contents of the pit, but are highly eroded and mixed with nonfeature artifacts. Lot 748 consists of several large basalt rocks found near the mouth of the feature but not directly associated with the fill of the pit.

Excavators. Julienne Bernard, Jennifer Carballo.

Contexts. A46-1P (the pit), A46-2S (contents of strata 46-1 through 46-3).

Illustrations. Figures 2.12 and 2.13.

Stratigraphy. The pit appears to have been filled rapidly, in three successive and highly similar depositional layers. The uppermost layer of pit fill (Stratum 46-1, lots 586, 589, 606, 612, 617, 625, 633, 641, and 642) is homogeneous dark brown sediment (7.5YR 3/2) about 20 cm thick, with a slightly higher concentration of carbon than other layers of the pit. Stratum 46-2 (lots 588, 592, 593, 596, 606, 612, 617, 627, 629, 635, 643, 644, 649, 653, and 657) is very dark grayish brown sediment (10YR 3/2) approximately 30 cm thick. The lowermost layer (Stratum 46-3, lots 601, 605, 614, 615, 620, 630, 631, 636, 646, 648, 650, and 658) is dark brown sediment (7.5YR 3/2) about 20 cm thick, resting upon the base of the pit.

Depositional History. The bell-shaped pit was dug into tepetate, perhaps to be used for food storage or to extract clay for making ceramics and figurines. A few medium-sized rocks were found near the base of the pit, but it is difficult to determine if the rocks relate to a primary context activity or were thrown in the pit as it was being filled. Once the pit was no longer amenable to storage, it became a trash pit. The pit appears to have been filled in rapidly, as the lowermost (Stratum 46-3) and the uppermost (Stratum 46-1) layers are very similar in color and texture. Further support of the claim that the strata were deposited quickly comes from ceramic analyses, as sherds excavated from strata 46-2 and 46-3 in several cases fit together.

TLATEMPA OCCUPATION

Feature A21

A circular roasting pit with a concave burned clay base that was filled with large basalt rocks (the majority of which are larger than 10 cm). Dimensions: 30 cm deep, 2.40 m in length (east–west), 1.40 m in width (north–south); the interior of the pit has an approximate volume of .74 m^3.

Phase. Tlatempa pit; filled during Tlatempa phase.

Unit: T2C.

Lots. 508, 509 (superimposed). Lot 508 included the scraping of the surface of Unit T2C around Feature A21, so it constitutes a mixed context.

Excavators. María Guadalupe Espinosa Rodríguez.

Contexts. A21-1P (the pit, with burned clay edges and

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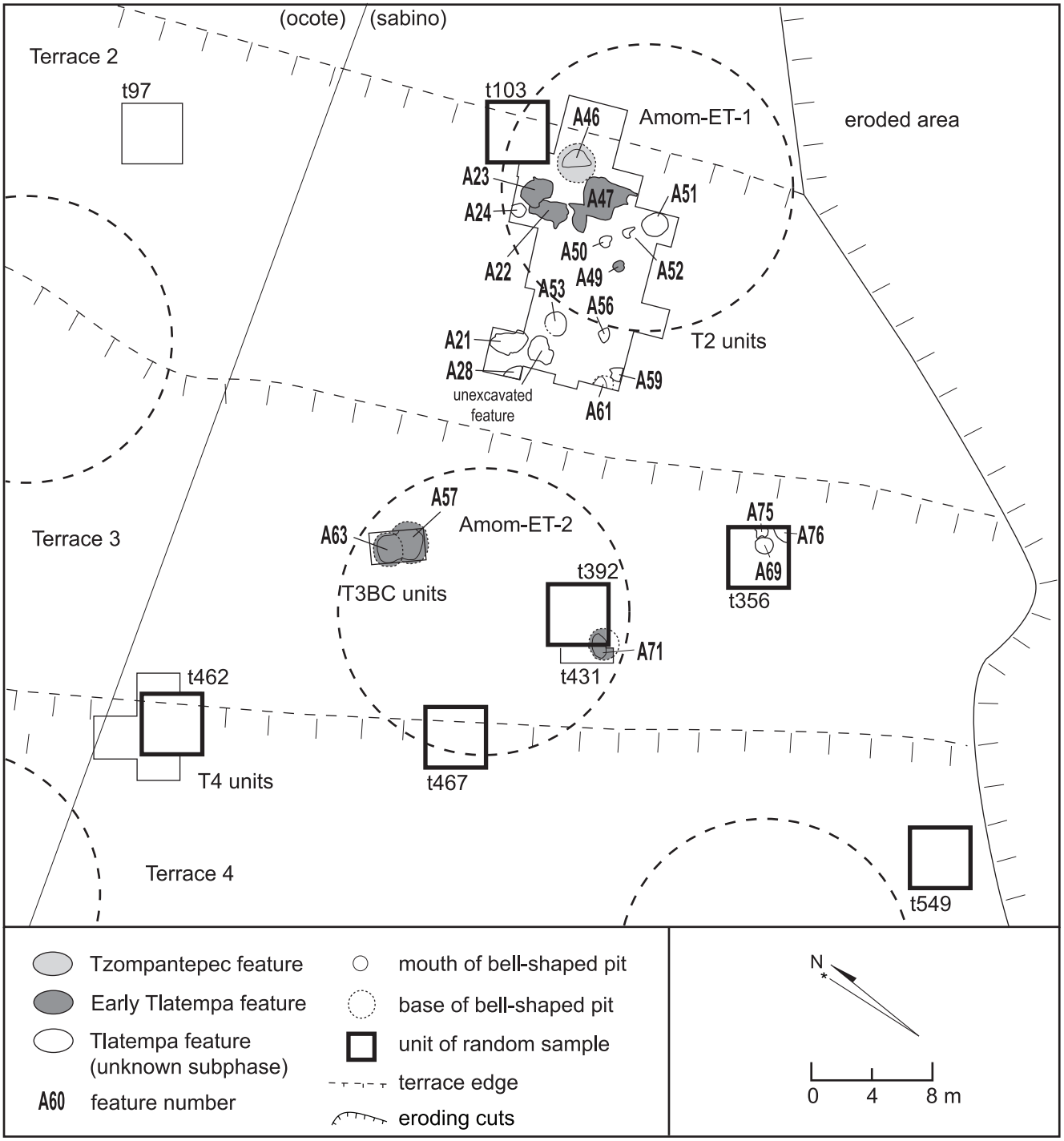

Figure 2.10. Tzompantepec (light gray) and Early Tlatempa (dark gray) features in the preserved area at Amomoloc. Features shown without shading yielded small Tlatempa features that cannot be assigned to subphases. Squares with heavy outlines are units of the random sample. Dashed circles are hypothetical Early Tlatempa house-yards, at the low end of the density range calculated based on the random sample, situated to include features of that subphase actually identified.

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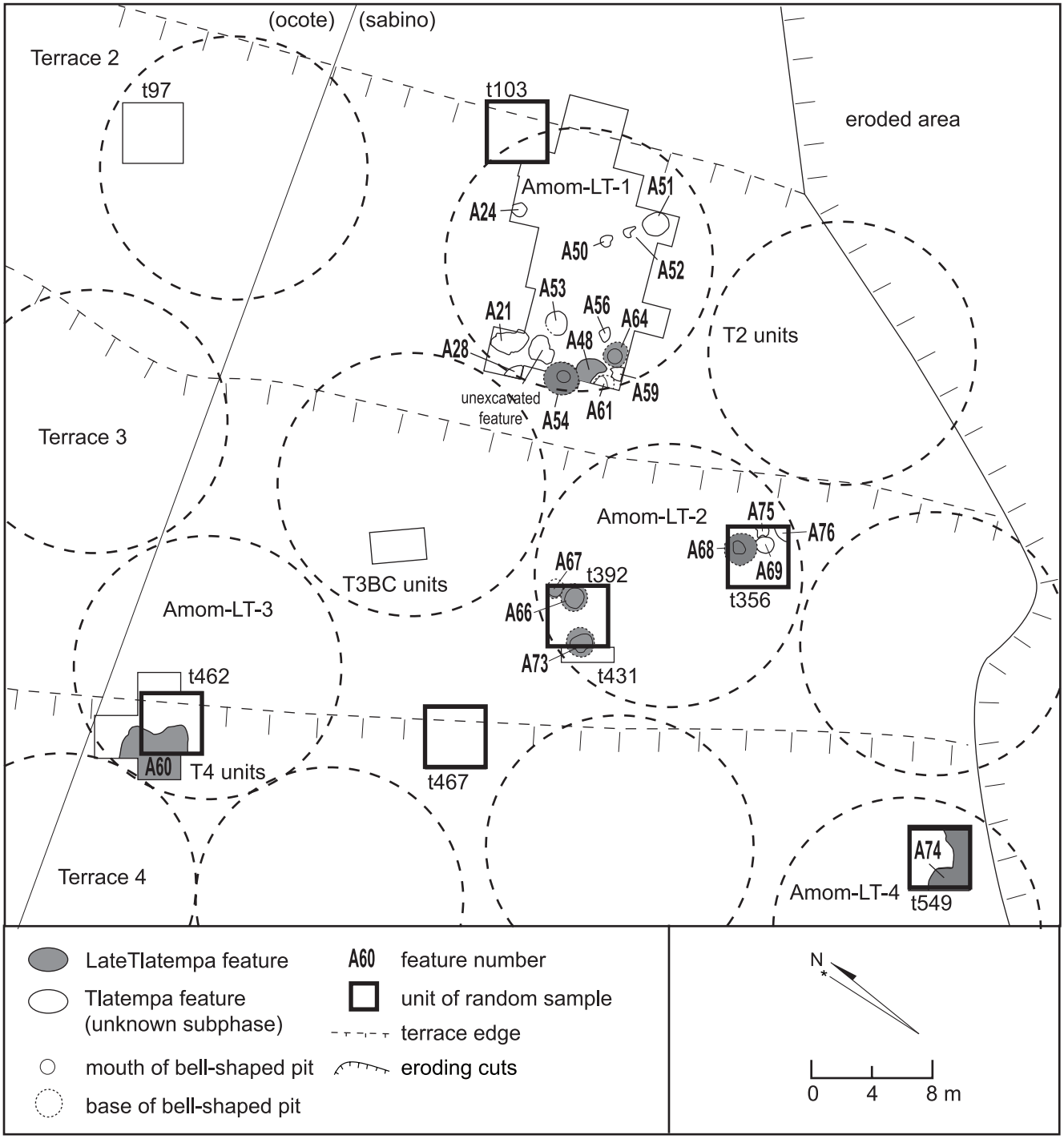

Figure 2.11. Late Tlatempa features in the preserved area at Amomoloc (shaded gray). Features shown without shading yielded small Tlatempa features that cannot be assigned to subphases. Squares with heavy outlines are units of the random sample. Dashed circles are hypothetical Late Tlatempa house-yards, at density calculated based on the random sample, situated to include features of that subphase actually identified.

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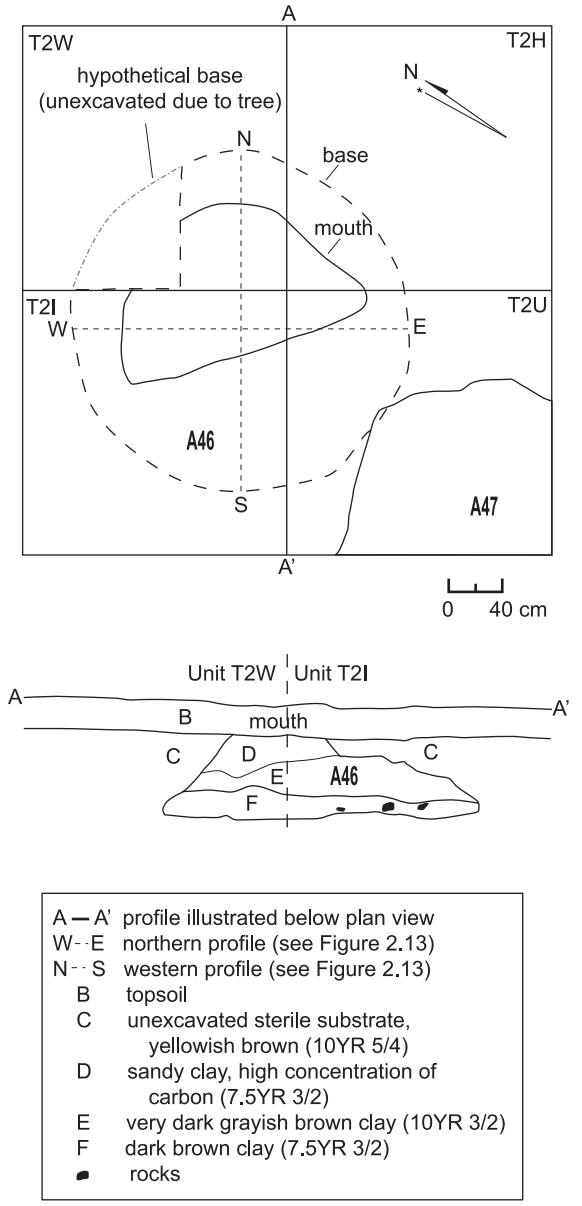

Figure 2.12. Feature A46, Amomoloc, plan and profile.

base, and rocks lining the pit), A21-2S (contents of Stratum 21-0).

Illustration. Figure 2.14.

Stratigraphy. The uppermost layer of the roasting pit (Stratum 21-0, lots 508, 509) is the matrix surrounding the rocks placed on the base of the pit. This is the only layer in which artifacts were found associated with the roasting pit. It is dark gray sandy clayey sediment (10YR 3/2) and varies from about 10 to 25 cm in thickness. More than 50 rocks were excavated from the pit; many of them rested directly on top of the base of the pit. Some were calcined (chalky white), and many others were burned or broken. The burned clay walls and base outlining the pit were 5 to 10 cm thick in most areas. The walls of the pit were highly fired and pink in color (2.5YR 5/6), while the interior base was burned completely black (7.5R 3/0).

Depositional History. A shallow circular pit, no deeper than 30 to 40 cm, was dug into tepetate, forming the base and walls of the pit. Then rocks were placed in the pit, perhaps held in place by the sediment associated with Stratum 21-0. Since many of the rocks and the interior clay base were burned black, it is apparent that the pit was used for some sort of cooking or roasting—hot enough to harden the base and walls of the pit. It is possible that some of the materials associated with Stratum 21-0 postdate the use of Feature A21 and may represent secondary trash.

Feature A22

An irregularly shaped pit, in the form of a boot rather than bell-shaped. Dimensions: 60 cm deep, 1.20 m diameter at mouth, 2.50 m maximum diameter at base, 1.44 m^3 in volume.

Phase. Early Tlatempa pit; filled in Early Tlatempa subphase.

Units. T2A, T2B, T2D.

Lots. Pit was sectioned, yielding three series of lots; lots 501, 504, 506, 511, 513, 514, 515, 543, 560.

Excavator. Jennifer Carballo.

Contexts. A22-1P (the pit), A22-2P (rocks on the base of the pit), A22-3S (contents of strata 22-1 and 22-2).

Illustration. Figure 2.15.

Stratigraphy. The uppermost layer of Feature A22 (Stratum 22-1, lots 501, 511, 513) is loose ashy sediment, gray in color. It is about 20 to 30 cm thick, horizontal in structure, and contained many artifacts, including ceramics, figurines, and a zoomorphic incense burner. Below Stratum 22-1, Stratum 22-2 (lots 504, 506, 514, 515, 543, and 560) is somewhat darker in color (dark gray), perhaps due to a higher concentration of carbon in the sediment. It is also deposited horizontally and is about 40 cm thick. This stratum contained a higher number of rocks and fewer artifacts than Stratum 22-1. It should be noted that sherds from strata 22-1 and 22-2 fit together (lots 501 and 514 in particular).

Depositional History. Feature A22 was dug into tepetate with a boot shape. It is possible that this pit is an unfinished bell-shaped pit—that the individual digging the pit began to carve out the bell shape of the pit to the northern and western sides of the mouth of the pit first, creating the boot shape, but then did not finish removing the tepetate on the other sides of the pit. Rocks were placed around the base of the pit, although their primary function is unclear. Little cultural material was recovered from the portion of the pit extending outward (lots 543 and 560), although there was a higher concentration of rocks found on the base of the pit in this area.

It is possible that the habitants of the site decided not to complete the excavation of the pit and quickly dumped trash into the central part of the pit to seal it rather than excavating a full bell-shaped pit here. Although strata 21-1

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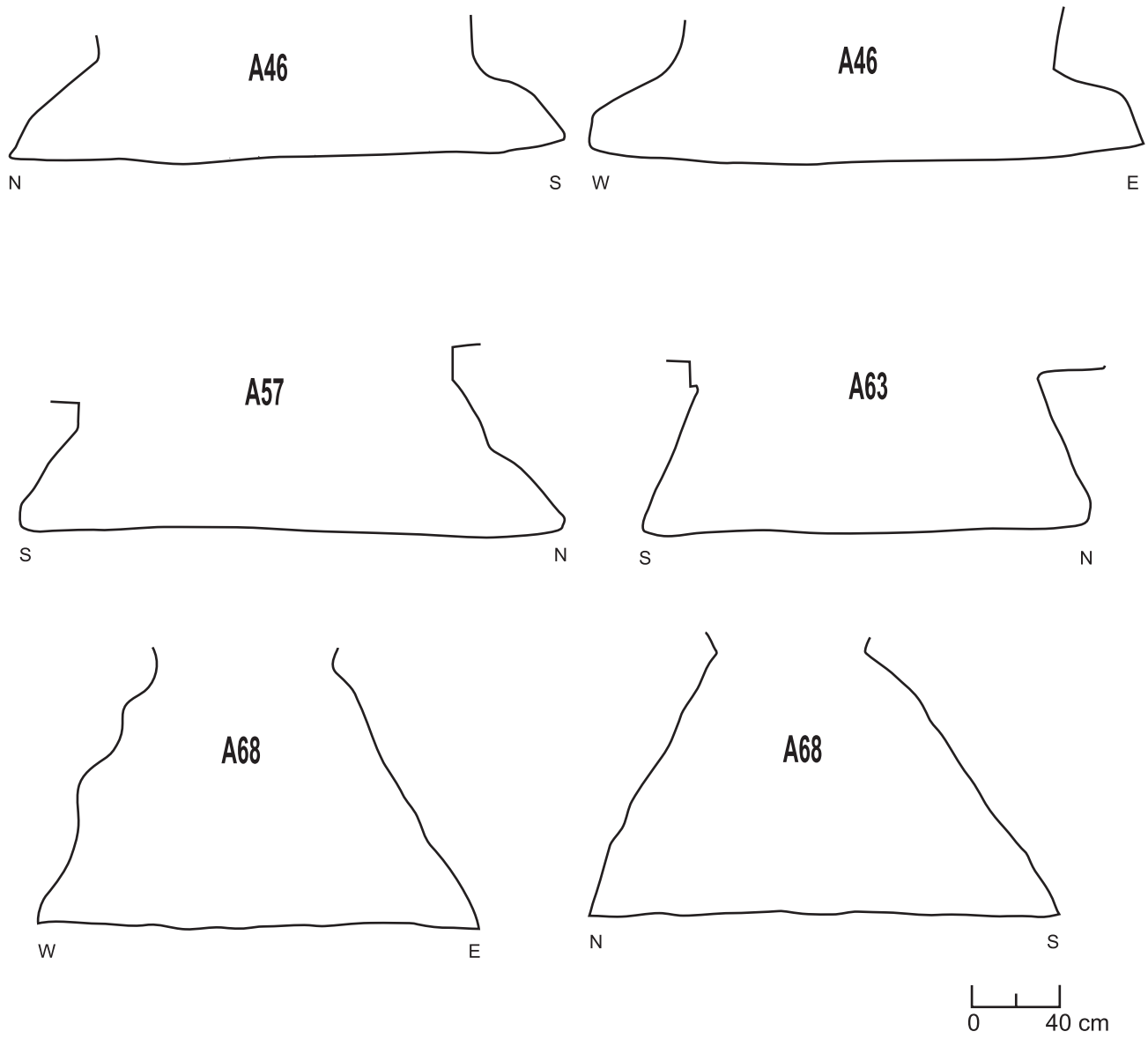

Figure 2.13. Profile outlines of bell-shaped pits at Amomoloc: features A46, A57, A63, and A68.

and 21-2 are slightly different in color and concentrations of cultural materials, the fact that broken sherds recovered from the distinct strata belong to the same ceramic vessels suggests that these two strata were deposited quickly and may represent a single depositional stage. Feature A22 extends underneath Feature A23 but does not cut into it, so the chronological relationship between the two features is unclear.

Feature A23

A shallow, oval-shaped pit containing a high concentration of sherds, carbon, and rocks, with strong evidence for burning on its base. Dimensions: depth varies from 25 to 40 cm, 2.25 m^2 in area, and approximately .65 m^3 in volume.

Phase. Early Tlatempa pit; filled in Early Tlatempa subphase.

Units. T2D, T2E, T2G, T2I, T2AA.

Lots. Pit was sectioned, yielding two series of lots for units T2D and T2E (2001 excavations) and side-by-side lots for units T2G, T2I, and T2AA (2003 excavations); lots 519, 522, 532, 534, 537, 580, 585, 667.

Excavators. Jennifer Carballo, Julienne Bernard.

Contexts. A23-1P (burning activity on base of pit, associated with rocks), A23-2S (contents of strata 23-1 and 23-2).

Illustration. Figure 2.15.

Stratigraphy. The uppermost layer is stratum 23-1 (lots 519, 522, 532, 537, 580, 585, 667). It is very rich in artifacts, about 20 cm thick, and contains a high concentration of sherds, figurines, rocks, and lithics. We noted that the

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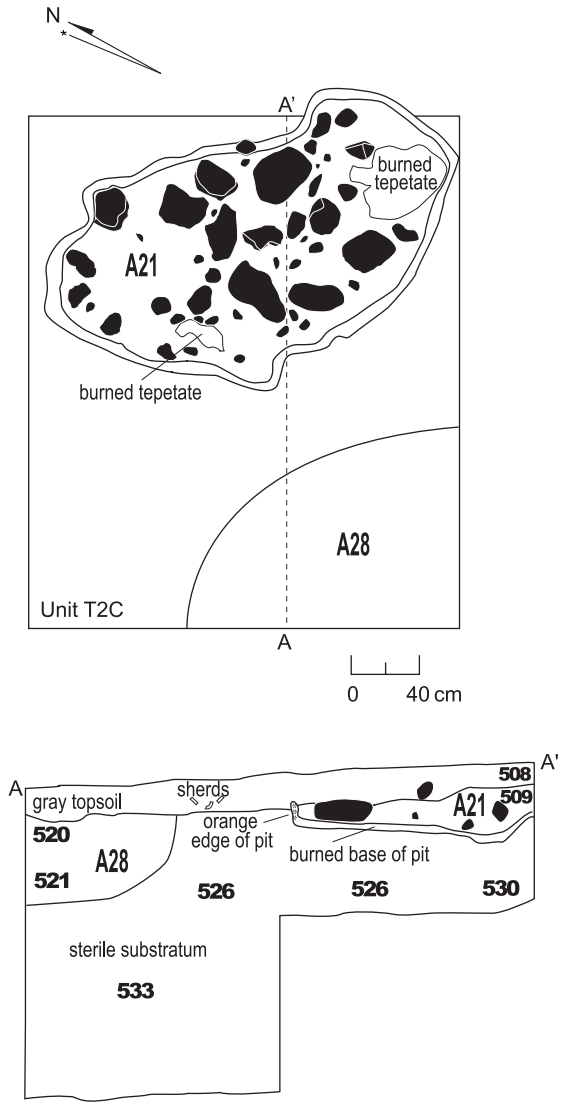

Figure 2.14. Features A21 and A28, Amomoloc, plan and profile.

number of rocks increased as we approached the base of the pit, and we counted more than 50 rocks associated with Stratum 23-1. The lengths of the rocks varied from 8 to 25 cm, although the average length was about 12 cm; they did not appear to be articulated but were scattered about the pit. Around the edges of the pit, Stratum 23-1 rests on the base of the pit. Below Stratum 23-1, in the center of the pit, there is a very dark, carbon-rich, and thin layer (Stratum 23-2, Lot 534), about 8 to 10 cm thick, resting on the base of the pit. Within Stratum 23-2 we found a carbonized maize cob as well as ceramics, lithics, daub, bone, and ground stone. At least 20 small rocks (average length 8 cm) were also found associated with this layer.

Depositional History. A shallow circular pit was first dug into tepetate, and then something was burned on its base in the center of the pit (Stratum 23-2). Stratum 23-2 was not found throughout the pit but was localized in this one part of the pit, suggesting that it was a single burning episode on the base of the pit. Additional domestic trash (Strata 23-1) was then filled in around and above this stratum. The homogeneity of Stratum 23-1 suggests that it was deposited quickly, although the amount of time elapsing between the deposition of strata 23-2 and 23-1 is unclear.

Feature A24

A shallow circular stain, about 90 cm in diameter and 30 cm deep, with a volume of .2 m^3. Although the ceramics associated with this feature are distinctly Tlatempa, a radiocarbon date from this feature provided a Classic-period date. It is possible that there was some Classic-period activity at Amomoloc, although it must have been light, since no other evidence found at the site suggests Classic-period occupation.

Phase. Tlatempa pit; filled in Tlatempa phase but possibly disturbed by Classic-period activity. Classic-period phasing indicated by one radiocarbon date.

Unit. T2D.

Lots. 518, 525 (superimposed).

Excavators. Richard Lesure, Jennifer Carballo.

Context. A24-1S (contents of Stratum 24-0).

Illustration. Figure 2.15.

Stratigraphy. The pit contained one stratum (Stratum 24-0, lots 518, 525), which was 30 cm thick, containing dark gray semicompact sediment with chunks of burned earth, charcoal, and ceramics.

Depositional History. Feature A24 appears to be a shallow trash pit that was filled by a single depositional episode, although the dating of that episode is complicated by the association of a Classic-period radiocarbon date with Tlatempa ceramics.

Feature A26

See Feature A47.

Feature A27

A roasting pit recognized on the surface due to a circular concentration of rocks outlining its border. Feature A27 is located on the western side of the site on an elevated rise in the middle of the terrace, where erosion is slightly less severe. Within the circle of rocks constituting the feature, a distinct circular area of burning (approximate diameter 55 cm) was detected in the center of the pit; we did not see this in other roasting pits at the site. Dimensions: 25 cm deep, 1.70 m in diameter, .66 m^3 in volume.

Phase. Probably Tlatempa (only eight rim sherds were recovered from the superficial layer excavated above the feature, Lot 545; all these sherds appear to belong to the Tlatempa complex, although they are highly eroded).

Unit. T3A.

Lots. 547 (interior of the roasting pit); 552 (the interior

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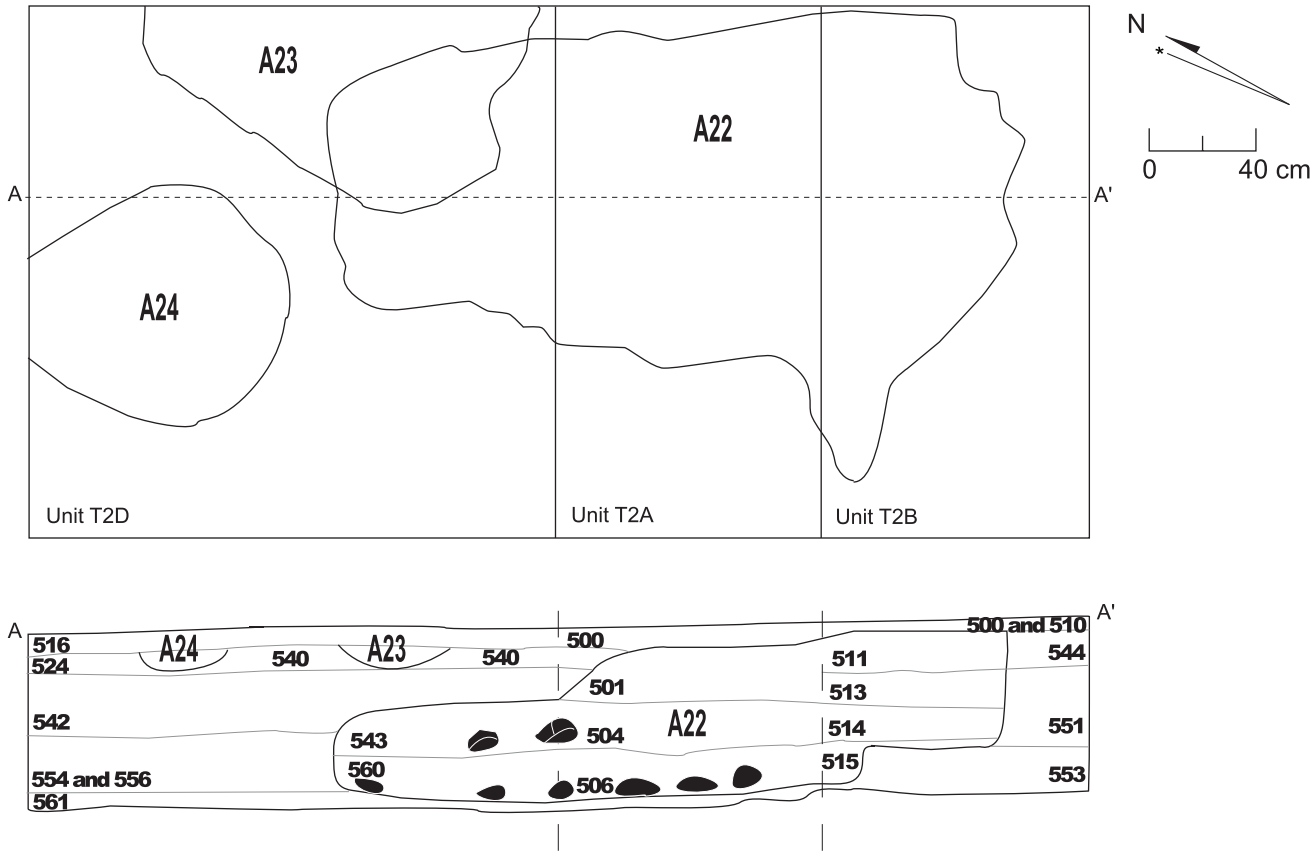

Figure 2.15. Feature A22, A23, and A24, Amomoloc, plan and profile.

of the smaller hearth within the pit); 552 is superimposed over portions of 547.

Excavator. María Guadalupe Espinosa Rodríguez.

Contexts. A27-1P (the pit), A27-2P (separate area of particularly intense burning at center of pit, Lot 552).

Illustration. Figure 2.16.

Stratigraphy. The uppermost layer (Stratum 27-1, lot 547) of the feature is the fill of the pit (about 25 cm thick, sandy brown sediment, 10YR 4/2), which was deposited on top of (and surrounding) a carbon-rich area located in the middle of the feature (Stratum 27-2, lot 552). Stratum 27-2 was about 7 cm thick and consisted of dark black loose sandy sediment (2.5YR 3/0) with pieces of carbon. Both of these strata rest within the burned clay walls and on top of the burned clay base of the pit, about 5 to 8 cm thick (Stratum 27-3, lot 547); the walls vary in color from gray to light red (10YR 6/1 to 2.5YR 6/8), while the base is burned black (2.5YR 3/0).

Depositional History. First a shallow concave pit was excavated into tepetate. The pit was lined with clay on its walls and base, and rocks were placed around its edges (Stratum 27-3). Some of these rocks (average length 15 to 25 cm) were crudely worked and placed so that the faced or worked sides were oriented toward the interior of the pit. The walls and base were heated so that the clay hardened. (When some of the rocks lining the pit were removed in excavation, impressions of the rocks were left in the burned clay.) At the center of the roasting pit was an area of intense burning, distinguished from the rest of the base as dark black sediment about 7 cm thick, covering an area of 50 cm x 62 cm (Stratum 27-2). This area of intense burning, and the rest of the pit, was filled in with sandy brown sediment (Stratum 27-1). None of the strata directly associated with Feature A27 contained ceramics, although the layer directly above it had 90 sherds.

Feature A28

A shallow circular pit located just southeast of Feature A21. We estimate that we excavated approximately 25 percent of the feature and that the feature would have continued to the south and east of Unit C. Excavated dimensions: approximately 50 cm deep, 1 x 1.5 m, and about .88 m^3 in volume.

Phase. Tlatempa pit; filled in Tlatempa phase.

Unit. T2C.

Lots. 520, 521 (superimposed).

Excavator. María Guadalupe Espinosa Rodríguez.

Context. A28-1S (contents of Stratum 28-0).

Illustrations. Figures 2.3 and 2.14

Stratigraphy. The pit contained one stratum (Stratum 28-0, lots 520, 521), about 50 cm thick, consisting of loose dark brown sediment (varying from grayish brown to

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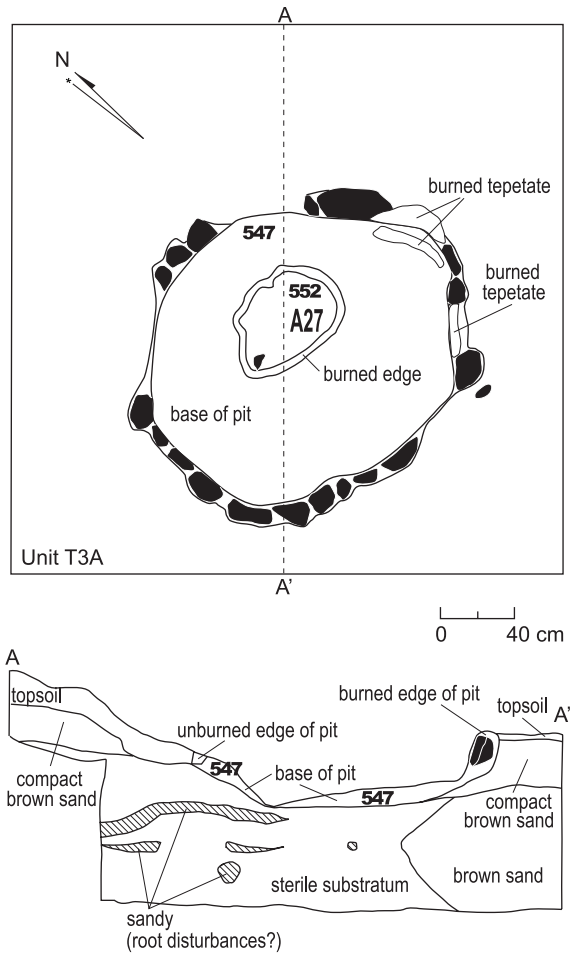

Figure 2.16. Feature A27, Amomoloc, plan and profile. See Figure 2.1 for location of Unit T3A.

light yellowish brown, 2.5Y 6/4 to 2.5Y 5/2) with ceramics, burned clay or tepetate, chipped stone, bone fragments, and ground stone. Lot 521 had an almost complete Tlatempa Red-on-White bowl.

Depositional History. A shallow pit was dug into tepetate and then filled with trash in a single depositional episode, just southeast of a roasting pit (Feature A21).

Feature A47

A shallow but extensive refuse pit consisting of concentrations of burned ceramics and carbon. It may be a trash pit that was located just outside a house, where occupants would dump trash and burn it periodically, just as modern residents in the area do today. Dimensions: depth varies from 20 to 30 cm, 4 m diameter (east–west), 2.6 m diameter (north–south), 3.82 m^3 in volume.

The majority of Feature A47 was excavated during the 2003 season. The extreme southwestern corner of what we believe to be the same feature (dimensions: 30 cm deep, 90 cm diameter [east–west], 1.60 m diameter [north–south]) was excavated in 2001 as Feature A26. For the purposes of analyses, Feature A26 has been changed to Feature A47.

Phase. Early Tlatempa pit; filled in Early Tlatempa subphase.

Units. T2B, T2N, T2T, T2U, T2V.

Lots. 549, 602, 609, 613, 619, 621, 622, 626, 632, 637, 638, 640, 647, 654, 655, 656. Lot 597 was associated with this feature but was not screened.

Excavators. David Carballo, Jennifer Carballo.

Context. A47-1S (contents of strata 47-1 through 47-4).

Illustration. Figure 2.17.

Stratigraphy. Stratum 47-1 (lots 597, 609, 619, 622) is the uppermost stratum of the feature, consisting of the mixture of the modern surface with the uppermost portion of the pit (about 8 cm thick). Below this stratum, Stratum 47-2 (lots 549, 602, 613, 621, and 626) consists of burned sherds and carbon, which covered the entire area of the pit, and varies from about 10 to 20 cm deep. Below this stratum, Stratum 47-3 (lots 549, 632, 637, 638, and 640) consisted of discrete concentrations of burned sherds and carbon within a contiguous matrix that was looser in texture than the surrounding tepetate that the pit was dug into (5 to 10 cm thick). The lowest stratum (Stratum 47-4, lots 549, 647, 654, 655, and 656) consisted of olive brown stains mixed with yellowish sediment found beneath the concentrations of Stratum 47-3 (approximately 5 cm thick).

Depositional History. A shallow irregularly shaped pit was dug into tepetate near a household structure so that the occupants of that house could conveniently dump their daily/weekly trash. First, discrete concentrations of broken ceramics and other trash were thrown here and burned (strata 47-3 and 47-4), representing individual depositional and burning episodes by residents of the household. It seems likely that these concentrations of garbage were left out in the open (that is, not covered by Stratum 47-2) long enough for the sherds to be moved around and trampled on, resulting in the generally smaller size of the sherds found in these strata. At a later time, residents deposited a much larger amount of trash at once, covering the earlier discrete concentrations with a contiguous layer of larger sherds, within which we also see evidence of burning (Stratum 47-2). Stratum 47-1 is the uppermost layer of this final deposition of trash, which is in contact with the modern surface.

Feature A48

A shallow oval-shaped pit with straight walls that cut into Feature A54 and thus was used after Feature A54. Dimensions: 25 to 30 cm deep, approximately 2.0 x1.5 m in area, and .75 m^3 in volume.

Phase. Late Tlatempa pit; filled in Late Tlatempa subphase.

Units. T2P, T2EE.

Lots. 610, 611, 639, 661, 718, 750. Lot 750 is the scraping of the feature wall alongside lots 611, 639, and 661. It is likely that lots 639, 661, 679, and 750 contain a mixture

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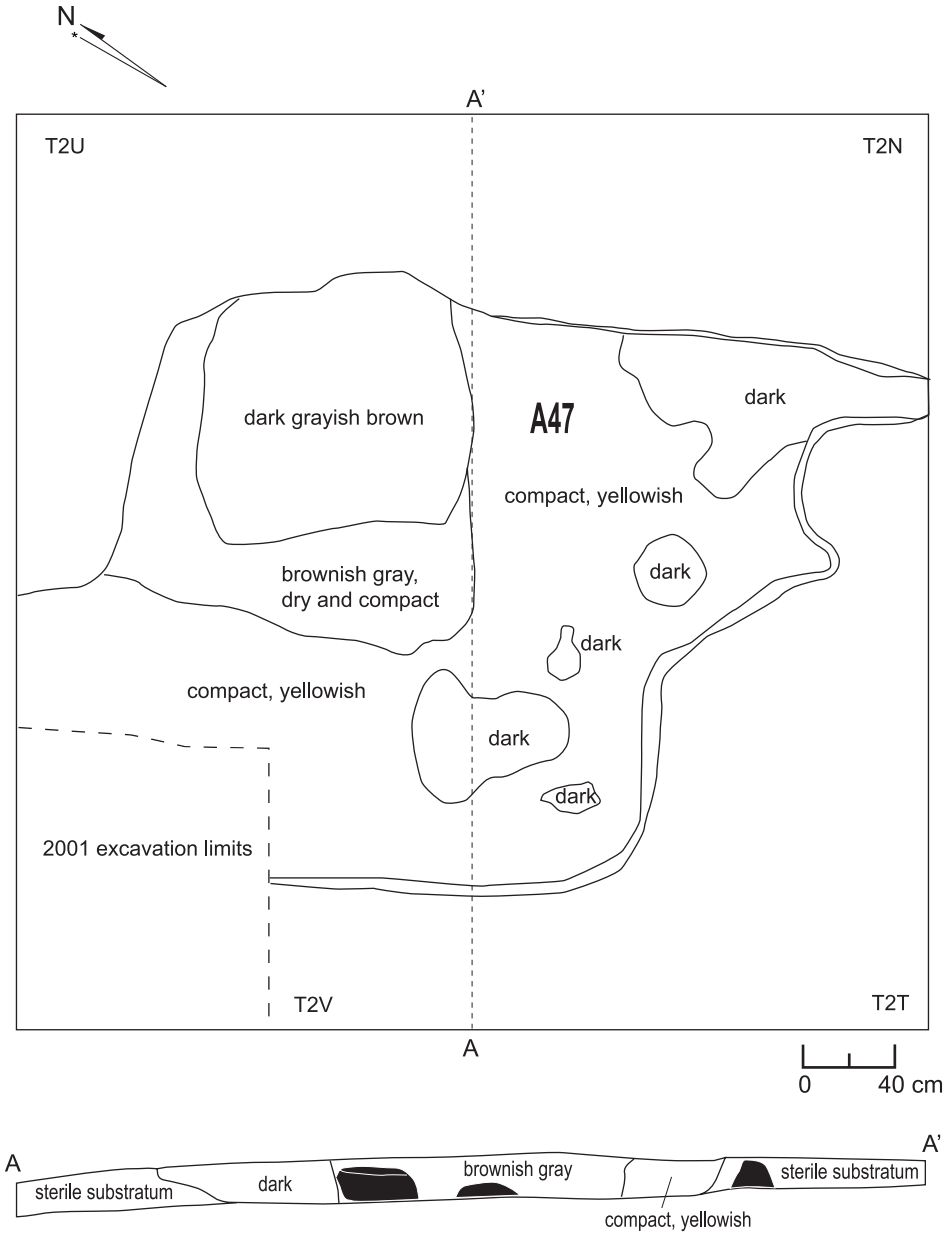

Figure 2.17. Feature A47, Amomoloc, plan and profile.

of material from features A48 and A54; we believe lots 639, 661, and 750 are more associated with A48, while lot 679 is more securely associated with A54.

Excavators. Paola Dematte, David Carballo, Rodrigo Vilanova.

Context. A48-1S (contents of Stratum 48-0).

Illustrations. Figure 2.7; see also figures 2.20 and 2.24, below.

Stratigraphy. There was a slight difference in soil color between the eastern and western portions of the pit, with the eastern side being slightly darker. It is possible that the western portion of the pit represented a contact zone with Feature A54. Despite this slight difference in color, the sediment in general was fairly uniform, dark olive brown in color with flecks of carbon, and semicompact in texture. Therefore, it is considered to be part of one stratum (Stratum 48-0, lots 610, 611, 639, 661, 718, 750), 25 to 30 cm thick.

Depositional History. This shallow pit was dug into tepetate and filled with domestic refuse, including zoomorphic vessel fragments, rocks, large sherds, carbon, and some human bone fragments (probably removed from their original burial context and redeposited here), in a single episode (Stratum 48-0).

Feature A49

An irregularly shaped, shallow pit. The walls of the pit have some evidence of burning, suggesting that the pit was used at some point to burn or cook something, although the few

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broken ceramics deposited within the pit are not burned. Dimensions: 10 cm deep, 1.20 x 1 m, and .08 m^3 in volume.

Phase. Early Tlatempa pit; filled in Early Tlatempa subphase.

Units. T2L, T2O, T2R, T2S.

Lot. 594.

Excavator. Rodrigo Vilanova.

Context. A49-1S (contents of Stratum 49-0).

Illustration. Figure 2.7.

Stratigraphy. Stratum 49-0 (lot 594) consisted of a layer of loose dark gray sediment mixed with particles of carbon, clay, burned earth, and archaeological materials (about 8 to 10 cm thick).

Depositional History. This is likely a pit dug for the single, one-time disposal of trash. The pit was not dug in a particularly regular way; its walls are irregular and the base has an uneven slope.

Feature A50

A small, almost circular pit with a burned base, which was filled with sherds. Dimensions: 10 cm deep, 80 x 90 cm, and .07 m^3 in volume.

Phase. Tlatempa pit; filled in Tlatempa phase.

Unit. T2R.

Lot. 624.

Excavator. Rodrigo Vilanova.

Context. A50-1S (contents of Stratum 50-0).

Illustration. Figure 2.7.

Stratigraphy. Stratum 50-0 (Lot 624) consisted of clayey sediment mixed with particles of ash, burned earth, carbon, and archaeological materials (about 10 cm thick).

Depositional History. Like Feature A49, this pit was probably dug for the single, one-time disposal of trash. Although the form of the pit is slightly more circular than Feature A49, its base is irregular and sloping.

Feature A51

A circular roasting pit with a burned clay base and walls and containing large basalt rocks. Dimensions: 20 cm deep, 1.50 m in diameter, and .35 m^3 in volume.

Phase. Tlatempa pit.

Units. T2X, T2Z.

Lots. 652, 660, 670 (superimposed).

Excavator. Rodrigo Vilanova.

Contexts. A51-1P (roasting pit and large rocks lining the base of the pit), A51-2S (contents of strata 51-1 through 51-3.)

Illustrations. Figures 2.18 and 2.19.

Stratigraphy. The uppermost layer of the pit (Stratum 51-1, Lot 652) consists of the fill of the roasting pit resting on top of the large rocks. It is gray clayey sediment about 10 cm thick, mixed with ash, carbon, sherds, and smaller rocks. Below this stratum, Stratum 51-2 (Lot 660) consists of the large rocks placed on the base of the pit and the matrix surrounding them (about 10 cm thick), which included some sherds and lithics. Below Stratum 51-2, Stratum 51-3 (Lot 670) is the burned clay base of the pit (about 2 to 3 cm thick).

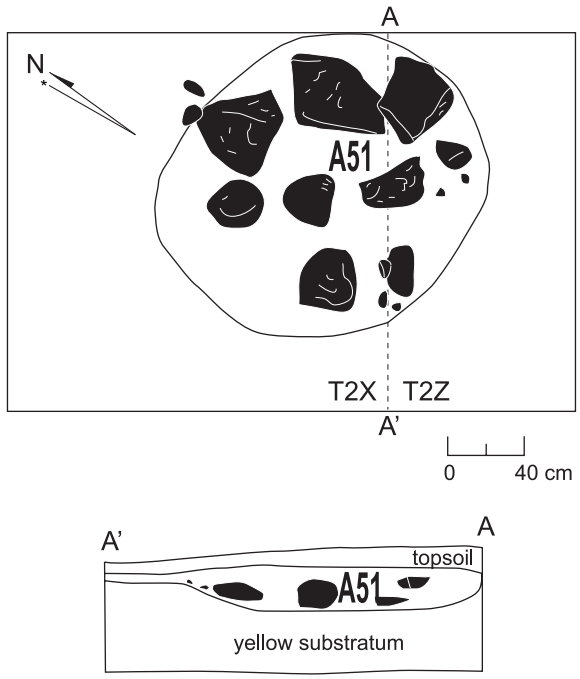

Figure 2.18. Feature A51, Amomoloc, plan and profile.

Depositional History. As with the other roasting pits found at the site, it seems likely that the makers of this pit first dug a circular hole in the ground, perhaps lining the pit with clay before burning it to form a hardened clay base and walls (Stratum 51-3). Then large rocks were placed along the bottom of this pit (Stratum 51-2); these may have functioned to retain heat for roasting activities. Perhaps to hold the rocks in place, smaller rocks, dirt, and broken sherds were filled in around the rocks in this stratum. Once the pit was no longer being used (or perhaps as a result of its use), various materials accumulated on top of the rocks, within the walls of the pit, eventually covering the rocks (Stratum 51-1).

Feature A52

A small, irregularly shaped pit with a slightly burned base and filled with 61 sherds. Dimensions: 15 cm deep, 50 x 30 cm, and .02 m^3 in volume.

Phase. Tlatempa pit; filled in Tlatempa phase.

Units. T2X, T2T.

Lot: 645.

Excavator. Rodrigo Vilanova.

Context. A52-1S (contents of Stratum 52-0).

Illustration. Figure 2.7.

Stratigraphy. Stratum 52-0 (Lot 645; 15 cm thick) is

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Figure 2.19. Feature A51, Amomoloc, under excavation.

the pit fill, consisting of clayey sediment, very dark grayish brown in color, with particles of burned earth and ash.

Depositional History. Like features A49 and A50, Feature A52 appears to have been a single-use trash pit, which residents dug quickly in tepetate to dispose of some refuse. Then they burned it.

Feature A53

A shallow circular pit. A small tree was located in the southern portion of the feature, so we excavated only .23 m^3 of the entire feature. The pit contained large sherds, particularly large olla sherds, as well as an almost complete Tlatempa white bowl. Dimensions: 20 cm deep, 1.50 m diameter, .28 m^3 in total volume.

Phase. Tlatempa pit; filled in Tlatempa phase.

Unit. T2Y.

Lots. 663, 668 (superimposed).

Excavator. Jennifer Carballo.

Context. A53-1S (contents of Stratum 53-0).

Illustration. Figure 2.7.

Stratigraphy. Stratum 53-0 (lots 663and 668) was a layer of semicompact, very dark gray-brown sediment (2.5Y 3/1) filled with large sherds and flecks of carbon, about 20 cm thick.

Depositional History. Similar to features A49, A50, and A52, Feature A53 appears to be a single-deposition trash pit, although somewhat more regular in its circular shape and without traces of burning on the base of the pit.

Feature A54

A large bell-shaped pit, cut into by Feature A48. Dimensions: 70 cm deep, 60 to 100 cm diameter at mouth, 2.26 m diameter at base, 1.75 m^3 in volume.

Phase. Probably Late Tlatempa pit; filled in Late Tlatempa subphase (dates to the transition between the Early and Late Tlatempa subphases).

Units. T2P, T2PX.

Lots. Pit was sectioned for excavation, yielding four series of Lots. 639, 661, 665, 666, 679, 681, 685, 686, 693, 694, 696, 697, 702, 703, and 749. Lots 639, 661, and 679

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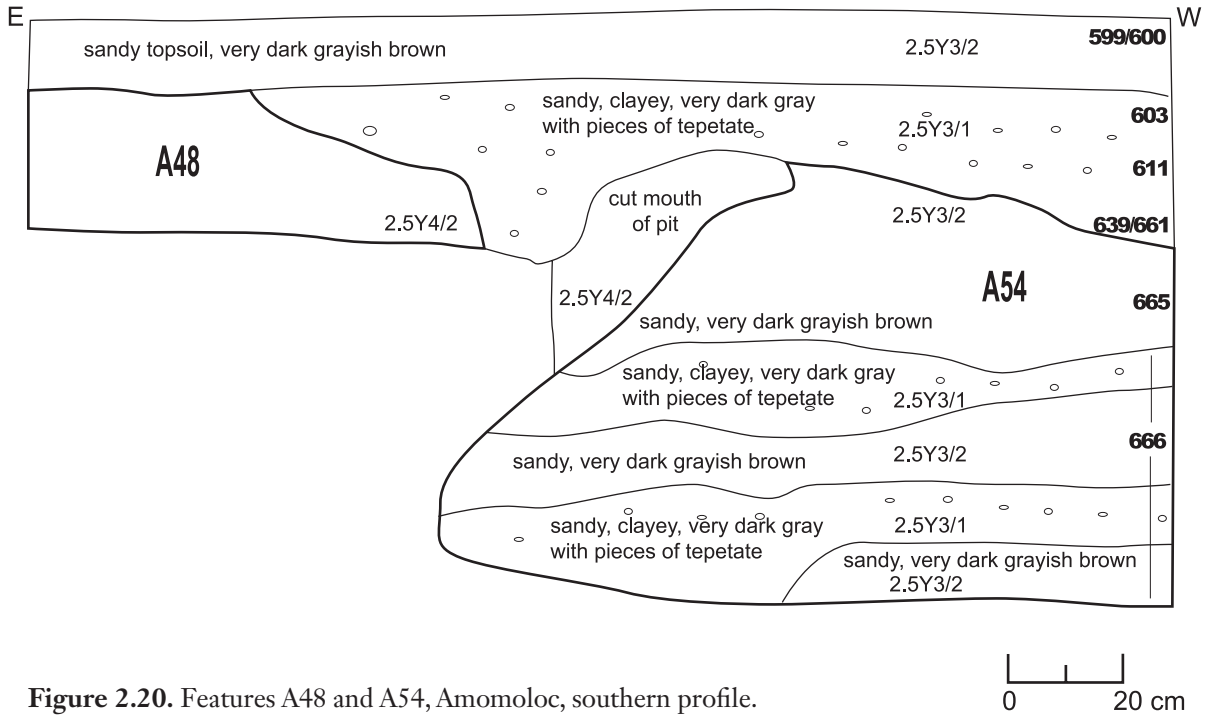

Figure 2.20. Features A48 and A54, Amomoloc, southern profile.

include mixing with Feature A48; we believe lots 639 and 661 are more associated with A48 and that Lot 679 is more associated with A54. Lot 749 was a cleaning of the walls of the feature and is a mix of strata.

Excavator. David Carballo.

Contexts. A54-1P (the pit), A54-2S (contents of strata 54-1 through 54-6)

Illustrations. Figures 2.20 and 2.21.

Stratigraphy. The uppermost layer of the bell-shaped pit was difficult to identify and excavate due to the intrusion of Feature A48. Stratum 54-1 (lots 639, 661, and 679; approximately 20 cm thick) represents mixing between the two features; it is most likely that lots 639 and 661 pertain to Feature A48 and that Lot 679 pertains to Feature A54. Below this mixed layer, the first layer definitely attributable to the bell-shaped pit is Stratum 54-2 (lots 665, 681, 696, and 702; approximately 30 cm thick), which was a layer of very dark grayish brown sandy sediment (2.5Y 3/2). Below Stratum 54-2, Stratum 54-3 (lots 666, 685, 696, and 702; approximately 15 cm thick) is very dark gray clayey/sandy sediment with pieces of tepetate (2.5Y 3/1). Below Stratum 54-3, Stratum 54-4 (lots 666, 686, 696, and 702; approximately 10 to 15 cm thick) is the same type of sediment as Stratum 54-2: very dark grayish brown sandy sediment (2.5Y 3/2). Below Stratum 54-4, Stratum 54-5 (lots 666, 693, 697, and 703; approximately 10 to 15 cm thick) is the same type of sediment as Stratum 54-3: very dark gray clayey/sandy sediment with pieces of tepetate (2.5Y 3/1). The lowest layer in the bell-shaped pit is Stratum 54-6 (lots 666, 694, 697, and 703; approximately 10 cm thick), which again is the very dark grayish brown sandy sediment (2.5Y 3/2) we saw in strata 54-2 and 54-4. It was very difficult to excavate the contents of the pit according to these natural strata, as they were hard to identify except in profile. Therefore, some excavation lots include one or more natural strata, as noted above.

Depositional History. Feature A54 appears to have been filled rapidly, in one depositional episode, like Feature A46. There are only two types of sediment in the pit; they were deposited alternately. The alternating layers were deposited horizontally and are of almost even thickness as opposed to being deposited diagonally or in thin layers, which we find more commonly at Tetel and interpret as the pit having been open longer and filled in more gradually. We believe Feature A54 was filled in rapidly using a large pile of each type of dirt alternately (type 1: very dark grayish brown sandy sediment [2.5Y 3/2]; type 2: very dark gray clayey/sandy sediment with pieces of tepetate [2.5Y 3/1]). The fitting of several sherds from different strata further supports the idea that this pit was filled in quickly with secondary refuse.

A few small chalky rocks (no larger than 26 cm on a side) that were yellowish gray or light gray in color were found in Feature A54.They were rather deteriorated, and it is difficult to determine their function, but perhaps they were used for decoration (on pottery and figurines, or as "body paint") or construction (to draw lines or to map out where to dig pits or place postholes, although this seems less likely).

Feature A56

A small, almost circular pit. Dimensions: 10 cm deep, 90 x 70 cm, and .05 m^3 in volume.

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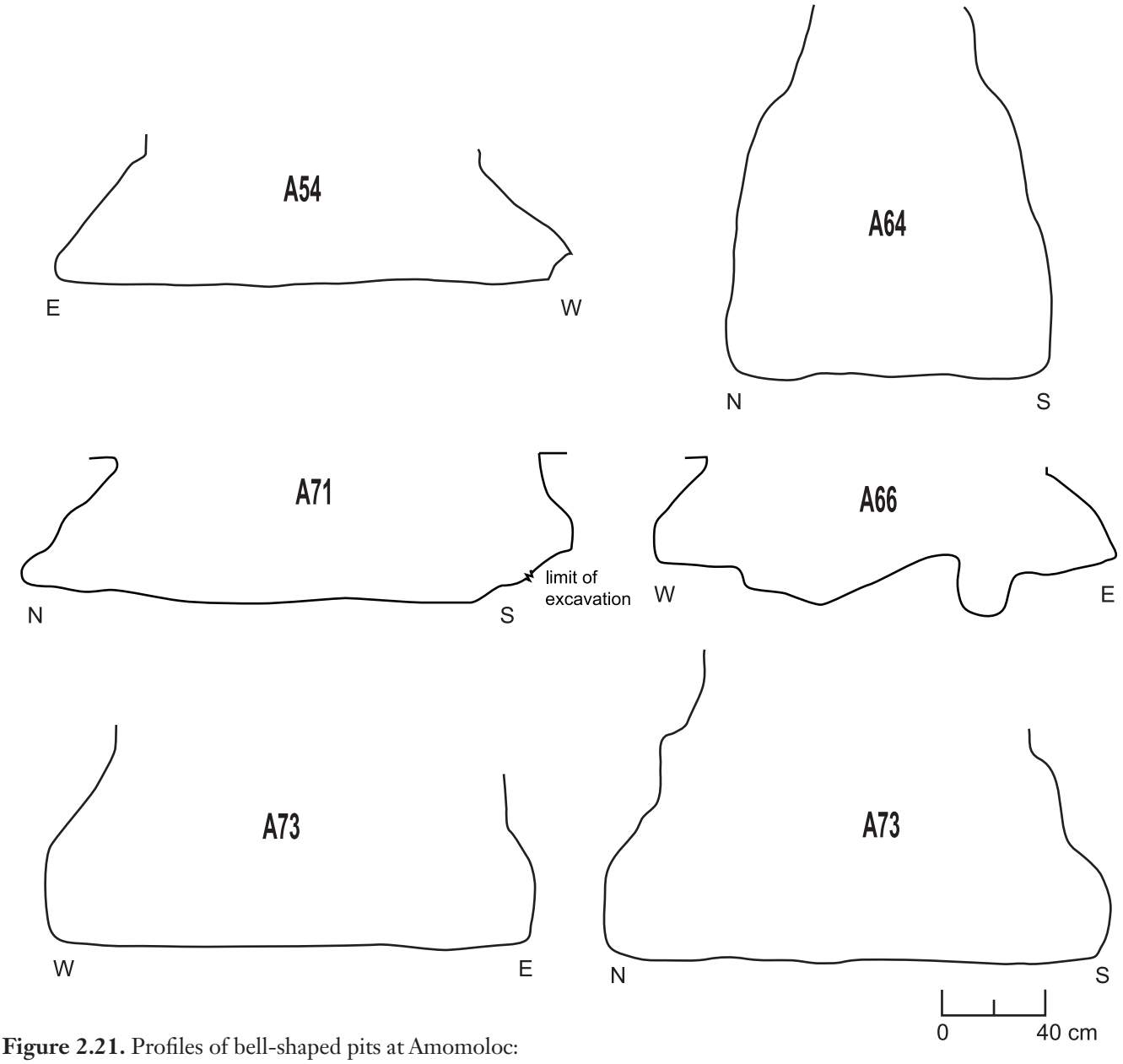

Figure 2.21. Profiles of bell-shaped pits at Amomoloc: features A54, A64, A66, A71, and A73.

Phase. Tlatempa pit; filled in Tlatempa phase.
Unit. T2DD.
Lot: 706.
Excavator. Rodrigo Vilanova.
Context. A56-1S (contents of Stratum 56-0).
Illustration. Figure 2.7.
Stratigraphy. Stratum 56-0 (Lot 706) is a lens about 10 cm thick of burned clay and burned earth, associated with some archaeological materials and near the surface.

Depositional History. Feature A56 is a shallow pit dug into tepetate and then filled with a small amount of domestic trash, including burned clay, burned earth, and sherds. Since little to no carbon was detected in the pit and the associated sherds did not appear to have evidence of burning on them, it is likely that the burned earth and clay were burned elsewhere and then deposited in the pit, along with other domestic trash.

Feature A57

A large bell-shaped pit, located to the east of Feature A63 and cutting into the bottom corner of Feature A63. Dimensions: 75 cm deep, 1.50 m in diameter at (partially destroyed) mouth, 2.57 m in diameter at base, 2.54 m^3 in volume.

Phase. Early Tlatempa pit; filled in Early Tlatempa subphase.
Unit. T3B.

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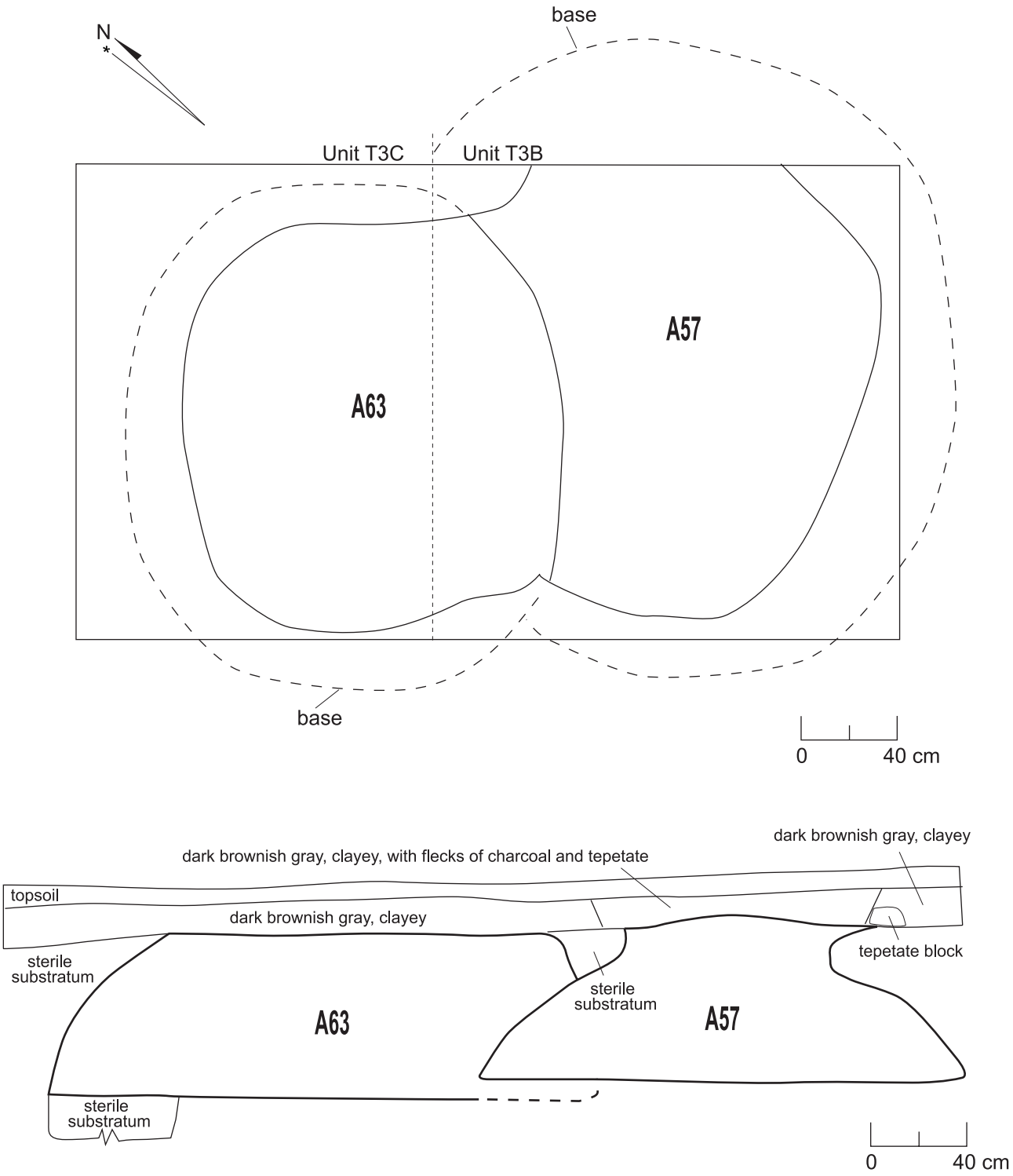

Figure 2.22. Features A57 and A63, Amomoloc, plan and profile.

Lot. Pit was sectioned during excavation, yielding two series of lots.

Excavator. David Carballo.

Contexts. A57-1P (the pit), A57-2S (contents of strata 57-1 and 57-2)

Illustration. Figures 2.13, 2.22, and 2.23.

Stratigraphy. The uppermost layer of the pit is Stratum 57-1 (lots 713, 726), which consists of very dark gray clayey sediment with pieces of tepetate (10 to 20 cm thick). Below Stratum 57-1, Stratum 57-2 (lots 714, 727) is dark grayish brown sandy sediment (30 to 40 cm thick).

Depositional History. First, Feature A63 was dug into te-

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petate and perhaps used for storage. Once Feature A63 was no longer used for its original function, it was filled quickly with two different horizontal strata (Stratum 63-2, followed by Stratum 63-1). Feature A57 was then dug into tepetate so closely to Feature A63 that the lower western portion of A57 cuts into A63. While excavating these features, it was possible to view in profile the distinct intrusion of Feature A57 into Feature A63, indicating that Feature A57 was dug after Feature A63. It is difficult to determine if Feature A57 was used for storage or some other purpose before it was filled. It seems likely that the loose fill from Feature A63 would spill into Feature A57, so it is difficult to imagine that Feature A57 would be an effective storage pit. We think Feature A57 was also filled in quickly with horizontal layers, first with Stratum 57-2, followed by Stratum 57-1. Sherds found in these strata fit together, further supporting the idea that these strata are not very distinct and that the pit was filled in rapidly. Similarly, sherds in strata 63-1 and 63-2 fit together. In one instance, sherds from Strata 57-1 (Lot 713) and 63-1 (Lot 734) fit together to form the same ceramic vessel, suggesting that the two features were open contemporaneously.

Feature A58

A small pit filled with burned earth and sherds. Dimensions: 10 cm deep, 45 x 30 cm, and .01 m^3 in volume.

Phase. Tlatempa pit; filled in Tlatempa phase.

Unit. T2DD.

Lot. 711.

Excavator. Rodrigo Vilanova.

Context. A58-1S (contents of Stratum 58-0).

Illustration. Figure 2.7.

Stratigraphy. Stratum 58-0 (Lot 711) consisted of sediment mixed with ash and burned clay, about 10 cm thick.

Depositional History. Like Feature A56, Feature A58 appears to be a shallow pit dug into tepetate and then filled with a small amount of domestic trash.

Feature A59

A possible hearth with a burned clay base surrounded by an incomplete circle of small basalt rocks, which are held in place by earth and burned clay. The feature was not excavated in its entirety, although based on its regular oval shape, we suspect we excavated at least two-thirds of it. Excavated dimensions: 25 cm deep, 70 x 80 cm, and .15 m^3 in volume.

Phase. Tlatempa pit; filled in Tlatempa phase.

Unit. T2EE.

Lots. 719, 729, 732 (superimposed). Lot 730 is mixed with nonfeature contexts.

Excavator. Rodrigo Vilanova.

Contexts. A59-1P (the hearth), A59-2S (contents of strata 59-1 and 59-2)

Illustration: Figure 2.24.

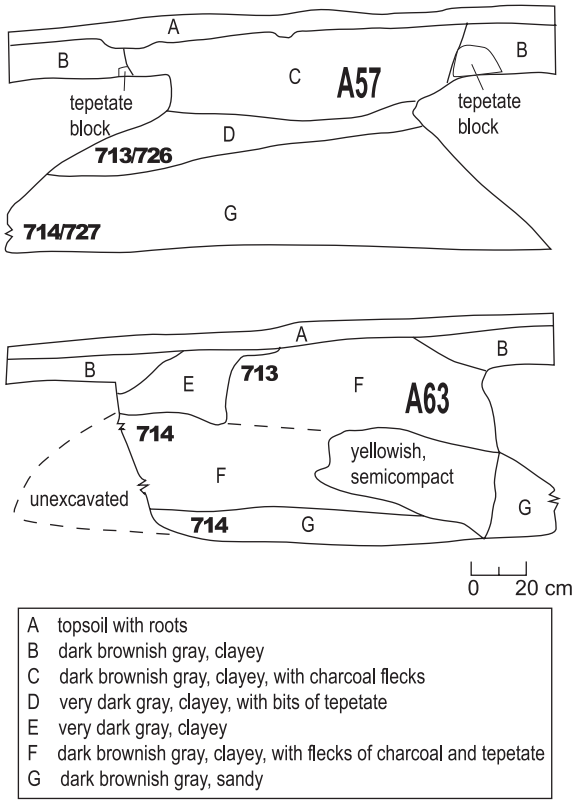

Figure 2.23. Feature A57, northern profile, and Feature A63, western profile, Amomoloc.

Stratigraphy. Stratum 59-1 is the uppermost layer (lots 719, 729, and 732), consisting of dark sediment mixed with ash and burned clay that filled in the pit (about 20 cm thick). Below Stratum 59-1, Stratum 59-2 (Lot 732) was the thick and hardened base of the pit, with burned clay, ash, and burned earth informally surrounded by rocks (about 5 cm thick).

Depositional History: A shallow pit was dug into the tepetate and then lined with a layer of clay and rocks (Stratum 59-2) to form the hardened base and walls of the roasting pit. Stratum 59-1 represents the fill layer of clayey sediment, mixed with burned clay, burned earth, carbon, and ash, which was deposited as a result of burning or cooking something in the pit. It is also possible that the hearth functioned as a trash pit after it was no longer used for its original purpose.

Feature A60

A shallow but extensive pit, similar to Feature A47, filled with sherds, rocks, particles of carbon, and ash. The feature was not excavated in its entirety, and it is difficult to ascertain the full extent of the pit due to its irregular shape. Excavated dimensions: 10 to 15 cm deep in the eastern portion of the feature, 30 to 40 cm deep in the western portion, 5.36 m^2 in area, 1.71 m3 in volume.

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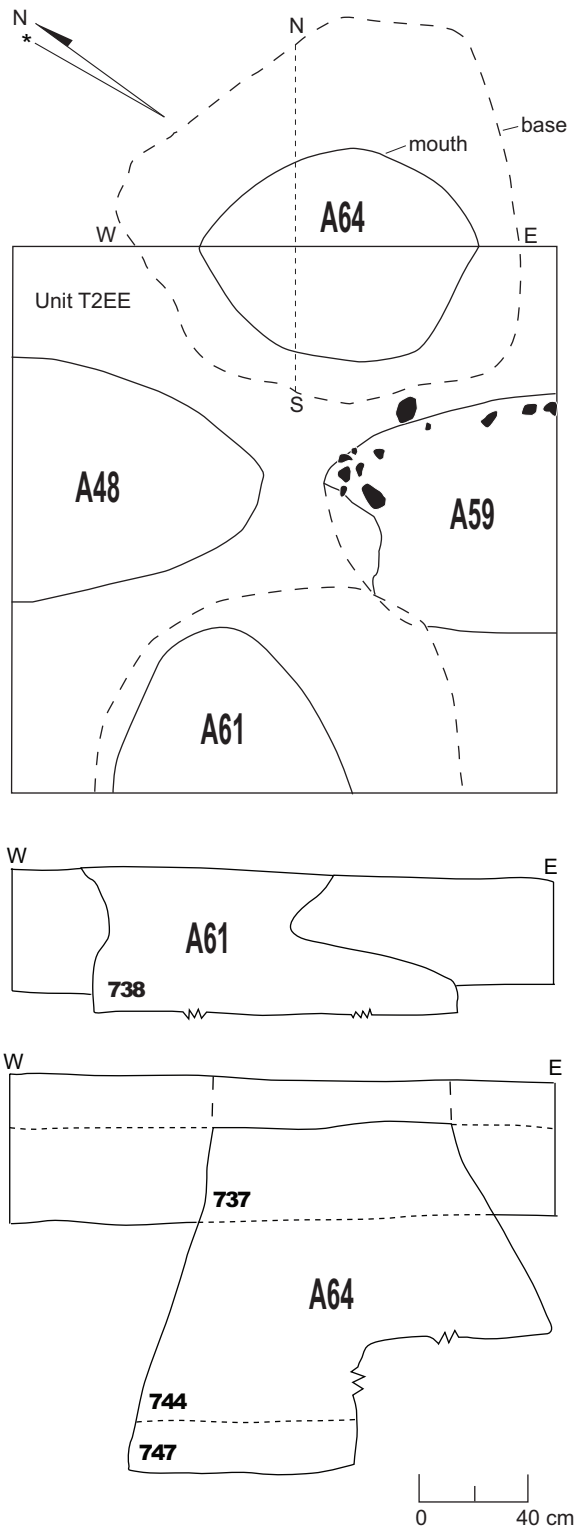

Figure 2.24. Features A59, A61, and A64, Amomoloc, plan and profiles.

Phase. Late Tlatempa pit; filled in Late Tlatempa subphase.

Units. T4C, T4D, T4F.

Lots. 720, 721, 724, 725, 728, 733, 735, 741.

Excavator. Jennifer Carballo.

Context. A60-1S (contents of strata 60-1 and 60-2).

Illustration. Figure 2.25.

Stratigraphy. The uppermost layer of the pit (Stratum 60-1, lots 720, 721, 724, 728, 733, and 735) consists of very dark brown compact sediment (10YR 2/2) containing sherds, rocks, lithics, carbon, and burned clay (10 to 20 cm thick). Below Stratum 60-1 in the western portion of the excavated pit, Stratum 60-2 (lots 725 and 741) consists of sandy, loose, very dark grayish brown sediment (10YR 3/2 to 3/3) containing sherds and rocks (20 to 30 cm thick).

Depositional History. Feature A60 was dug into tepetate, perhaps alongside a separate residence than that associated with Feature A47. It is likely that the lower stratum of the pit (Stratum 60-2) was filled in more rapidly than the lower strata of Feature A47 because Stratum 60-2 is rather homogeneous and horizontal when compared to the discrete concentrations of burned sherds in Stratum 47-3. Stratum 60-1 was then deposited on top of Stratum 60-2 and perhaps represents multiple depositional episodes of sherds, rocks, carbon, and ash.

Feature A61

A boot-shaped pit, perhaps similar in form to Feature A22. A small corner of Feature A61 intrudes slightly into Feature A59, suggesting that A61 was dug after Feature A59. We do not know the complete dimensions of the pit, as we did not excavate Feature A61 in its entirety due to time constraints. Excavated dimensions: 30 cm deep, about 60 cm in diameter at the mouth, 1.30 m in diameter at the base, .12 m^3 in volume.

Phase. Tlatempa pit; filled in Tlatempa phase.

Unit. T2EE.

Lots. 722, 738 (superimposed). Lot 739 is the cleaning of the surface around the feature, as well as profiles associated with the feature, and thus is a mixed context.

Excavator. Rodrigo Vilanova.

Contexts. A61-1P (the pit), A61-2S (contents of Stratum 61-0).

Illustration. Figure 2.24.

Stratigraphy. Only one stratum was identified for Feature A61 (Stratum 61-0, lots 722 and 738). It consists of mixed, loose sediment with ash and burned clay, about 30 cm thick.

Depositional History. Since the excavation of Feature A61 is not complete, it is difficult to comment on its depositional history other than to note that the pit was dug into tepetate (its full depth and extent are still unknown) and was filled in at some point with sediment looser than the surrounding tepetate. Surprisingly few sherds (only three rim sherds) were recovered while defining the feature.

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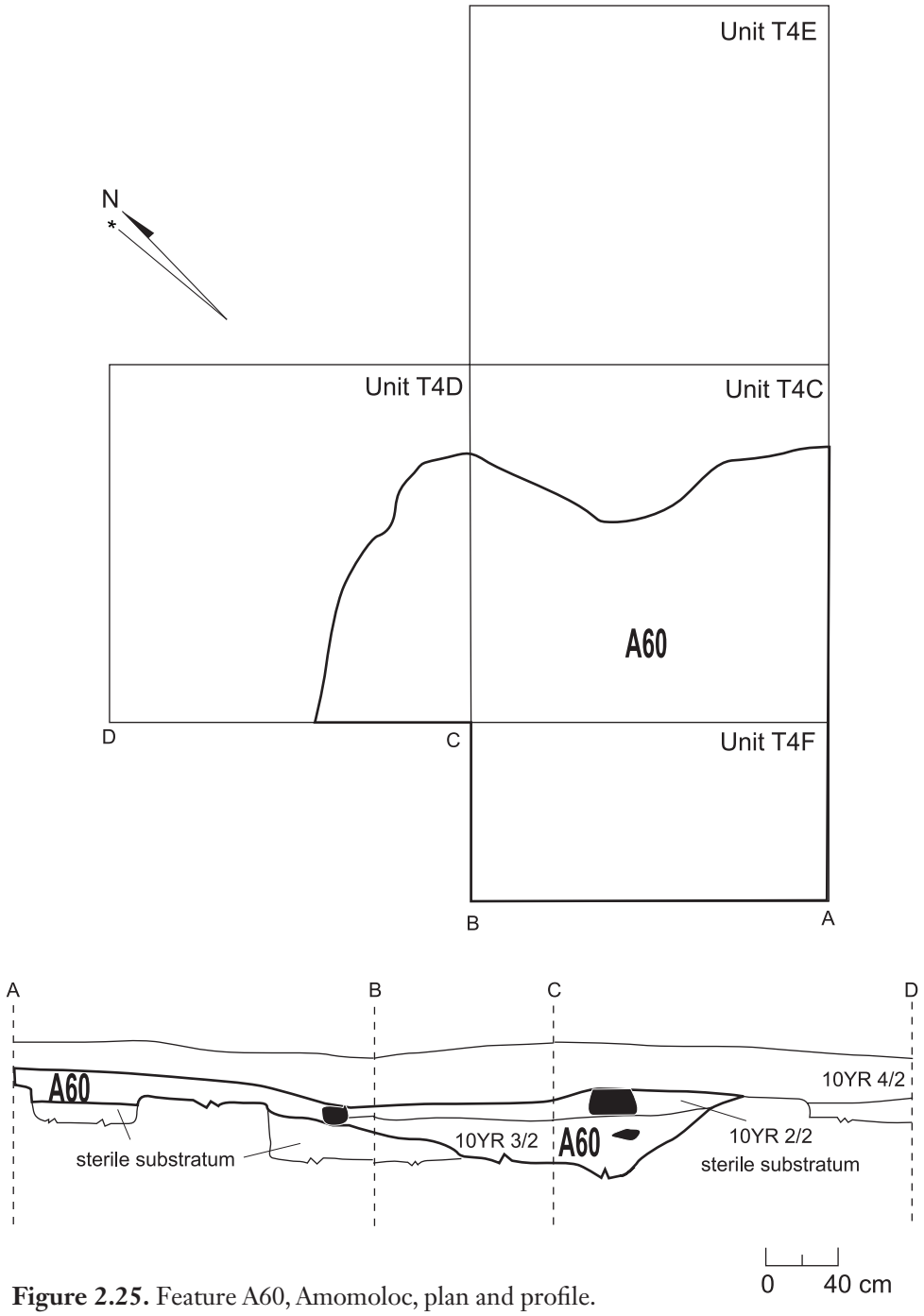

Figure 2.25. Feature A60, Amomoloc, plan and profile.

Feature A63

A large bell-shaped pit; Feature A57, located to the west of Feature A63, cuts into a portion of its lower eastern section. Dimensions: 70 cm deep, 1.60 m in diameter at the mouth, 2.07 m in diameter at the base, 1.42 m^3 in volume. (Volume is lower than expected due to the portion replaced by Feature A57.)

Phase. Probably an Early Tlatempa pit; filled in the Early Tlatempa subphase (dates to the transition between the Early and Late Tlatempa subphases).

Unit. T3C.

Lots. 734, 740, 743, 746 (superimposed).

Excavator. David Carballo.

Contexts. A63-1P (the pit), A63-2S (contents of strata 63-1 and 63-2).

Illustrations. Figures 2.13, 2.22, and 2.23.

Stratigraphy. The uppermost layer of Feature A63 (Stratum 63-1, lots 734 and 740) consists of very dark gray clayey sediment about 30 cm thick (similar to Stratum 57-1

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in color and texture). Below Stratum 63-1, Stratum 63-2 (lots 743 and 746) consists of dark grayish brown sandy sediment about 40 cm thick (similar to Stratum 57-2 in color and texture).

Depositional History. See Feature A57 depositional history.

Feature A64

A bell-shaped pit. Near the base of the pit several rodent burrows were noted, although we did not find any modern materials or identify any other extraneous material mixed in with the pit fill. Dimensions: 1.20 m deep, 90 cm in diameter at the mouth, 1.35 m in diameter at the base, 1.32 m^3 in volume.

Phase. Late Tlatempa pit; filled in Late Tlatempa subphase.

Units. T2DD, T2EE.

Lots. 737, 742, 744, 747, 772, 774, 775.

Excavator. Rodrigo Vilanova, Jennifer Carballo.

Contexts. A64-1P (the pit), A64-2S (contents of Stratum 64-0).

Illustrations. Figures 2.21 and 2.24.

Stratigraphy. The bell-shaped pit was apparently filled with one stratum (Stratum 64-0, lots 737, 742, 744, 747, 772, 774, and 775) about 1.20 m deep. It consists of olive brown loose, sandy sediment (2.5Y 5/3) with ceramics, lithics, and some pieces of burned clay.

Depositional History. The bell-shaped pit was first dug into tepetate and was possibly used for storage. Once Feature A64 no longer served its original function, it was filled rapidly with homogeneous sediment (Stratum 64-0). The fitting of sherds from the uppermost lot (Lot 737) to sherds in the lowermost lot (Lot 747) supports this idea. Sometime after the pit was filled, it was disturbed near its base by rodent burrowing.

Feature A66

A circular pit, almost bell shaped in form. The base of the feature is disturbed by several rodent burrows. Feature A66 is cut into by Feature A67 in its northern corner, indicating that Feature A66 is earlier than Feature A67. Dimensions: about 40 to 50 cm deep, 1.30 m in diameter at the mouth, 1.80 m in diameter at the base, 1.02 m^3 in volume.

Phase. Late Tlatempa pit; filled in Late Tlatempa subphase.

Unit. t392.

Lots. 812, 813, 814, 816, 817, 819, 821. Lot 809 was unscreened and may be mixed with surface materials; Lot 821 may be mixed with materials from Feature A67, although they are more likely associated with A66. Also note that lots 935, 938, and 939, excavated as part of Feature A67, may contain a few materials associated with A66, although this is unlikely.

Excavators. Jennifer Carballo, Edna Luz Díaz Barrera.

Context. A66-1S (contents of Stratum 66-0).

Illustrations. Figures 2.21, 2.26, and 2.27.

Stratigraphy. All the fill of the pit is very similar in color and texture. Stratum 66-0 (lots 809, 812, 813, 814, 816, 817, 819, 821; 40 cm thick) is very dark grayish brown (10YR 3/2) clayey silt, with sherds, lithics, and some bone. The fill of Feature A66 was very muddy and difficult to screen. It was quite different from the fill of other features at the site, which was sandy and extremely easy to screen.

Depositional History. Feature A66 was dug into tepetate and then filled in rapidly in a single depositional episode involving Stratum 66-0. The fitting of sherds from several different lots at varying levels within the feature support this interpretation. The form of the pit suggests that its excavators perhaps planned on digging a bell-shaped pit but for some reason stopped at a depth of 50 cm. When Feature A67 was dug into the tepetate at a later time, its eastern corner intruded into Feature A66.

Feature A67

A circular pit with almost vertical walls. Due to time constraints, only half the pit was excavated. Excavated dimensions: 60 cm deep, 1.00 m in diameter at the mouth, 1.20 m in diameter at the base, .47 m^3 in volume.

Phase. Late Tlatempa pit; filled in Late Tlatempa subphase.

Unit. t392.

Lots. 925, 928, 932, 935, 936, 937, 938, 939. See Feature A66 lots for an explanation of possible mixing of lots 821, 935, 938, and 939.

Excavators. Jennifer Carballo, Edna Luz Díaz Barrera.

Context. A67-1S (contents of Stratum 67-0).

Illustrations. Figures 2.26 and 2.27.

Stratigraphy. Stratum 67-0 (lots 925, 928, 932, 935, 936, 937, 938, and 939) is very dark brown sandy clay (10YR 2/2) containing large sherds, various lithics, figurine fragments, and two incomplete ceramic whistles (about 60 cm thick). Note that lots 935, 938, and 939 were excavated along the eastern side of the pit, where the feature intrudes into Feature A66. Thus the materials recovered from these lots may pertain to either feature.

Depositional History. Feature A67 was dug into tepetate, and its eastern wall cut into Feature A66. Its fill is similar to that of Feature A66 since it was rather homogeneous, as well as muddy and difficult to screen. Feature A67 was filled in rapidly with Stratum 67-0; sherds from various lots of the pit fit together to form more complete vessels.

Feature A68

A large bell-shaped pit filled with abundant cultural material, including a large quantity of ceramics, figurines, and rocks, as well as the only burial found to date at Amomoloc. At first, Feature A68 appeared to be only a hearth, since, after removing the surface layer, we found an oval stain with

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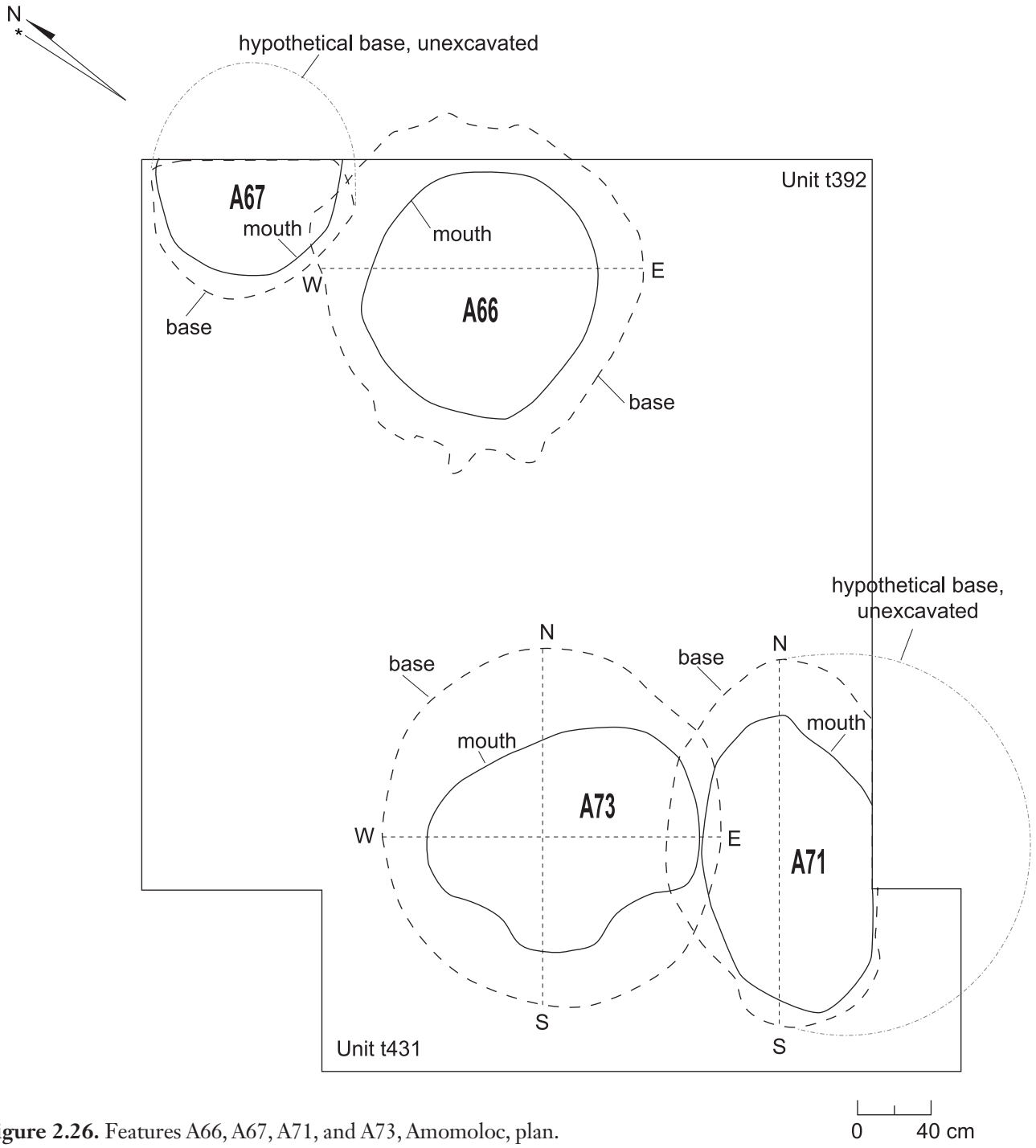

Figure 2.26. Features A66, A67, A71, and A73, Amomoloc, plan.

rocks, carbon, and pieces of burned clay and very little other cultural material. After further excavations to better delimit the form, we noted that looser sediment continued below the stain and began to define the walls of the bell-shaped pit. Dimensions: 1.30 m deep, 0.90 m in diameter at the mouth, 2.16 m in diameter at the base, 2.75 m^3 in volume.

Phase. Late Tlatempa pit; filled in Late Tlatempa subphase.

Unit. t356.

Lots. Pit was bisected and excavated in two sections; lots 815, 818, 822, 824, 826, 829, 830, 833, 834, 835, 836, 837, 842, 843, 845, 849, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 885, 889, 890, 893, 894, 895, 909, 933, 934, 962, 963, and 964.

Excavator. Juan Rodolfo Hernández Montes.

Contexts. A68-1P (the pit), A68-2P (rocks lining the base of the pit), A68-3B (burial), A68-4S (contents of strata 68-1 through 6811), A68-5P (hearth located in the upper layer of the pit).

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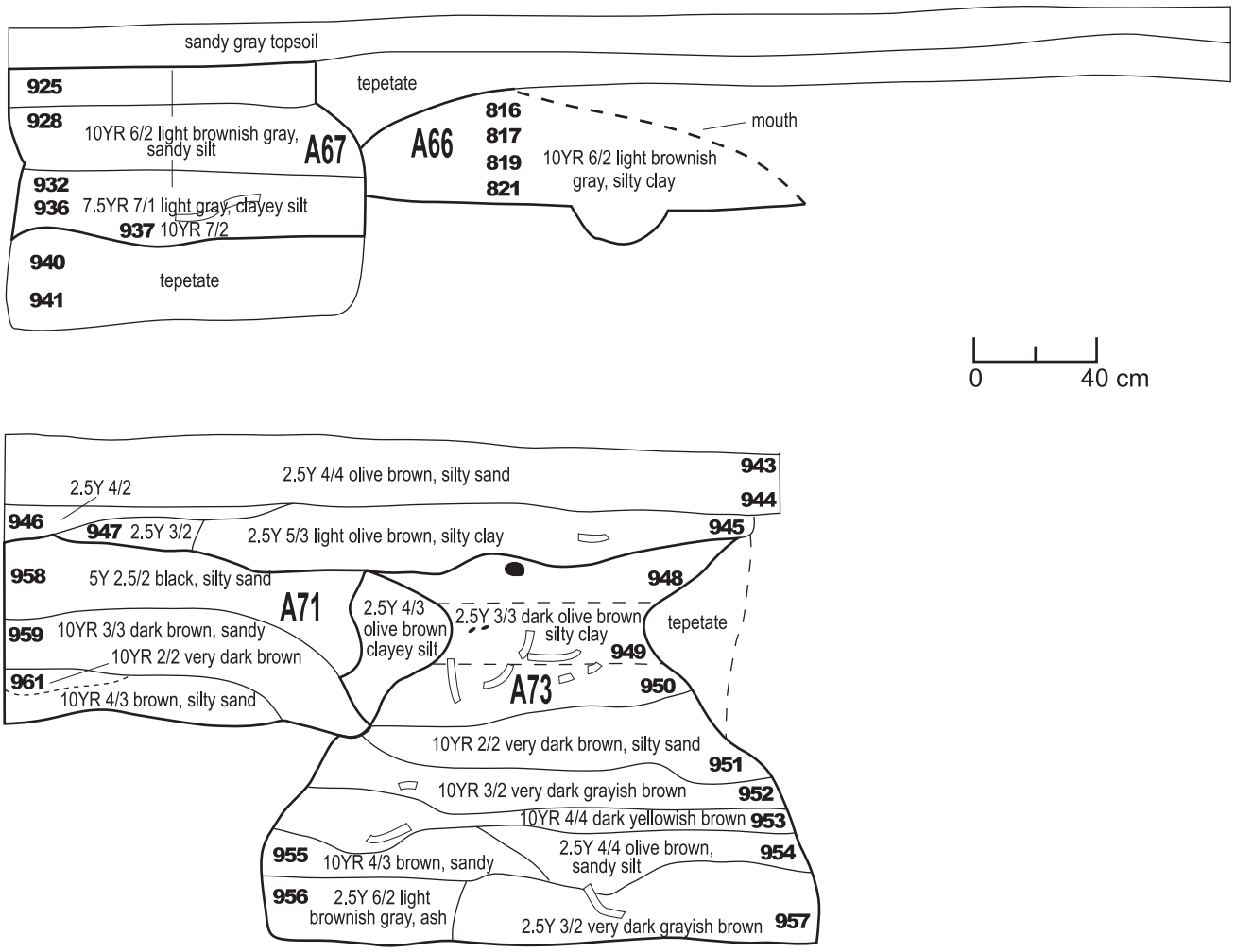

Figure 2.27. Features A66 and A67, northern profile of Unit t392; features A71 and A73, southern profile of Unit t392, Amomoloc.

Illustrations. Figures 2.13, 2.28–2.30.

Stratigraphy. The uppermost layer of the pit (Stratum 68-1, lots 815, 818, 855; 10 cm thick) consisted of an oval-shaped stain with several rocks, carbon, and pieces of burned clay, which we interpret as a hearth or roasting area. The associated sediment varied from yellowish brown to dark brown in color (10YR 2/1 to 3/3); it was deposited horizontally, and very little cultural material was found. Below Stratum 68-1, Stratum 68-2 (lots 822, 824, 826, 829, 830, 833, 834, 835, 836, 837, 856, 857, 858, and 859; 40 cm thick) was a thick homogenous layer of brown silty clay (10YR 4/3), again with relatively few cultural materials and horizontal in structure. The lower 5 to 10 cm of Stratum 68-2 is slightly darker and sandier than the upper portion; we attribute this to the presence of roots in this part of the pit. With Stratum 68-2, we began to define the outwardly sloping bell-shaped walls of the pit. Below Stratum 68-2, the layers of pit fill become more complicated as a number of different strata were deposited. In general these strata are concentrated in the center of the pit (that is, they do not extend horizontally throughout the entire pit) and are often uneven in thickness (that is, deposited diagonally).

Stratum 68-3 (Lot 860; 3 to 8 cm thick) is sandy olive brown sediment (2.5Y 4/4). It rests upon Stratum 68-4 (Lot 861; 4 to 18 cm thick), which is sandy brown sediment (10YR 5/3) characterized by the presence of small tepetate blocks. Below Stratum 68-4,

Stratum 68-5 (Lot 862; 10 to 15 cm thick) is sandy grayish brown sediment (2.5Y 5/2) with a high concentration of ash. Below Stratum 68-5, Stratum 68-6 (Lot 885; 8 cm thick) is silty, light yellowish brown clayey sediment (2.5Y 6/4) resting upon Stratum 68-7 (lots 889 and 890; 10 cm thick). Stratum 68-7 consists of compact light brownish clayey silt (2.5Y 6/2) directly above the burial (in the northern section of the pit) and above Stratum 68-8 (in the center of the pit). Lot 889 is somewhat looser and was deposited above Lot 890, which is a thin (only 2 to 3 cm thick) but very compact layer. Stratum 68-8 (lots 894 and 895; 12 cm thick), in the center of the pit, intrudes into the layer containing the bones of the individual buried at the

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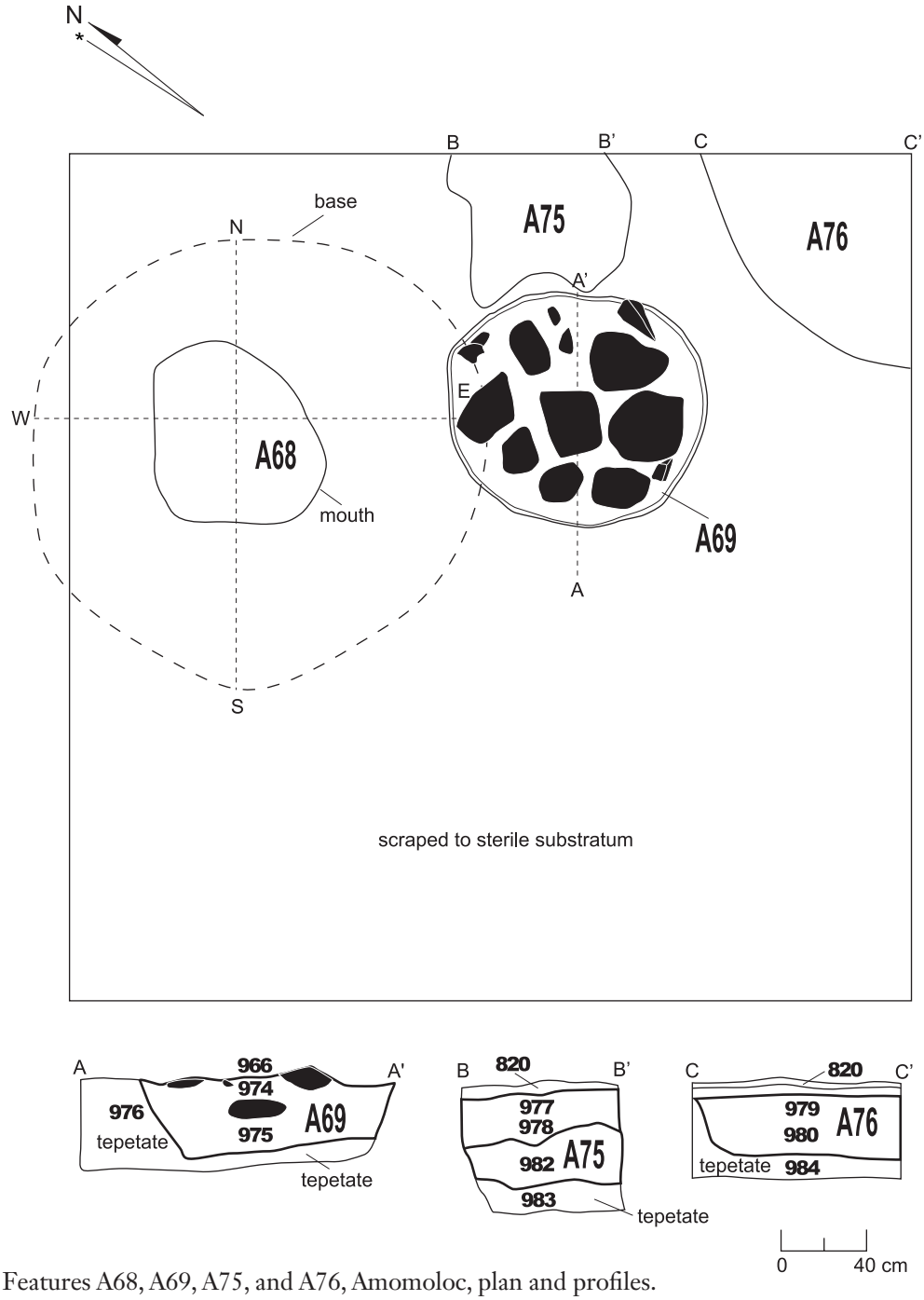

Figure 2.28. Features A68, A69, A75, and A76, Amomoloc, plan and profiles.

base of Feature A68. This stratum is an ashy stain of sandy grayish brown sediment (2.5Y 5/2), with ceramics that fit with sherds from several different strata (located both above and below the individual).

We consider strata 68-9 through 68-11 to be a single depositional stratum associated with the burial. It consists of homogeneous sandy yellowish brown sediment (10YR 5/4). Here we have separated them into three strata to provide better control for the location of artifacts associated with the burial. Stratum 68-9 (lots 842, 843, 845, 863, 864, 865, 889, and 893; 30 to 35 cm thick) was deposited above the burial. This stratum is located at the same depth as strata 68-3 through 68-8 and basically surrounds them. It included several reconstructable vessels as well as one complete Yauhtentzi White serving cup with exterior excising (Figure 9.24d). Stratum 68-10 (lots 849 and 909; 20 to 25 cm thick) consists of the individual, who was placed on his right side, facing south. Although the majority of bones were in anatomical position, the skeleton had deteriorated and was difficult to excavate without breaking the bones further.

The following artifacts were directly associated with the body: a broken metate (covering the feet of the individual), a complete female figurine (04-187; on top of the

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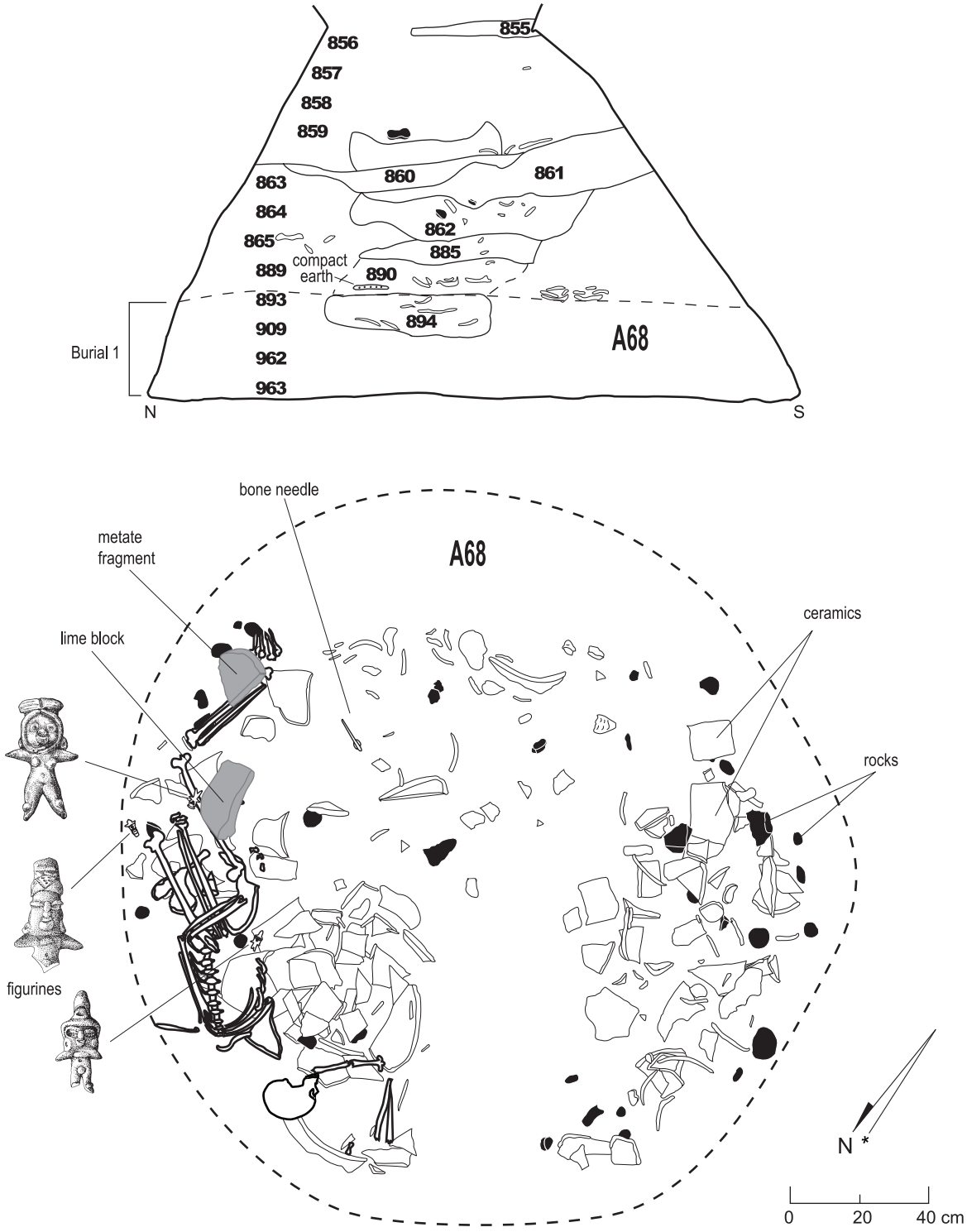

Figure 2.29. Feature A68, Amomoloc, eastern profile and plan of burial.

individual's thigh), a large block of chalky white lime (also near the thigh, partially covering it), a large bone needle (about 30 cm south of the individual, placed on the surface in front of the individual's legs), and a male figurine in the form of a whistle (04-231; placed on the surface in front of the torso). Several large broken sherds recovered in this stratum fit with sherds recovered from other strata, although no complete vessels were found at the exact same level as the individual.

Stratum 68-11 (lots 933, 934, 962, 963, and 964; 10 to

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Figure 2.30. Feature A68, Amomoloc, during excavation.

15 cm thick) is located directly under the individual's body and contained abundant artifacts, particularly large sherds of reconstructable vessels that we believe were also associated with the burial. Several medium-sized rocks were found lining the base of the pit as well.

Depositional History. The large bell-shaped pit was dug into tepetate; its original purpose may have been storage. The rocks lining the base of the pit may be related to this storage function, to raise food up off the moist tepetate floor. At some point the pit was transformed into a tomb. Preliminary osteological analyses suggest that the individual was male, about 44 years old. Based on the homogeneity of the sediment associated with strata 68-9 through 68-11, we believe that all the artifacts recovered in these layers are related to funerary rites associated with the burial. First, hundreds of sherds, from both broken and complete vessels, were placed on the floor of the pit. Many sherds were articulated together, and we were able to reconstruct portions of several vessels. Although the majority of sherds are located just south of the individual, in front of his cranium and torso, he is resting directly on top of others. The individual was placed 10 to 15 cm above the base of the pit, and several artifacts (the metate, lime block, figurines, and needle; see description above) were placed directly around the body at this level. The burial was then covered rapidly with the same type of homogeneous sediment, along with a variety of artifacts (particularly ceramics), perhaps all the way to the top of the pit.

While the skeleton was found basically in anatomical position, some of the bones are out of place, and the legs seem twisted in a manner that may have been possible only after the muscles were no longer attached. There also appear to be cut marks on several bones. This manipulation of the skeleton likely occurred when a hole was cut into the center of the pit to the depth of the skeleton (filled in by strata 68-3 through 68-8). It is interesting to note that there are fewer artifacts right in the center of the pit at the level of the burial, where the hole intrudes, suggesting that this area was particularly disturbed by these intrusive activities. The various strata filling this hole suggest that it was filled in gradually through different depositional episodes. Sherds found in the intrusive layers do

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fit with sherds from the surrounding matrix associated with the burial, so the sediment (and associated materials) scooped out when digging the hole were mixed back in when it was refilled.

After the gradual filling in of strata 68-3 through 68-8, a thick homogeneous layer was deposited into the mouth of the pit (Stratum 68-2). The uniformity of the layer suggests that it was deposited rapidly. On top of Stratum 68-2, the mouth of the pit was used as a roasting area (Stratum 68-1), although the lack of materials associated with this stratum makes it difficult to determine when the hearth was used.

Feature A69

A circular roasting pit with hardened clay walls and base. Dimensions: 35 cm deep, 1.20 m in diameter, .40 m^3 in volume.

Phase. Tlatempa pit.

Unit. t356.

Lots. 966, 972, 974, 975.

Excavator. Juan Rodolfo Hernández Montes.

Contexts. A69-1P (the roasting pit and associated rocks), A69-2S (contents of strata 69-1 through 69-3).

Illustration. Figure 2.28.

Stratigraphy. The uppermost layer of the pit (Stratum 69-1, Lot 966) consists of dark grayish brown sandy silt (10YR 3/2) with fragments of burned clay and burned earth (about 3 to 5 cm thick). Below Stratum 69-1, Stratum 69-2 (lots 972, 974, and 975) is dark brown silty clay (10YR 3/3), which rests on top of and around various large rocks within this layer (about 30 cm thick). Below Stratum 69-2, Stratum 69-3 consists of the burned clay base of the pit, which was excavated as part of Lot 975.

Depositional History. A shallow circular pit was excavated into the tepetate and then heated so that its walls and base hardened (Stratum 69-3). The pit was filled with large rocks and the dark brown sediment of Stratum 69-2; at this time the pit was probably used for roasting or cooking. Stratum 69-2 was then covered by Stratum 69-1 (which contained no archaeological materials). Stratum 69-1 may represent a later burning episode not associated with the original use of the roasting pit.

Feature A71

A circular pit, almost bell shaped in form (similar to Feature A66). Due to time constraints, we excavated approximately only one-half of the pit. Although the lower northwestern corner of Feature A71 touches the edge of Feature A73 just slightly, the stratigraphic relationship between Feature A71 and Feature A73 is not clear due to root activity in this area of the site. Excavated dimensions: 50 cm deep, 1.65 m in diameter at the mouth, 2.20 m in diameter at the base, .63 m^3 in volume.

Phase. Probably Early Tlatempa pit; filled in the Early Tlatempa subphase (dates to the transition between the Early and Late Tlatempa subphases).

Units. t392, t431.

Lots. 846, 847, 848, 958, 959, 961.Lots 840, 870, and 897 represent mixing with Feature A73.

Excavators. Jennifer Carballo, Edna Luz Díaz Barrera.

Context. A71-1S (contents of strata 71-1 through 71-3).

Illustrations. Figures 2.21, 2.26, and 2.27.

Stratigraphy. Feature A71 was filled in three distinct, basically horizontal layers. The uppermost layer is Stratum 71-1 (lots 846 and 958) and consists of black silty sand (5Y 2.5/2) (about 20 cm thick). Below Stratum 71-1, Stratum 71-2 (lots 847 and 959) is dark brown sandy sediment (10YR 3/3) (about 20 cm thick). The lowermost layer (Stratum 71-3, lots 848 and 961) is brown silty-sandy sediment (10YR 4/3) with a high concentration of sherds and lithics (about 10 to 15 cm thick).

Depositional History. Feature A71 was dug into tepetate and then was filled over a short period of time with strata 71-3 through 71-1. The fitting together of sherds from all three strata suggests that while they represent slightly different sediments, the strata contained domestic debris obtained from the same area of the site and the pit was filled in quickly. Although the lower northwestern corner of Feature A71 touches Feature A73, their stratigraphic relationship is unclear.

Feature A73

A large bell-shaped pit filled with trash in several depositional episodes. Along with a high concentration of sherd and figurine fragments, several ceramic balls, various lithics, two greenstone beads, and a possible maguey spine were recovered from Feature A73. Very small and disintegrating fragments of mica, associated with Lot 886, were also recovered from the pit. The lower northwestern corner of Feature A71 appears to cut into Feature A73 just slightly, yet the relationship between Feature A71 and Feature A73 is not entirely clear due to root activity in this area of the site. Dimensions: 1.25 m deep, 1.10 m in diameter at the mouth, 1.80 m in diameter at the base, 2.30 m^3 in volume.

Phase. Late Tlatempa pit; filled in Late Tlatempa subphase.

Units. t392, t431.

Lots. Pit was bisected and excavated in two sections; lots 852, 853, 854, 866, 871, 872, 876, 878, 879, 880, 883, 884, 886, 887, 888, 898, 899, 904, 905, 906, 914, 915, 920, 948, 949, 950, 951, 952, 953, 954, 955, 956, and 957. Note that it was often difficult to differentiate natural strata within the pit during excavation, so there may be mixing of materials across strata within specific lots. Also, several lots excavated in the upper portion of the pit were either mixed with the superficial layer (lots 831, 832, and 840) and/or mixed with Feature A71 (lots 840, 870, and 897).

Excavators. Jennifer Carballo, Edna Luz Díaz Barrera.

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Contexts. A73-1P (the pit itself), A73-2S (contents of strata 73-1 through 73-8).

Illustrations. Figures 2.21, 2.26, and 2.27.

Stratigraphy. Feature A73 was filled in eight distinct stages. The uppermost layer of the pit (Stratum 73-1, lots 852, 853, 854, 866, 870, 871, 948, 949, and 950) is dark olive brown silty clay (2.5Y 3/3) and is about 50 cm thick. Below Stratum 73-1, Stratum 73-2 (lots 872, 876, 878, 879, 880, 883, 897, and 951) is very dark brown silty sand (10YR 2/2) and varies from about 10 to 25 cm thick. Below Stratum 73-2, Stratum 73-3 (lots 884, 887, 898, 904, and 952) is very dark grayish brown (10YR 3/2) sediment, about 15 cm thick. Below Stratum 73-3, Stratum 73-4 (lots 884, 887, 898, 904, and 953) is dark yellowish brown sediment (10YR 4/4) and varies from about 5 to 20 cm thick. Strata 73-5 and 73-6 are deposited directly below Stratum 73-4. Stratum 73-5 (lots 886, 888, 899, 905, 906, and 954) was deposited before Stratum 73-6 and is olive brown sandy silt (2.5Y 4/4), about 10 to 15 cm thick. Stratum 73-6 (lots 886, 888, 899, 905, 906, and 955) is sandy brown sediment (10YR 4/3) to the east of Stratum 73-5 and is also about 10 and 15 cm thick. Below strata 73-5 and 73-6, strata 73-7 and 73-8 rest upon the tepetate base of the pit. Stratum 73-7 (lots 914, 915, 920, and 956) is a light brownish gray ashy layer along the eastern side of the pit (2.5Y 6/2), about 20 cm thick. Stratum 73-8 (lots 914, 915, 920, and 957) is very dark grayish brown sediment (2.5Y 3/2), also about 20 cm thick.

Depositional History. This large bell-shaped pit was dug into tepetate and then used for storage or some other purpose. Once the pit no longer served its original function, it was filled rather rapidly with horizontally structured layers. Although the strata deposited in the pit are not as homogeneous as those found in other bell-shaped pits at the site (see features A64 or A57, for example), we do have quite a high number of sherd fittings across strata, particularly among the lowermost strata (strata 73-3 through 73-8). Thus we believe that the pit was filled in over a short period of time with strata 73-8 through 73-3 (sequentially, in reverse numerical order). The deposition of Stratum 73-2, followed by the deposition of Stratum 73-1, may also have been rapid (Stratum 73-1 is a particularly thick and homogeneous layer), but few sherds in these strata fit with those in the lower six strata.

Feature A74

An extensive but relatively shallow pit, about 60 cm deep (in the portion that was excavated). After removing the superficial humic layer in Unit t549 (about 10 to 15 cm deep), we noted a dark, irregularly shaped stain, continuing beyond the unit to the north, south, and east. To better define the limits of the feature, we also removed the humic layer in a 4-x-2-m extension directly east of Unit t549. We found that the stain continues to the east beyond even this unit but did not determine its full extent. The size of the stain that we identified covers an area of almost 16.0 m^2. We excavated a 4.0 m^2 portion in the southeastern corner of Unit t549, with a volume of 2.77 m^3.

Phase. Late Tlatempa pit; filled in the Late Tlatempa subphase.

Unit. t549.

Lots. 931, 942, 965, 967, 968, 969, 970, 971.

Excavator. Jennifer Carballo.

Context. A74-1S (contents of strata 74-1 through 74-3).

Illustration. Figure 2.31.

Stratigraphy. The uppermost layer of the pit is Stratum 74-1 (Lot 931), which is black in color (10YR 2/1) and contains a high concentration of carbon, ceramics, rocks, figurine fragments, and bone. Stratum 74-1 is about 20 cm thick, is horizontal, and appears to be limited to the central portion of the feature. (It does not extend to the western border of the feature where we excavated.) Below Stratum 74-1, Stratum 74-2 (lots 942, 965, 967, 969, 970, and 971) consists of very dark brown loose sediment (10YR 2/2) containing a high concentration of roots and archaeological material. Stratum 74-2 is about 30 to 40 cm thick and is very uniform in color and texture. Below Stratum 74-2, Stratum 74-3 (Lot 968) rests on top of the tepetate base of the pit. It consists of dark yellowish brown to light yellowish brown (10YR 4/6 to 2.5Y 6/4) dry sediment (about 10 to 20 cm thick). Stratum 74-3 does contain artifacts but in much lower quantities than the other strata. We suspect that Stratum 74-3 does not represent a distinct depositional episode from Stratum 74-2. Rather, its lighter color appears to be due to contact and mixing with the tepetate base, as though the original excavators of the pit did not clean out the pit fully before they started dumping trash in it.

Depositional History. Since we did not have time to determine the full extent of Feature A74 or to excavate a larger portion of it, it is difficult to comment on the depositional history of the feature as a whole. Based on our limited excavations and the uniform character of the fill (strata 74-3 and 74-2), we propose that Feature A74 was dug into tepetate and then a large quantity of domestic debris was dumped in the pit in a single depositional phase. In some areas of the pit, trash was burned on top of Stratum 74-2, resulting in a black, carbon-rich layer mixed with artifacts (Stratum 74-1). We do not know if the rest of the pit was filled quickly by a single depositional episode or if the yet unexcavated areas of Feature A74 were filled by separate depositional episodes.

Feature A75

A shallow pit with almost vertical walls to the north of Feature A69. Due to time constraints, only approximately 75 percent of the feature was excavated (the portion located within Unit t356 only). Excavated dimensions: 40 cm deep, 80 x 60 cm, and .23 m^3 in volume.

Phase. Tlatempa pit; filled in Tlatempa phase.

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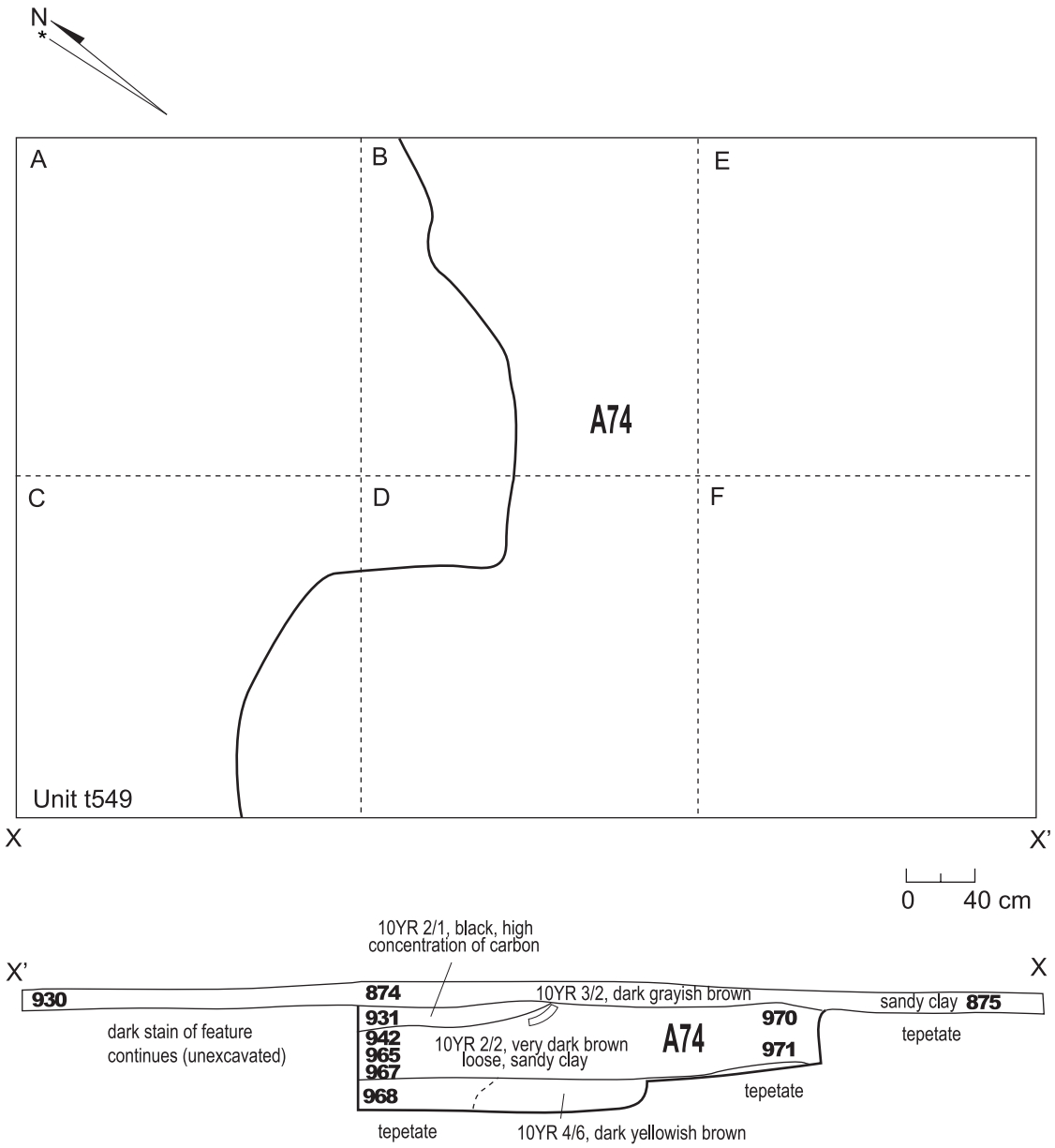

Figure 2.31. Feature A74, Amomoloc, plan and profile.

Unit. t356.
Lots. 977, 978, 982 (superimposed).
Excavator. Juan Rodolfo Hernández Montes.
Context. A75-1S (contents of strata 75-1 and 75-2).
Illustration. Figure 2.28.

Stratigraphy. The uppermost layer of Feature A75 is Stratum 75-1 (Lot 977; 5 cm thick), which represents the contact of the contents of the pit with the superficial layer. Stratum 75-1 is very dark grayish brown (10YR 3/2) sandy silt. A glazed sherd was found mixed in with Tlatempa sherds in this layer. Below Stratum 75-1, Stratum 75-2 (lots 977, 978, and 982; 35 cm thick) is grayish brown sandy sediment (2.5Y 5/2) containing sherds, projectile points, and figurine fragments.

Depositional History. The pit was dug into tepetate and then filled in rapidly with trash and the homogeneous sediment of Stratum 75-2. Stratum 75-1 was probably deposited on top of Stratum 75-2 around the time Stratum 75-2 was deposited, but it became mixed with later materials due to erosion and close contact with the surface.

Feature A76

A shallow circular pit with almost vertical walls. Due to time constraints, we excavated only about 25 percent of this feature. Excavated dimensions: 30 cm deep, .79 m^2 in area, .22 m^3 in volume.

Phase. Tlatempa pit, filled in Tlatempa phase.

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Unit. t356.

Lots. 979, 980 (superimposed).

Excavator. Juan Rodolfo Hernández Montes.

Context. A76-1S (contents of strata 76-1 and 76-2).

Illustration. Figure 2.28.

Stratigraphy. The uppermost layer of the pit (Stratum 76-1, Lot 979; 5 cm thick) represents contact and mixing with the superficial layer and consists of very dark grayish brown sandy silt (10YR 3/2). Below Stratum 76-1, Stratum 76-2 (lots 979 and 980; 25 cm thick) is grayish brown sandy sediment (2.5Y 5/2) with sherds, pieces of burned clay (some very similar to the hardened walls of Feature A69), and burned rocks.

Depositional History. Feature A76 was first dug into tepetate and then filled in rapidly with Stratum 76-2. The contents of Stratum 76-2 suggest that Feature A76 may have been a trash pit used for the disposal of items related to the nearby roasting pit, Feature A69. Stratum 76-1 was deposited on top of Stratum 76-2 and is the mixing of the feature contents with the surface layer.

Feature A78

A shallow circular pit that may be the base of a bell-shaped pit that has now almost completely eroded away. The feature had been recently looted, and only half of it remained intact for excavation. We noted the presence of very fragmented and eroded bone to the side of the feature; it is possible that a burial at the base of the feature was disturbed not only by erosion but also by looters. Dimensions of remnant feature: 35 cm deep, 1.0 x 1.5 m, and .53 m^3 in volume. (Due to time constraints, we excavated only about .26 m^3 of the feature.)

Phase. Early Tlatempa pit; filled in the Early Tlatempa subphase.

Unit. t220.

Lots. 989 and 990 (superimposed). Lot 987 is a surface collection of materials that likely eroded out of the feature. Lot 988 is the superficial layer in contact with the feature (which may also contain many artifacts associated with the feature).

Excavator. Jennifer Carballo.

Context. A78-1S (contents of Stratum 78-0). Due to the state of erosion, we cannot posit any other contexts for this feature.

Illustration. Figure 2.32.

Stratigraphy. The only preserved stratum remaining in Feature A78 is Stratum 78-0 (lots 989 and 990; 35 cm thick). It consists of dark brown clayey sediment (10YR 3/3) with sherds, figurine fragments, and a few rocks.

Depositional History. Feature A78 was dug into tepetate and then filled in with Stratum 78-0. We do not know the original form or depth of this feature since much of it has eroded away, but it was possibly originally a bell-shaped pit with a burial at its base.

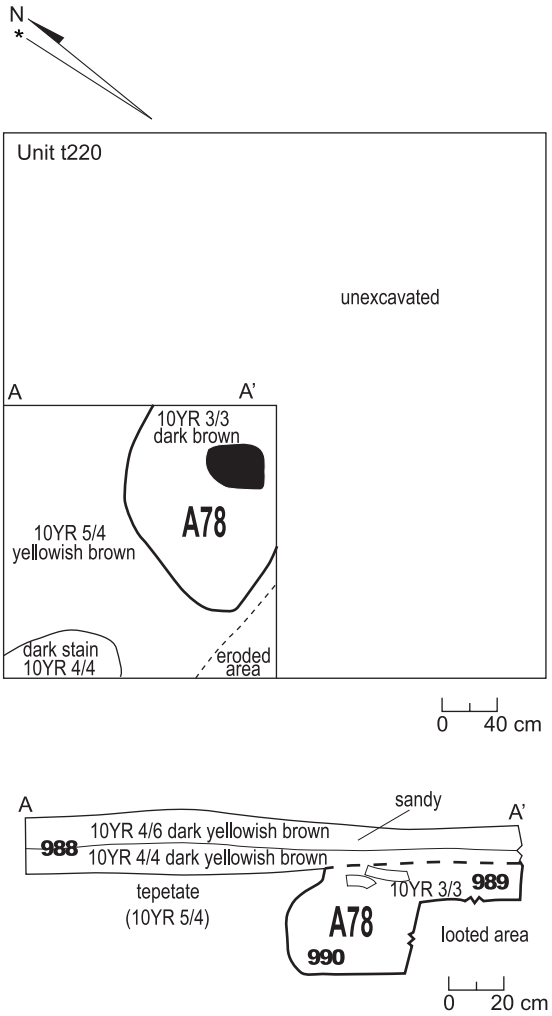

Figure 2.32. Feature A78, Amomoloc, plan and profile (note difference in scales).

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CHAPTER 3

Tetel

Richard G. Lesure and David M. Carballo

TETEL IS THE SITE of a small Formative village on the northeastern slopes of Cerro Santa Ursula, just west of Apizaco (Figure 1.1). We identify it as the site referred to as T-26 by García Cook (1972a:Figure 2). It forms part of site E14B33-053 in the registry of the Instituto Nacional de Anthropología e Historia; that designation also includes García Cook's T-49. While we have used the last two digits of the INAH site code (53) to refer to Tetel in reports and in labels on artifacts, our identification of site boundaries follows those of García Cook. We identify Tetel/T-26 based on the surface distribution of Tlatempa-phase diagnostics and distinguish it from later occupations to the west around the slope of the hill.

We conducted a brief surface study of Tetel in August of 2000 and returned in 2001 for detailed mapping and excavations. The excavations, conducted from February 6 through March 15, identified 15 Formative features, including four bell-shaped pits, six other pits, two concentrations of refuse, and the possible remains of two small residential platforms. All features date to the Tlatempa or Texoloc phase.

THE SITE

Cerro Santa Ursula is a small volcanic cinder cone, a prominent feature of the landscape in the vicinity of Apizaco that is visible from many spots in the surrounding countryside. The summit is about 2,600 m above sea level. The Tetel site consists of a scatter of sherds covering 2 ha of sloping ground to the northeast of the summit, some 200 m downslope (Figure 3.1). The mean elevation of the site is about 2,555 m.

Much of the slopes of Cerro Santa Ursula, including the area of the site, is composed of pyroclastic sediments redeposited by wind. Upon exposure to air and water, they take on the cement-like hardness of tepetate. On the western side of the hill, some 300 m from our site, is a basaltic extrusion. That was probably a source of useful rock for the residents of Tetel. We recovered numerous pieces of flaked basalt from some features.

The slopes of Cerro Santa Ursula have been worked into a complex network of terraces. According to nearby residents, the terraces in the vicinity of the site were refurbished by bulldozer perhaps 20 years ago. Because of this recent manipulation, we did little direct work attempting to establish the antiquity of the terraces (though see discussion of Area C, below). Based on Borejsza's work on terraces at other sites, we suspect that those on Cerro Santa Ursula postdate the Formative period.

Part of the network of terraces, in a strip crossing the site and extending to the top of the hill, is illustrated in Figure 3.2. In the area covered by the figure, Tlatempa and Texoloc sherds are identifiable on the surfaces of terraces 4 through 8. Only Terrace 7 is currently in cultivation. Terraces 4 and 5 are badly to severely eroded. The part of terraces 6 and 7 covered by pine trees and bushes (Area A in Figure 3.2) is better preserved. That area has not been cultivated in living memory. Bits of toilet paper all over the surface attest to its popularity as an outdoor bathroom. It has also been heavily looted, particularly on the lower part of Terrace 6 and on Terrace 7. Our units A1 and A2 revealed nothing but intersecting looters' pits; we found undisturbed deposits farther upslope.

EXCAVATION AND STRATIGRAPHY

We excavated in four areas, designated A through D (Figure 3.2). Area A was that part of terraces 6 and 7 currently

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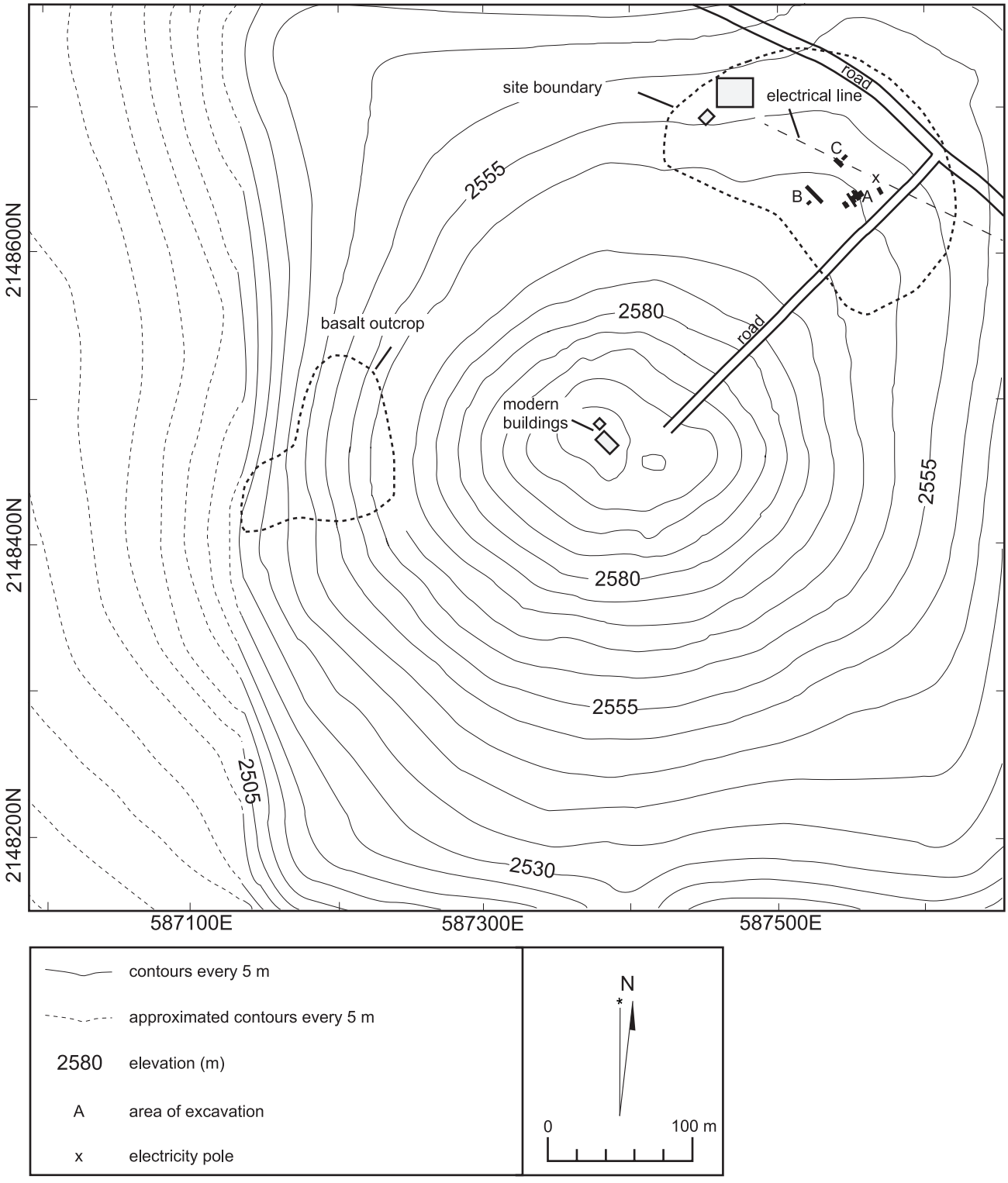

Figure 3.1. Topographic map of Tetel showing site boundaries (upper right), summit of Cerro Santa Ursula, and basalt outcrop.

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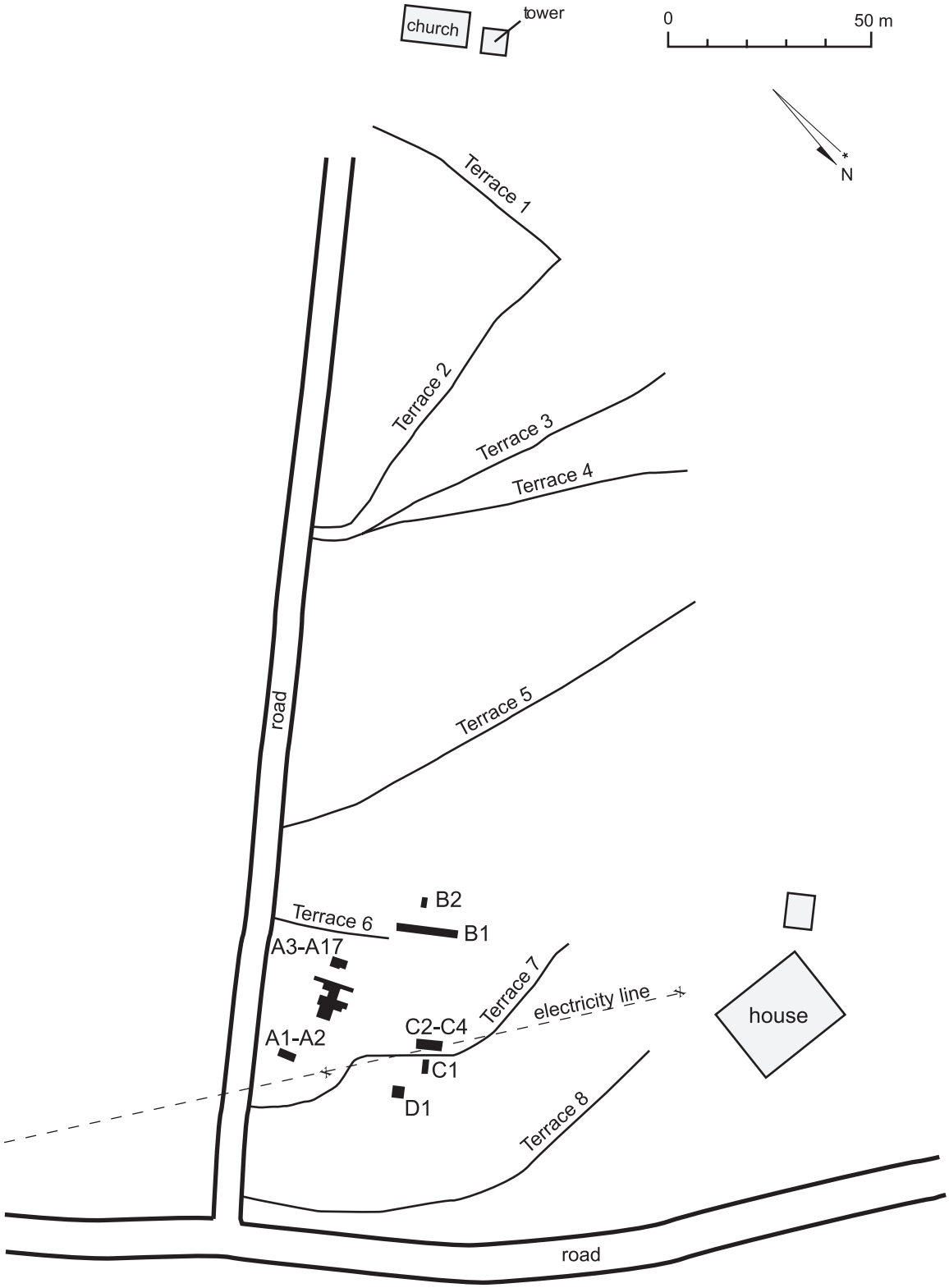

Figure 3.2. Terraces of Tetel, with location of excavations.

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in trees. Areas B and C were in the open area to the east of A, along the lower edges of terraces 5 and 6, respectively. Area D was on Terrace 7, along the western edge of a plowed field. Excavation units were of various sizes. Each was labeled with the letter for its area and a number (Figure 3.3). Numbers were assigned sequentially within each area as new pits were opened; they do not impart information on horizontal relationships between pits. Our system for designating lots (the basic provenience units) and for labeling features and contexts is described in Chapter 1. At Tetel we assigned lots 1 through 133.

In areas A, B, and D, our excavation strategy consisted of stripping off a disturbed upper layer of 10 to 25 cm to reveal the uppermost preserved surfaces of Formative pit features penetrating the sterile tepetate-forming substratum. In Area D, damage to the ancient ground surface was so severe that only a few centimeters remained of a Formative pit feature (Feature A19). At least 50 cm and likely closer to 1 m (potentially more) of sediment has been lost in this area since Formative times. Adding about 1 m here at the back of Terrace 7 would produce a ground surface similar in elevation to that of the leading edge of Terrace 6 in Area C. Our suspicion that the terraces postdate the Formative occupation is thus strengthened.

Destruction of cultural deposits seems similarly catastrophic in much of Area B, except for the southeasterly 4 m or so of the long trench B1. In B2, deposits of Feature A17 were only 10 to 20 cm thick above the sterile substratum. We suspect this was originally a large pit at least 50 cm deep, but due to the observed shallowness of deposits, we did not explore this feature fully. Much of B1 appears to be disturbed and may have been damaged by the bulldozer. However, at the southeastern end of B1, the ground rises, and we did encounter intact features (A16 and A18) descending to more than 1 m beneath the modern ground surface. The two features penetrated what may have been a low Formative platform. Since one of the features (A18) can be clearly traced penetrating the "platform," we know that this layer was not deposited by the bulldozer. Our reading of the stratigraphy also indicates that we are on the original edge of the platform, undamaged by the bulldozer.

Our excavations in Area A were constrained by trees and looters' pits, but cultural deposits were better preserved here than in any area except the southeastern end of Unit B1. Still, the Formative ground surface seems to have eroded away. The usual stratigraphic sequence in the area consisted of light gray topsoil, about 10 cm thick, underlain by a compact yellow layer (about 10 cm thick) that proved very difficult to dig through, even with small picks. Underlying the hard yellow layer was the sterile tepetate-forming substratum. Mouths of pit features were usually visible immediately below the yellow layer. However, concentrations of artifacts in the yellow layer itself presaged the pit features that would be identified immediately below. It appears that this layer is a disturbed and weathered remnant of the sterile substratum and that the pit features originated from a destroyed surface somewhat above it. In Feature A11, the remains of a burial placed in the upper mouth of a bell-shaped pit appeared in the yellow layer, further supporting the idea that this layer underlay the ancient ground surface. Only in one part of Area A did we encounter an exception to the general stratigraphy. In units A6 and A12, about 50 cm of deposits overlay the tepetate-forming substratum. We appear to have cut through a small artificial platform in this area.

In Area C, along the leading edge of Terrace 6, we were hoping to find deeper cultural deposits and perhaps an intact Formative ground surface. Deposits were deeper in this area, but our main excavation unit of 2 x 6 m was so catastrophically affected by rodent burrows that we were unable to decipher the original Formative stratigraphy. In Unit C1 we found what appears to be the lower remnant of a Formative pit feature (Feature A1), the upper portion destroyed by erosion prior to terrace construction.

OVERVIEW OF RESULTS

Our excavations revealed a variety of features: low earthen platforms, bell-shaped storage pits, and pits with open profiles in a variety of sizes and shapes. We have not identified a function for open-profile pits, though we suspect they were dug in and around homes for various purposes. We imagine these different features not as individual units but instead as linked to other features in house-yards (as argued for Amomoloc in Chapter 2). Unfortunately, loss to erosion of the Formative ground surface at Tetel, combined with further destruction of subsurface features by looting or agricultural works, as well as the limited nature of our own excavations, means that we can make only tentative headway toward identifying such yards—what might be thought of as macrofeatures—at Tetel. (See our speculative synthesis on Platform 1 and features A4, A12, and A13, below.)

Tetel appears to have been a small village built on sloping ground. The inhabitants constructed low platforms extending out from the natural slope to create level surfaces on which to build houses. Houses may have been spaced every 20 to 30 m. Houses were small and made of perishable materials. Some may have had intramural storage pits. Surrounding each house was a yard in which household members undertook a variety of activities. Those for which we have evidence include the digging of pits of various sizes and shapes. The most recognizable are bell-shaped storage pits. When the storage or other function of pits ceased, they were filled with debris of various kinds, including household refuse. Sometimes bell-shaped pits were used for burial of family members. In one case described below (Feature A4), a bell-shaped pit seems to have been converted into a covered tomb.

We found evidence of occupation of the site during the Tlatempa and Texoloc phases, roughly 700 to 450 B.C. The overall distribution of features classified by phase is

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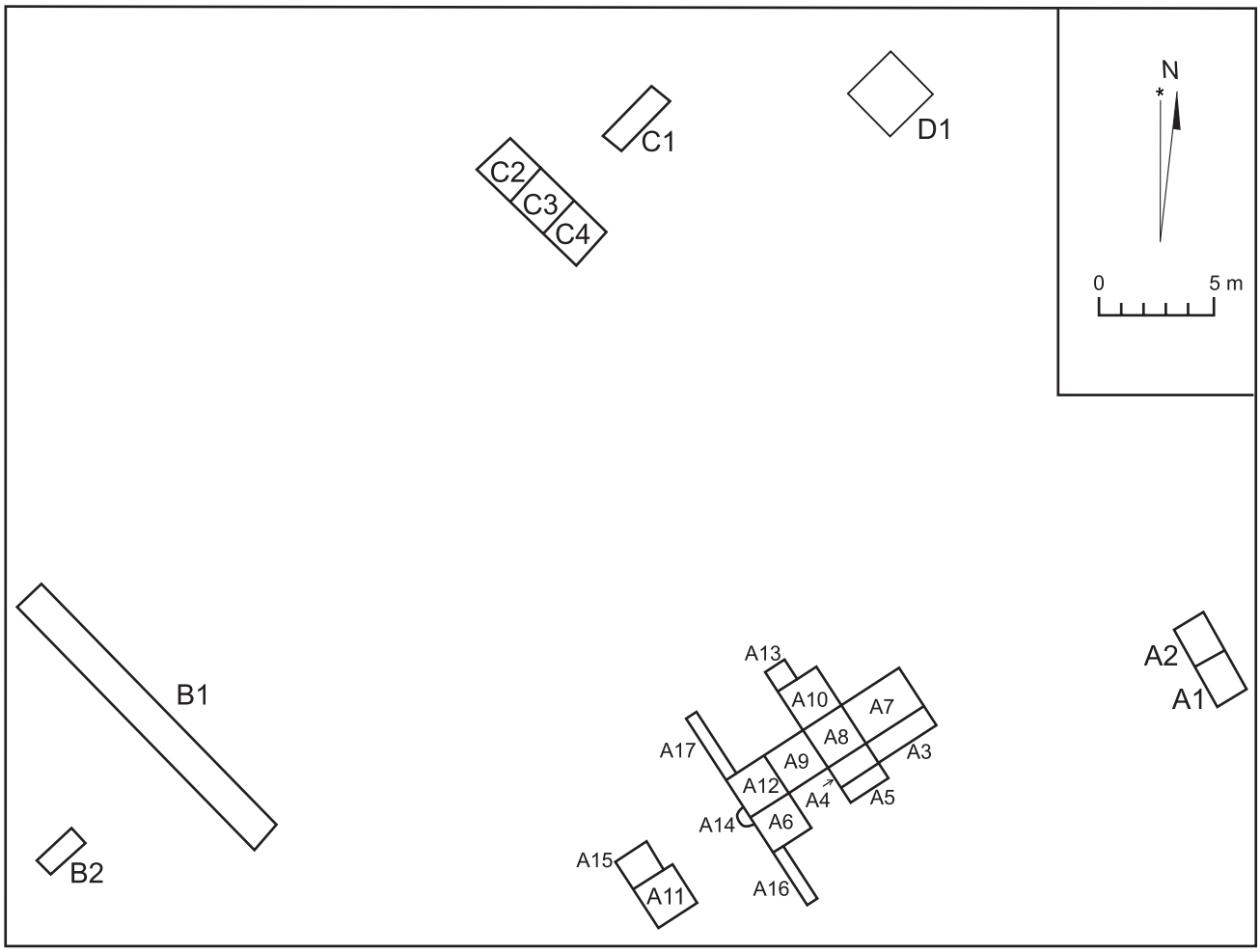

Figure 3.3. Plan showing labels of all units excavated at Tetel, including areas A, B, C, and D.

shown in Figures 3.4 (Tlatempa) and 3.5 (Texoloc). We describe the features by phase.

THE TLATEMPA OCCUPATION

Feature A1

A remnant of what was probably an open-profile pit with deposits 40 cm thick. The original pit was perhaps 1 m in diameter.

Phase. Tlatempa.
Unit. C1.
Lots. 9, 13, 22, 23, superimposed.
Excavator. Hugo Huerta.
Context. A1-1S.
Illustration. Figure 3.4.

Stratigraphy. Early in our excavations, we were looking for an ancient terrace edge and not the lowermost remnant of a pit; we did not identify the pit outline clearly in excavation, although Huerta drew in the contents at several levels. The pit fill was heterogeneous, containing lenses of ash, lime, and charcoal, as well as some large sherds. There was also some rodent disturbance, probably the origin of a Postclassic sherd in Lot 9.

Feature A2 (Platform 1)

A small platform in Area A, 6 m wide in a direction perpendicular to the slope of the hill. It is approximately 5 to 6 m long in the direction of the slope, though on the upslope end it may simply merge into the hill. The platform appears to be formed of artificial additions to a slight natural rise. It is possible that subtractions of earth around the edges enhanced the apparent height of the platform as well. The platform is appropriate in size for the location of a small house made of perishable materials, but we have no definite evidence that any structure ever stood there. Features A10 and A12 penetrate the platform. The latter is the earlier of the two and was filled during Late Tlatempa. We thus date the platform to the Tlatempa phase as well. Feature A12, near the center of the platform, would have been inside any platform-top house.

Phase. Tlatempa.

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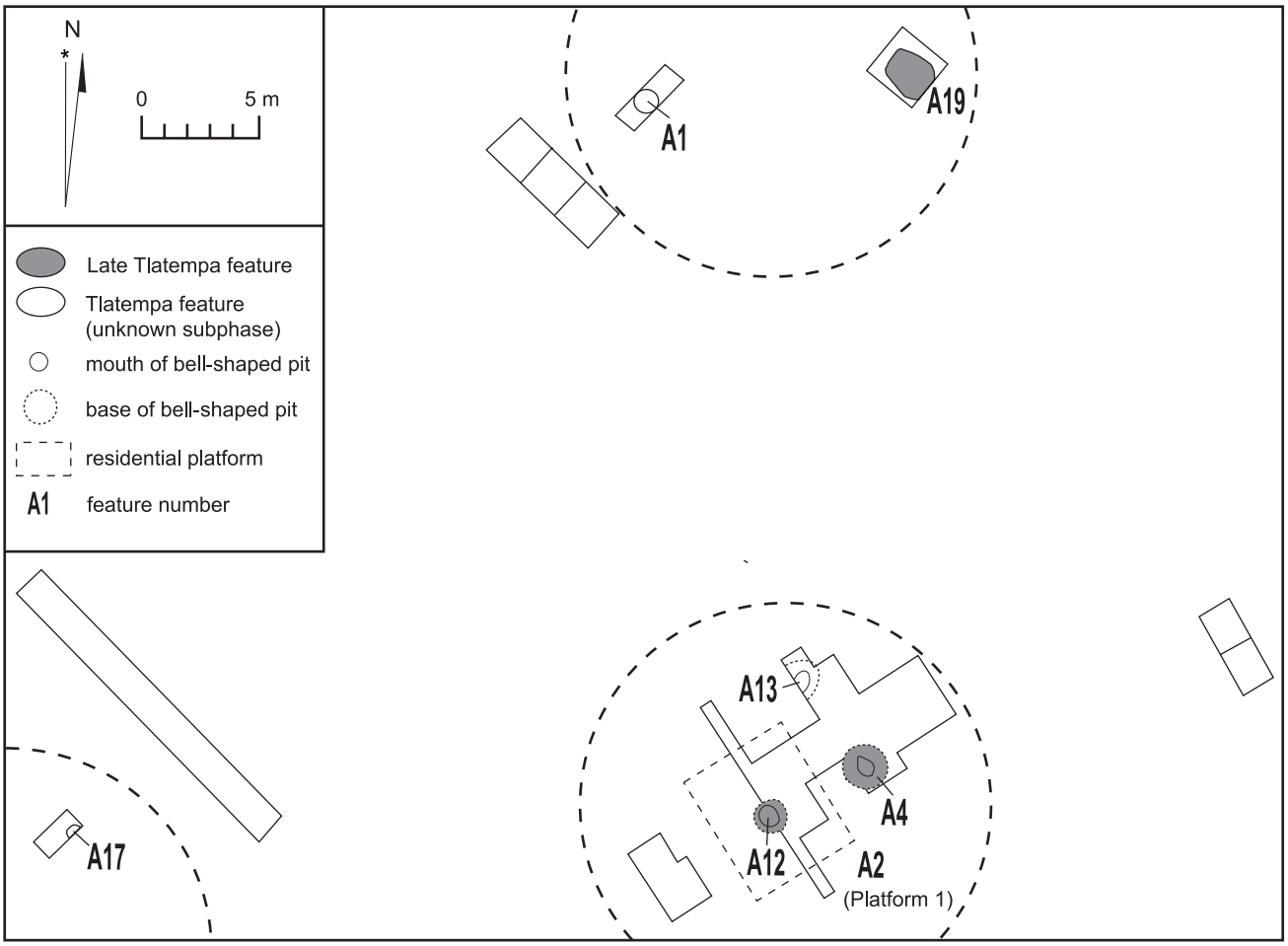

Figure 3.4. Plan of Tetel excavations showing Tlatempa-phase features. Features shaded gray are Late Tlatempa; others are not assignable to subphases. Dashed circles are hypothetical house-yards (see Chapter 2).

Units. A6 and A12 penetrate the platform, while A9, A16, and A17 cut through its edges.

Lots. Lot 132 (A9) was screened and confined to the platform itself; it is the only really acceptable sample we have of platform fill. All other lots are mixed.

Excavators. Richard Lesure and David Carballo.

Context. A2-1P (the platform).

Illustrations. Figures 3.4 and 3.6.

Stratigraphy. The uppermost stratum (A) was a thin humic layer compacted to an almost cement-like quality. Beneath that on the southeastern side of the platform was a 10-to-15-cm-thick layer of compact, sandy clay (10YR 5/3), Stratum B. Strata C and D constitute the main artificial layers composing the platform. Stratum C was a compact clay (10YR 5/4) that broke off the profile in chunks as it dried. It varied from 20 to 30 cm thick. Below it in much of the area covered by the platform was Stratum D, a homogeneous silt, less compact than C and yellowish brown in color (10YR 6/4). Below D was Stratum E, a sterile, light yellowish brown silt. Relatively soft and uncompacted, Stratum D was noticeably easier to dig through than the layers above. At the contact between Stratum E and overlying strata, there were occasional blocks or nodules of very hard sediment. It is possible that these were intentionally placed tepetate blocks, though sometimes we observed such variations of compactness in contexts that appeared to be natural formations. Stratum E we identify as the tepetate-forming natural sediment of the Cerro Santa Ursula slopes. It appears below cultural deposits in all our excavations.

Depositional History: If Stratum E is part of the natural slope of the Cerro Santa Ursula, then there was a slight rise here that was enhanced by platform construction. Sediment quarried from the vicinity of the platform was piled on top. As a result, cultural deposits atop the platform are about 50 cm thick. However, this appears to all be fill. The ancient occupation surface was somewhat higher than the modern surface, especially if we are right in our suspicion that Feature A12 has been partially truncated by erosion (see discussion below).

Feature A4

A large bell-shaped pit at least 140 cm deep and 180 to 200 cm in diameter at the base, with a volume of 1.85 m^3. On

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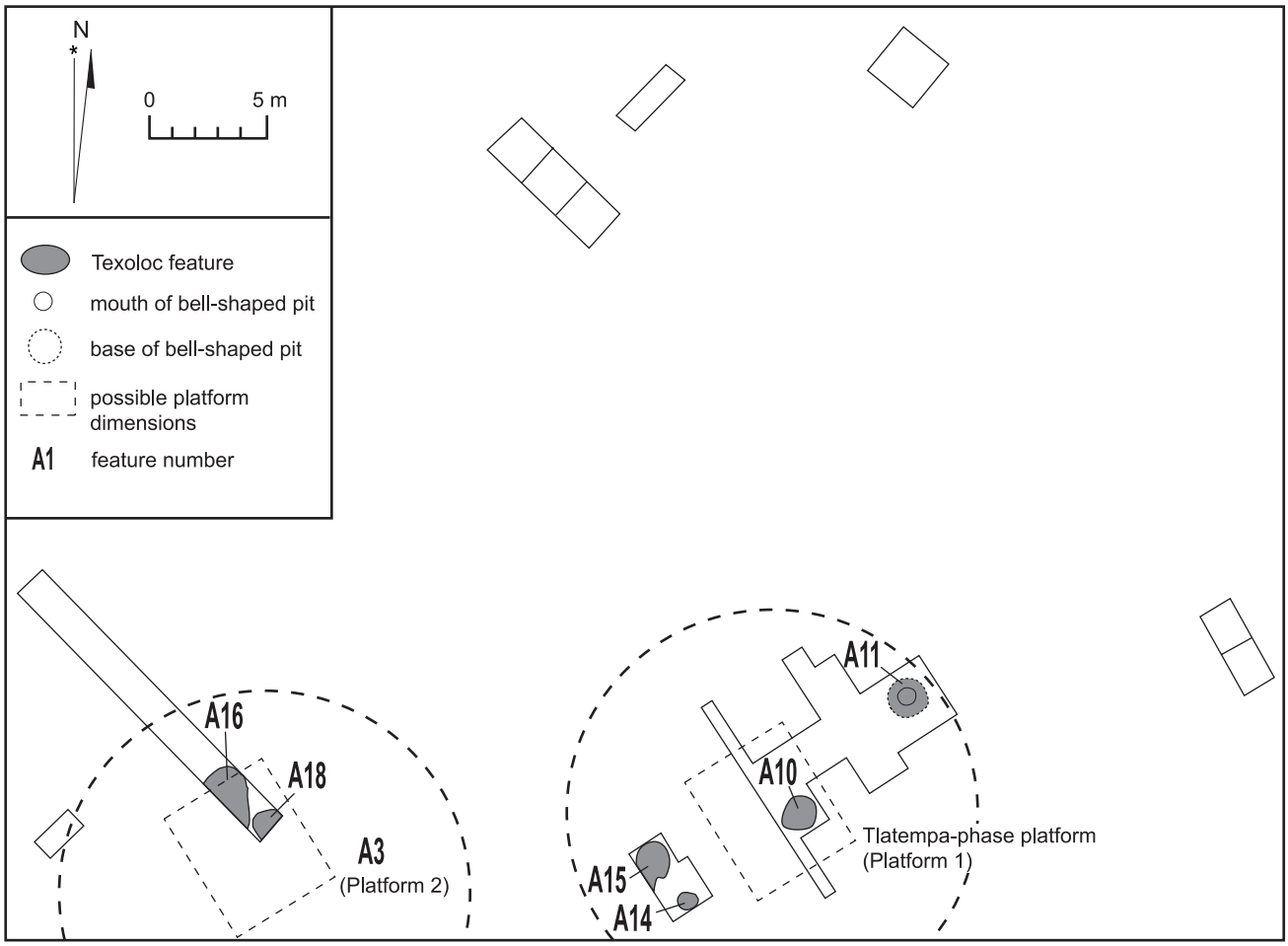

Figure 3.5. Plan of Tetel excavations showing Texoloc-phase features (shaded gray). Dashed circles are hypothetical house-yards (see Chapter 2).

the floor of the pit were rocks probably associated with the storage functions of the pit, as well as a disturbed burial.

Phase. Tlatempa pit; filled in the Late Tlatempa subphase. Phasing supported by two radiocarbon dates.

Units. A4 and A5.

Lots. The pit was sectioned for excavation, yielding two series of lots. The combined sequence is 24/35, 25/36/38, 26/37, 28/39, 29/40/41. Lot 40 represents the densest concentration of bone on the pit floor.

Excavator. David Carballo.

Contexts. A4-1P (the pit), A4-2P (abandonment assemblage of rocks on the pit floor), A4-3B (the burial), A4-4S (contents of strata 4-1, 4-2, and 4-3, minus the burial and large rocks).

Illustrations. Figures 3.4, 3.7, 3.8, 3.9, and 3.10.

Stratigraphy. The uppermost layer of pit fill (Stratum 4-1) was a homogeneous olive brown (2.5Y 4/3) with abundant cultural material (lots 24 and 30; 55 cm thick). Beneath that was a much more heterogeneous series of layers (Stratum 4-2; 70 cm thick). Since they exhibited a conical structure, these had clearly been built up through dumping of debris into the mouth of the pit. Lots 28 and 39 were the lowest, forming a conical mound of loose sediment with pebbles, ashy lenses, and cultural material. Above this was a lens with a higher ash content as well as lime (lots 26 and 37). Last deposited were lots 25, 36, and 38, capping 26–37 and filling down along the edges of the pit away from the mouth of the feature. These layers were composed of lenses varying in color and texture, with rocks and abundant sherds. Particularly in lot 38 we ran into the impressions of some perishable material (Figure 3.10). They appeared as concentrations of very thin hollow tubes (each 1 to 2 mm in diameter) running parallel to each other. They were organized in bunches, with the tubes all oriented the same way in each bunch but with every bunch having a different orientation. We interpret this as small bundles of grass or thin reeds—perhaps thatch—cast into the pit and preserved from crushing under the sloping sides of the pit. One other noteworthy feature of the lots sampled for flotation in Stratum 4-2 was a repeatedly high density of burned maize fragments, particularly kernels. These lots together stand out from all others excavated, suggesting that they were deposited at the same time. The thatch bundles suggest architectural destruction debris.

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Richard G. Lesure and David M. Carballo

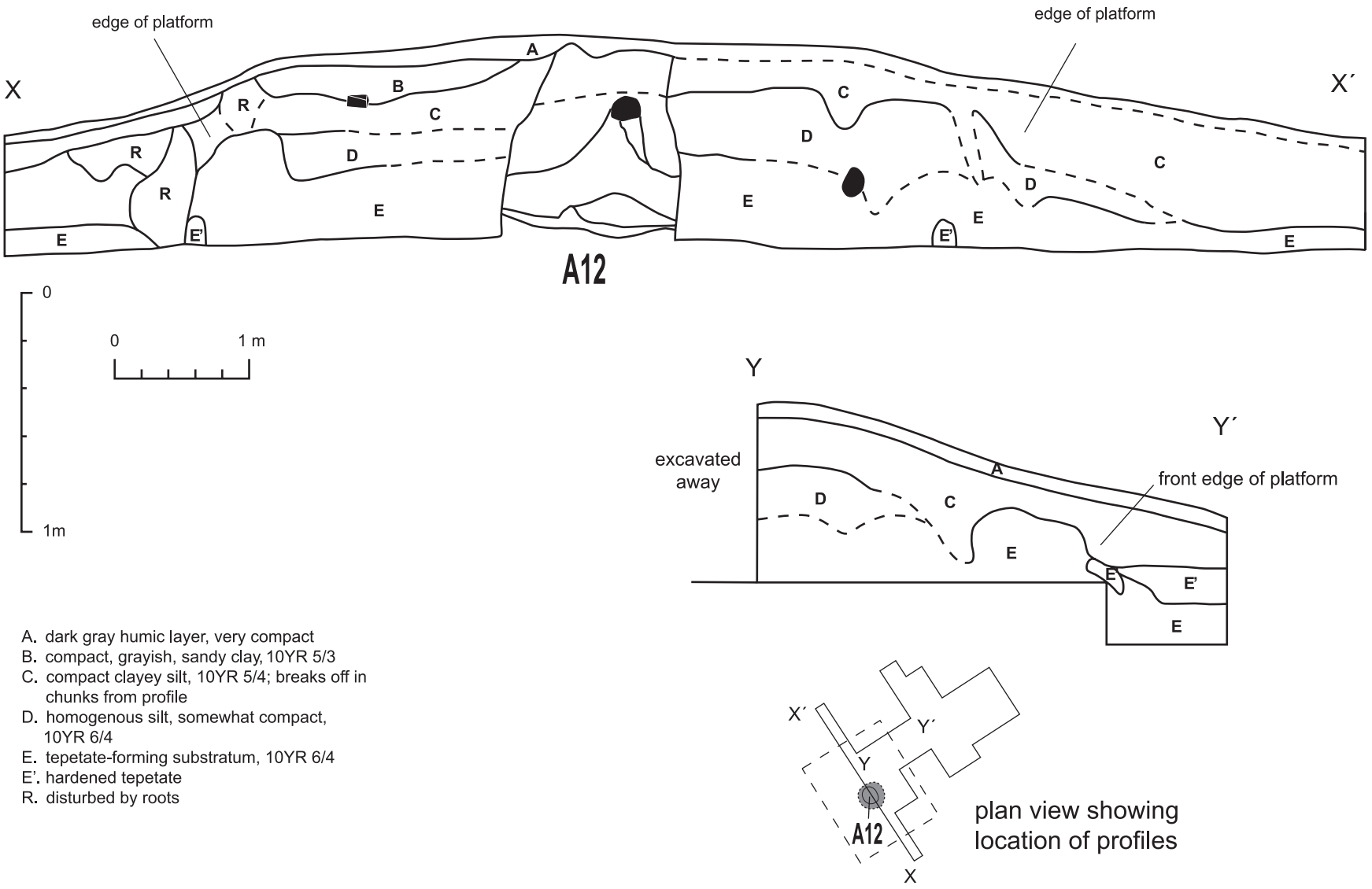

Figure 3.6. Profiles of Platform 1, Tetel. Top: Southwestern profile of units A16, A6, A12, and A17 (X-X'). Middle: Northwestern profile of units A12 and A9 (Y-Y'). Bottom: Plan view showing location of profiles and approximate extent of platform. Note the difference between vertical and horizontal scales.

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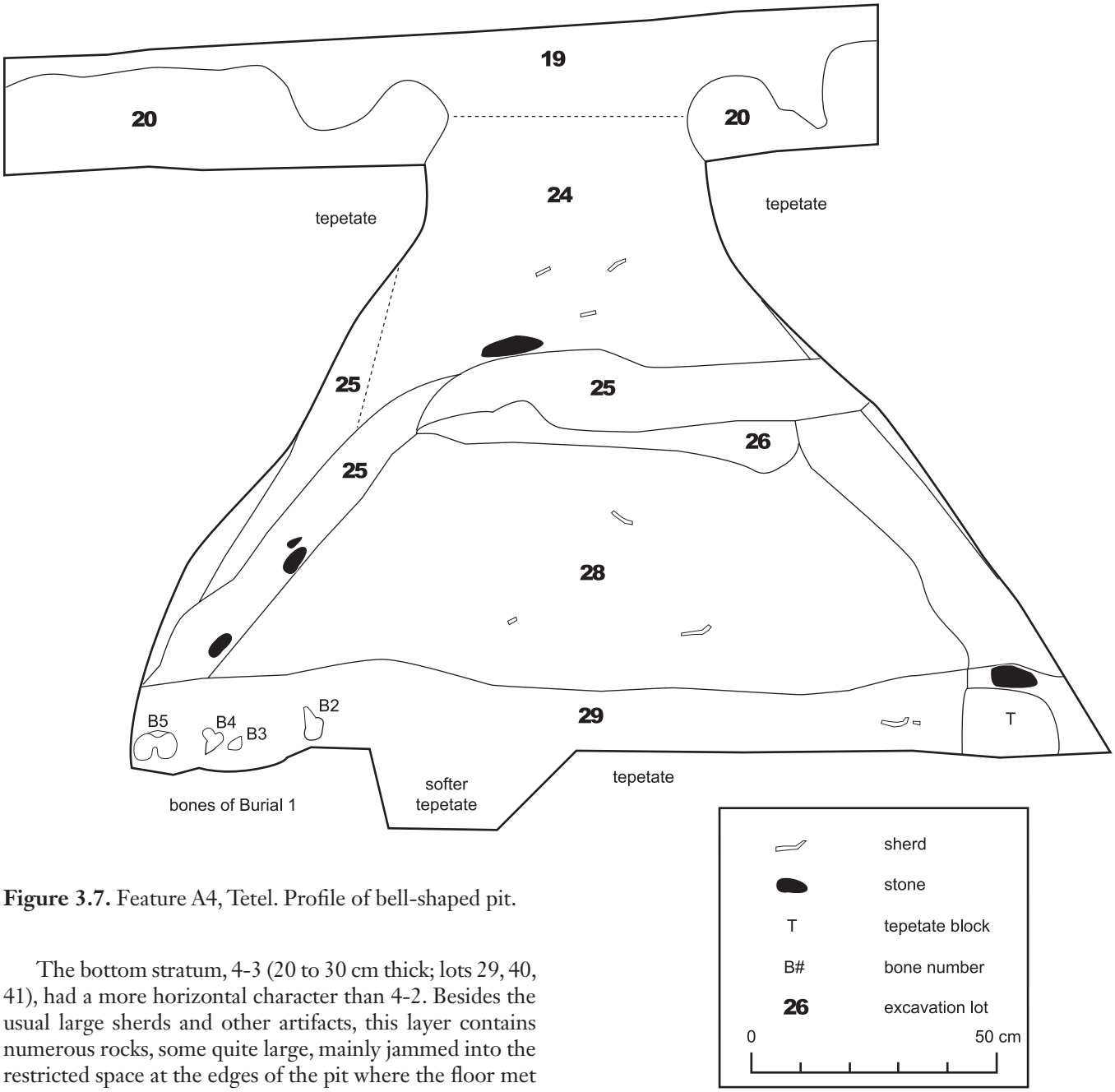

Figure 3.7. Feature A4, Tetel. Profile of bell-shaped pit.

The bottom stratum, 4-3 (20 to 30 cm thick; lots 29, 40, 41), had a more horizontal character than 4-2. Besides the usual large sherds and other artifacts, this layer contains numerous rocks, some quite large, mainly jammed into the restricted space at the edges of the pit where the floor met the sloping walls. (Only some of these were drawn in situ for Figure 3.8.) Also within this layer was a concentration of human bone. No bones were articulated, but there appeared to still be a trace of anatomical order in the overall pattern. Vertebrae and ribs were in one place, leg bones in another, and between those two concentrations was the pelvis. The cranium was missing except for a single tooth, and the shafts of the largest long bones (humeri and femurs) were also gone. Curiously, the epiphyses of the long bones were present; each bore damage indicating that the shafts had been chopped off with a stone tool. Although the bone was concentrated in one area of the pit floor along its eastern edge, a few bones were scattered elsewhere across the floor; others (including a clavicle, a vertebra, hand bones, and the distal end of the right humerus, the last bearing evidence of chopping) appeared above this lowermost layer in lots 28/39.

Depositional History. This pit was one of our more complex in terms of depositional history. We have considered as many scenarios as we could dream up for what actions might have created a bone assemblage such as we found. Most plausible is the following: The pit was originally dug for storage during the Tlatempa phase, with large rocks on the floor probably placed there as part of the storage functions, perhaps to help raise stored foodstuffs off the damp floor. (We found a similar pattern in Feature A13.) When its use for storage ended, the pit was converted into a tomb.

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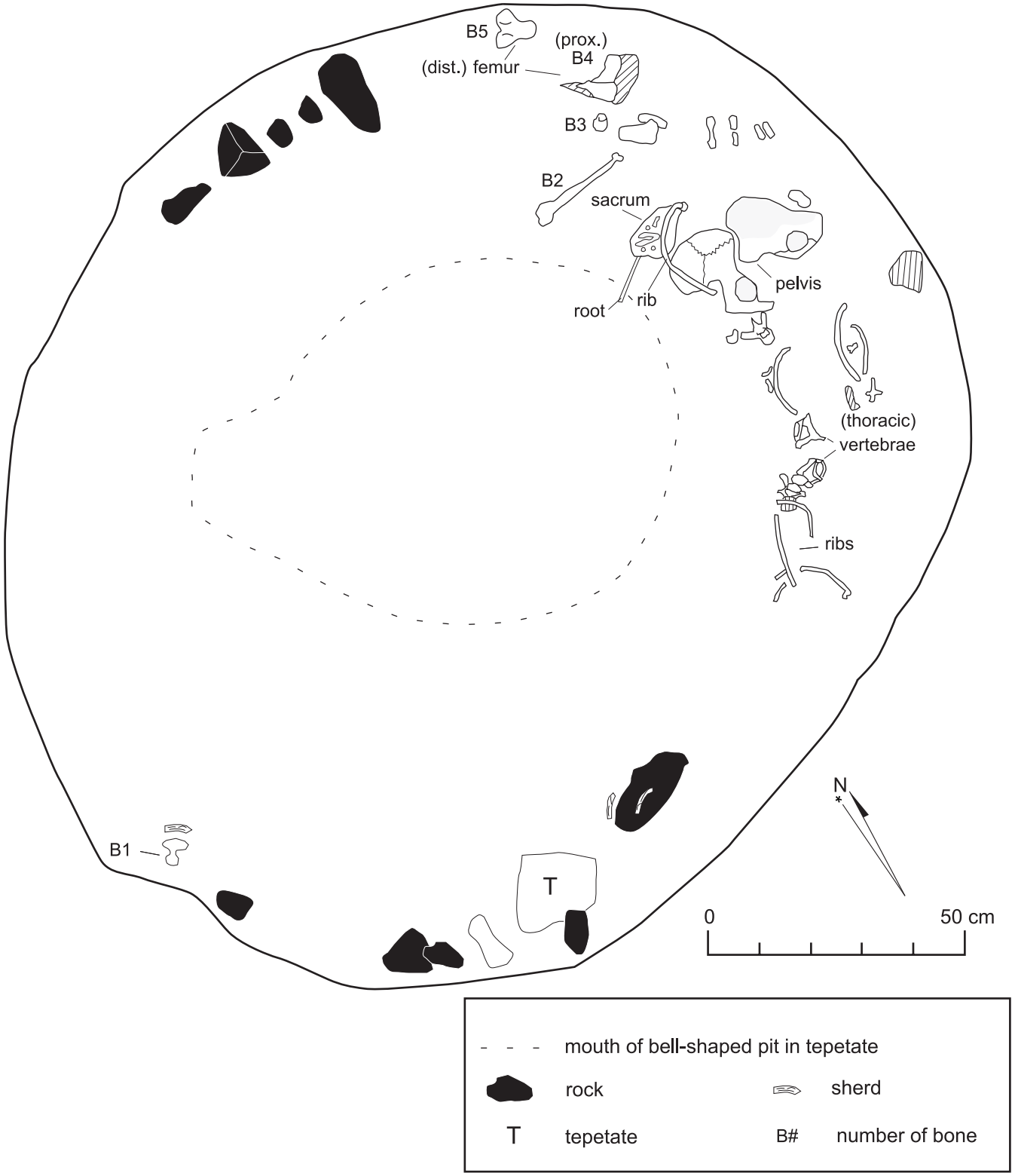

Figure 3.8. Feature A4, Tetel. Plan of floor of bell-shaped pit, showing scatter of human bone.

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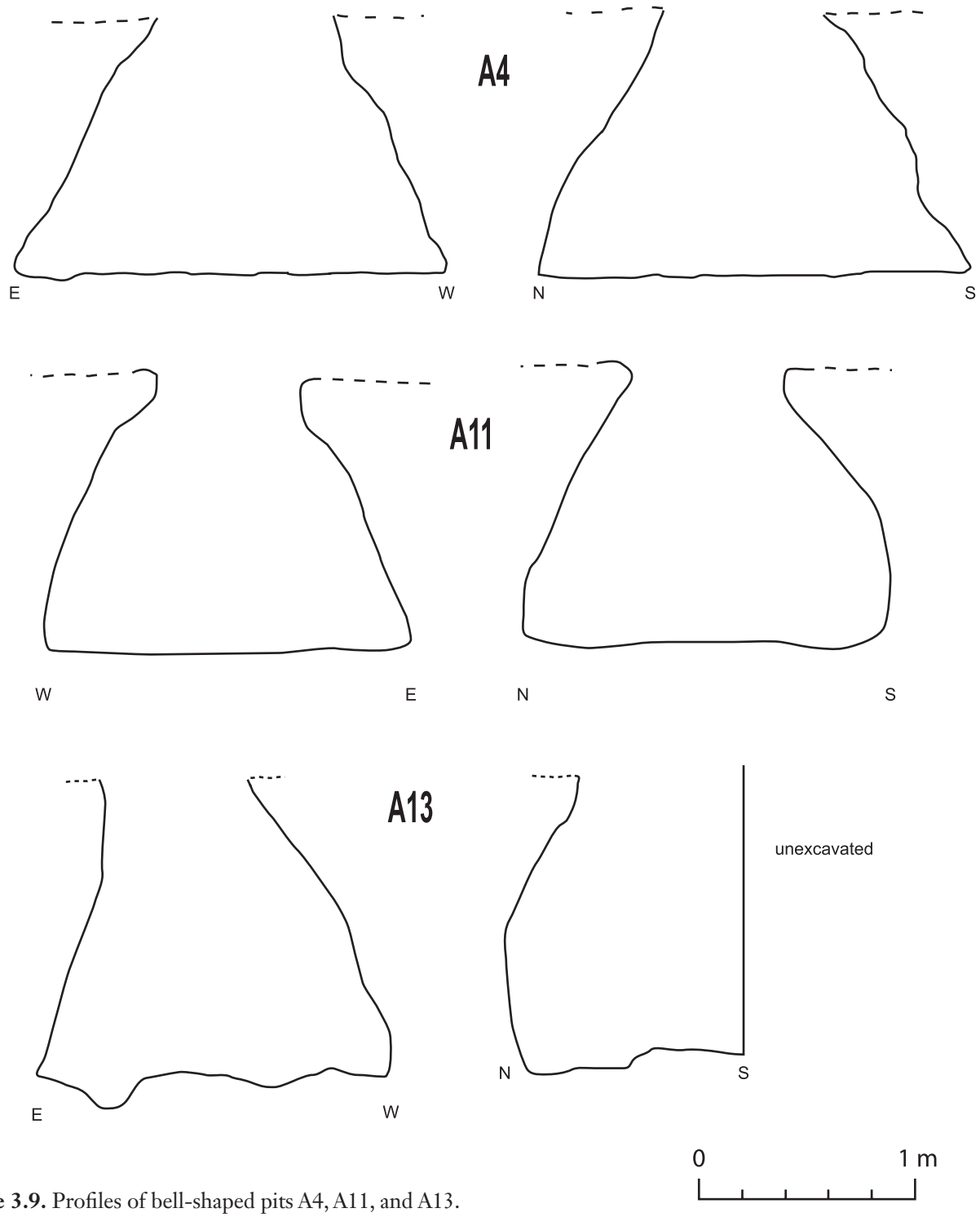

Figure 3.9. Profiles of bell-shaped pits A4, A11, and A13.

A cadaver was placed in the pit, apparently without offerings (although it is possible that subsequent activities disturbed offerings to the extent that they were unrecognizable as such). Some dirt may have been deposited at this time (lots 29 and 41), but the pit was left largely empty, probably sealed by a large rock since, unlike nearby Feature A13, it did not become a trap for small animals.

After the cadaver had been reduced to a skeleton, but still in the Tlatempa phase, someone removed the lid, entered the tomb, separated the shafts of major long bones from the epiphyses, and removed those shafts as well as the cranium (minus a single tooth). Thereafter, filling of the pit began. We suspect that Stratum 4-2 was deposited immediately after the tomb was reentered since a couple of bones from the individual at the bottom appeared in this level. Further, the complex stratigraphy, loose pack-

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Figure 3.10. Feature A4, Tetel. Examples of plant impressions, probably architectural debris of bundles of thatch.

ing along the pit walls, and an anomalously high density of burned maze kernels throughout the different lenses of 4-2 support the idea of rapid deposition. Given the preservation of delicate impressions of plant remains in Lot 38, we suspect that the entire pit was filled to the brim (Stratum 4-1) soon after deposition of Stratum 4-2.

Feature A12

A small bell-shaped pit 65 cm deep and 130 cm across at the base. The original volume was approximately 1.25 m^3. The pit was dug from the surface of Platform 1 and thus allows dating of the platform.

Phase. Tlatempa pit; filled or mostly filled during the Late Tlatempa subphase. An uppermost layer of fill may have been deposited in the Texoloc phase. Phasing is supported by one radiocarbon date.

Units. A6, A12, A14.

Lots. 56 (in A6); 84, 85, 88, and 129 (superimposed, in A12); 93 (unscreened), 94, 95, 96 (superimposed, in A14); 97, an extension to 96 in an area of possible root disturbance.

Excavator. David Carballo.

Contexts. A12-1P (the pit), A12-2S (contents of strata 12-2 and 12-3)

Illustrations: Figures 3.4 and 3.6.

Stratigraphy. Our excavation of Feature A12 was confused by a series of accidents of fate. First the feature was cut into by the Texoloc pit Feature A10. Then it was penetrated by numerous roots. Finally, we discovered it in a corner of the excavation unit (A6) that contained Feature A10 and were slow to recognize it as a feature distinct from A10 and from the matrix of Platform 1. The one bit of luck is that the pit was bisected by the southern profile of units A6 and A12. What remained was excavated in lots 93 to 97. A concentration of sherds immediately above the feature in the disturbed topsoil may once have been the uppermost fill of the feature. This is Stratum 12-1, and it corresponds to lots 84 and 93 (25 cm thick). Stratum 12-2 was well within the boundaries of the pit, but we found those edges hard to distinguish from the surrounding platform fill until we could examine the pit in profile. This stratum had a doughnut-shaped form surrounding the conical Stratum 12-3. Together, strata 12-2 and 12-3 were about 55 cm thick. The matrix of Stratum 12-2 was loose, light olive brown in color (2.5Y 5/3), and penetrated by numerous roots. Lots 56, 85, and 88 correspond to this stratum, and Lot 94 seems to be a mixture of this and the stratum below. The lowermost stratum, 12-3, included multiple sediments in distinct patches, suggesting basket-load dumping. There were ashy lenses (2.5Y 5/3 and 2.5Y 6/2) and in the middle of the pit a deposit of lime (2.5Y 6/1). Lots from the stratum are parts of 94 as well as 95, 96, and 129. The last was disturbed by roots. An additional root disturbance (Lot 97) extended into the profile near the bottom of the pit.

Depositional History. Feature A12 penetrated Platform 1. If there was a house on the platform, this would likely have been a storage pit within the walls of the house. When

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its use for storage ceased, a series of ashy sediments with Tlatempa refuse was dumped into the pit (Stratum 12-3). The contours of the constituent layers, along with the clarity of their boundaries, indicate rapid deposition. Further, the strongly conical form of the Stratum 12-3 sediments suggests a pit with a smaller mouth than we observed; it is thus possible that the original ground surface here was higher than it is today, erosion having removed the uppermost layer from Platform 1. Still in the Tlatempa phase, the pit was filled up with the more homogeneous sediment of Stratum 12-2. It may be that deposition here was slower than in the lowermost stratum. The final deposit of materials, in the uppermost mouth of the original pit or directly above it, may have occurred during the Texoloc phase.

Feature A13

A bell-shaped pit, 1.60 m deep and 1.64 m in diameter at the base. It was not completely excavated, but the original volume is estimated at 1.85 m^3.

Phase. Probably Tlatempa.

Units. A10 and A13.

Lots. 90, 103, 105, 109, 116, 122, 123, 124, superimposed. Lot 123 does not extend across the entire pit.

Excavator. Hugo Huerta.

Contexts. A13-1P (the pit), A13-2P (abandonment assemblage of rocks on the pit floor), A13-3S (contents of strata 13-1 through 13-4).

Illustrations. Figures 3.4, 3.9, and 3.11.

Stratigraphy. The fill of the pit can be divided into four basic strata.The uppermost stratum (13-1) was approximately 30 cm thick (lots 90 and 103). The sediment was compact, was olive brown in color (2.5Y 5/3), and contained numerous rocks, chunks of tepetate, and some artifacts. Stratum 13-2 (lots 105 and 109) contained fewer rocks. The matrix was yellowish brown (10YR 5/4 or 5/3), with varying compactness. Some chunks or patches of earth were quite hard; others much looser. Toward the bottom of Lot 109, beneath two rocks that Huerta notes as of "considerable" size, the first concentrations of animal bone appeared. The rocks were located away from the mouth of the pit, beside the ascending wall.

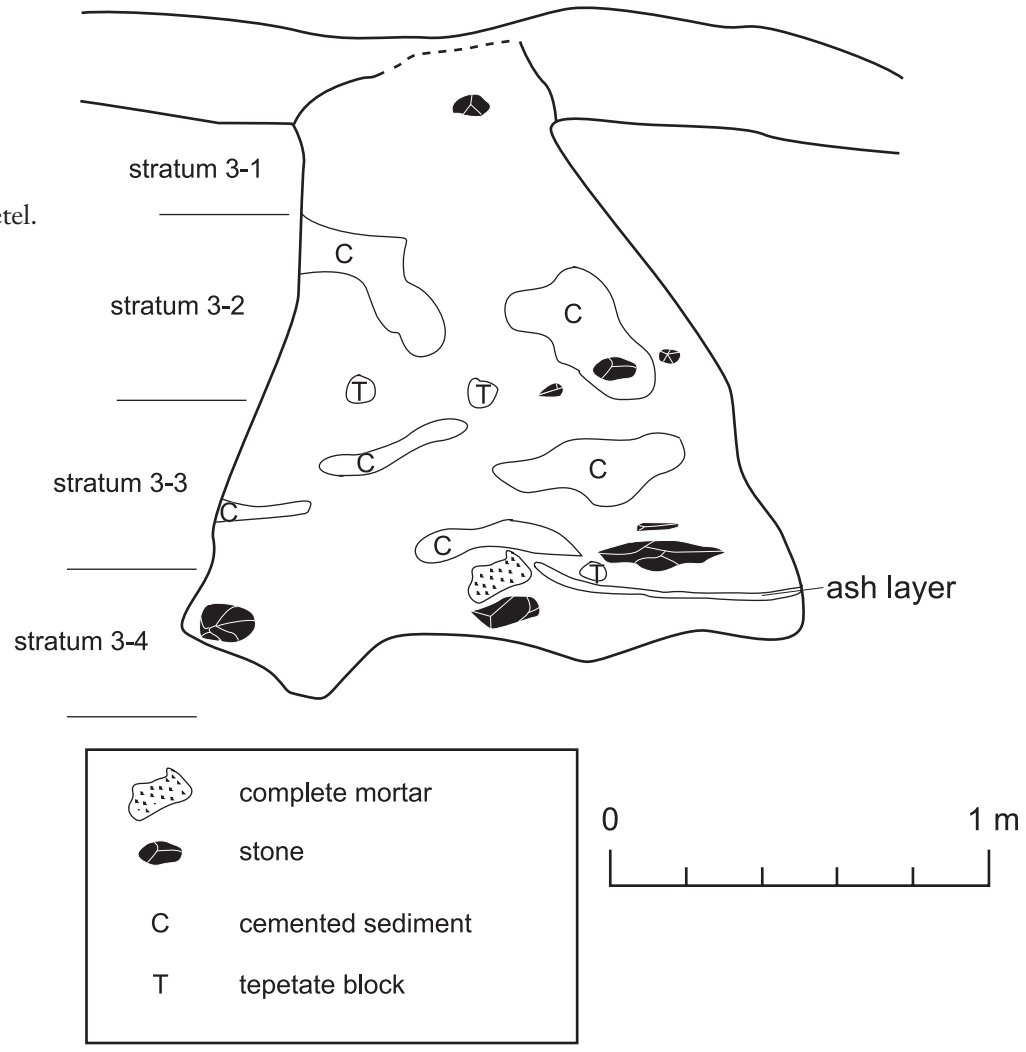

Figure 3.11. Feature A13, Tetel. Profile of bell-shaped pit.

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Stratum 13-3 (lots 116 and 122) was slightly more gray in color (10YR 5/2) than 13-2. It was composed of compact and loose patches like Stratum 13-2, but the zones of compaction had a more horizontal character here (see Figure 3.11). The most notable characteristic of the stratum was the vast quantity of animal bone recovered. The bone appeared in dense patches, much of it cemented together in thin, horizontal layers. The bones were of small animals (mainly juvenile rabbits), and in some cases it was possible to identify articulated carcasses or partial carcasses. In Lot 116, concentrations of bone appeared in the northern part of the pit. In Lot 122, concentrations were noted in the northern, eastern, and western parts of the pit. Very little in the way of cultural material appeared in these two lots, though there were some rocks in Lot 122, and Huerta notes that there was some charcoal and bits of burned earth in Lot 116. Much of the bone in Lot 122 was concentrated at the very bottom of the lot, resting atop a thin ashy layer (Lot 123) that appeared in the northern and eastern parts of the pit. Also, toward the bottom of Lot 122, numerous rocks appeared across the unit. These seem to be part of Stratum 13-4.

Stratum 13-4 (lots 123 and 124) is the lowermost pit fill. Lot 123 was a thin ashy layer sandwiched between 122 and 124 in about half the pit. Lot 124 was grayish brown in color and contained numerous rocks, some quite large and some resting on the floor of the pit. Near the center of the pit was a complete tripod, round metate, or virtually unused mortar, upside down. It appears in profile in Figure 3.11, in fill somewhat above the pit floor but underlying the Lot 123 ash. There were distinctly more artifacts in Stratum 13-4 than in Stratum 13-3.

Depositional History. The pit was presumably originally excavated for the storage of foodstuffs. Upon abandonment, it was not filled with refuse as were other such pits at Tetel. Instead it apparently sat open for a considerable time, becoming a trap for unsuspecting animals that fell in and were unable to escape.

The lowermost stratum (13-4) seems to represent an abandonment assemblage. It contained some secondary (dumped or discarded) materials, including the complete mortar, topped off with the ash dump of Lot 123. The mortar might plausibly be regarded as an offering, but we have no other cases of such deposits and treat it as discard here. Some of the rocks in Lot 124 may have been dropped in at abandonment, but because they were scattered across the floor, with many against the very edges of the pit against the inward-slanting walls, we suspect that they are in primary contexts as in Feature A4, where they were used as part of the storage functions of the pit, perhaps to help raise the contents up off a humid floor. Stratum 13-3 derives from accumulation during the time the pit stood open and abandoned. At some point purposeful filling was renewed. Strata 13-2 and 13-1 probably both derive from such dumping activities.

The date of abandonment of the storage pit cannot be definitively fixed. The few diagnostic artifacts from the pit are all Tlatempa. On that basis we argue for abandonment during that phase.

Feature A17

An intact remnant of a subsurface feature, probably a large shallow pit eroded down to a remnant 7 to 20 cm thick. See Amomoloc Feature A47 for a better-preserved example.

Phase. Probably Tlatempa pit and fill, though there were some Texoloc sherds in the surface pickup.

Unit. B2.

Lots. 111 (surface collection, unscreened) overlying superimposed screened lots 117 and 120.

Excavators. Richard Lesure and David Carballo.

Context. A17-1S (pit contents, all three lots).

Illustration. Figure 3.4.

Stratigraphy. Our 2-x-1-m excavation unit revealed only part of what was probably a large, amorphous shallow pit. After we concluded that only a thin basal layer remained, we ended our explorations in this area. The intact layer was semicompact and dark grayish brown to olive brown in color (2.5Y 4/2–4/3). It contained domestic refuse as well as some burned deer bone beside several rocks.

Depositional History. The pit is too poorly preserved to infer much concerning its history.

Feature A19

An intact remnant of a subsurface pit feature filled with refuse. We suspect that at least 50 cm and possibly 1 m or more of pit deposits are lost to erosion and plowing.

Phase. Tlatempa pit; probably filled in the Late Tlatempa subphase

Unit. D1.

Lots. 121 and 127, superimposed, with 126 around edges of the pit

Excavator. Richard Lesure and David Carballo.

Context. A19-1S (pit contents, all three lots).

Illustration. Figure 3.4.

Stratigraphy. This was probably a thin remnant of what was once a much deeper pit. The deposits are of stratigraphic interest primarily for what is missing and the consequent implications concerning the ground surface during the Formative. (See the general discussion of excavations, above.)

SPECULATIVE SCENARIO RELATING PLATFORM 1 TO FEATURES A4 AND A13

Platform 1 can be dated to the Tlatempa phase since it is penetrated by Feature A12. We have already suggested that a house stood atop the platform and argued that Feature A4 and Feature A13 also date to the Tlatempa phase. Taking into consideration the proximity of features A4 and A13 to

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the hypothesized house, we would further argue that the use of the features overlapped with that of the house. In other words, the features were part of a yard or activity area surrounding the house (Figure 3.4).

While all that is admittedly a chain of speculation, if one is willing to go that far, an intriguing window on past activities is opened up. Both features A4 and A13 have unusual depositional histories. That of Feature A13 is unique among the bell-shaped pits of our village sites, though Feature B39 at Laguna may be somewhat similar. The Tetel pit stood abandoned and open long enough to become a deathtrap for numerous small animals. That depositional history of the feature would seem to have implications for the occupation history of any associated house. Since rabbits would not have approached an occupied house regularly enough to die in such numbers (or would have been eaten if they had!), the depositional history of Feature A13 implies a period of abandonment also for any house atop Platform 1.

Feature A4 adds to the picture. A human corpse was placed in the bottom of the abandoned storage pit and the pit was not filled but was covered, perhaps with a rock over its mouth. It thus became an ad hoc tomb. Subsequently, someone reentered the pit, partially disturbed the bones, and removed several pieces. Soon thereafter, a large amount of debris was dumped into the pit. This debris was itself unusual in certain respects, particularly in the high density of carbonized maize fragments and what we suggest were bundles of reeds or grass removed from the house. It seems possible that this unusual fill was associated with the partial destruction and abandonment of a house atop Platform 1. We would propose that the "tomb" was reentered for removal of symbolically important fragments (cranium, long bone shafts) of a household ancestor for transport to a new location. Feature A4 was filled in to cover the remaining bones, while Feature A13, with no burial inside, was left open.

THE TEXOLOC OCCUPATION

Feature A3 (Platform 2)

A platform tentatively identified by Lesure in Area B during analysis of stratigraphic drawings after completion of excavations. The original platform was about 40 cm high. Its horizontal extent is unknown since our excavation penetrated only one corner, but we suspect it was similar in size to Platform 1. It could have been a house platform, but we have no definite evidence of a structure. Texoloc pit features A16 and A18 penetrated the platform.

Phase. Tlatempa or Texoloc.

Unit. Eastern end of B1.

Lot. A small amount of platform fill was removed as Lot 78 (unscreened) but was mixed with materials from, among other things, features A16 and A18.

Excavators. Richard Lesure and David Carballo.

Context. A3-1P (the platform).

Illustration. Figure 3.12.

Stratigraphy. The platform fill was more compact than the features that penetrated it but was otherwise similar to the upper fill of the features in color and texture. The upper boundaries of the pits penetrating the platform were most clear in the case of Feature A18. One clue that in retrospect prompts Lesure to identify the platform is that, as in the case of features A10 and A12, we had trouble identifying the upper boundaries of features A16 and A18; one of the problems was that we were digging through the fill of Platform 1. Lesure now believes that the problems identifying the upper boundaries of features A16 and A18 were the result of a similar situation: the topsoil in this part of B1 was underlain not by the tepetate-forming substratum but by the fill of Platform 2.

Depositional History. The platform would have been a single artificial layer about 40 cm thick.

Feature A10

An open-profile pit filled with domestic refuse, including, in the uppermost layers, large rocks. It was originally at least 110 cm deep, approximately 170 cm in diameter, and 1.38 m^3 in volume.

Phase. Texoloc pit and fill, supported by two radiocarbon dates.

Unit. A6.

Lots. Lots 48, 49, and 52 (superimposed) contained materials from the pit, though the boundaries of the pit were not yet identified and those lots also passed through fill of Platform 1 and a corner of Feature A12 (Tlatempa). The pit was defined at the bottom of Lot 52 and the following superimposed lots were excavated: 54, 55, 57.

Excavator. David Carballo.

Context. A10-1S (contents, both strata).

Illustrations. Figures 3.5 and 3.13.

Stratigraphy. The uppermost layer of this pit, Stratum 10-1 (30 to 40 cm thick, lots 48, 49, and 52), contained numerous rocks, many of which were basalt flakes (Figure 3.13, bottom). The largest were on the order of 40 x 50 cm. There were also artifacts, including a mano fragment. Unfortunately, we did not identify the rocks as pit fill until the lowermost layer, since sediments in the pit were virtually indistinguishable in color and texture from the matrix into which it was excavated (compact, olive brown 2.5Y 4/3–5/3). That matrix was what we now identify as the fill of Platform 1. There was also a significant amount of root disturbance. Beneath the rocks, the pit outline was identifiable in contrast to the sterile substratum. Also, by this level the cutting of Feature A12 by Feature A10 could be inferred from a variety of clues, though the stratigraphy was not as clear as we would have liked due to root disturbance. Stratum 10-2 (65 to 75 cm thick, lots 54, 55, and 57) was the fill of the pit beneath the rocks, a light olive brown in color (2.5Y 5/4).

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Depositional History. The original pit was dug for unknown purposes on Platform 1, where it disturbed one edge of the long-filled Feature A12. The pit was eventually partially filled with earth and Texoloc refuse (Stratum 10-2). It was then topped off with numerous rocks and more refuse (Stratum 10-1). There were no obvious clues to the length of time involved in the filling of the pit, though the rocks of Stratum 10-1 were probably deposited in one episode.

Feature A11

A large bell-shaped pit, 128 cm deep and 168 cm in diameter at the base, filled with layers of refuse. The volume is approximately 1.85 m^3. There was a poorly preserved deposit of human bone in the uppermost mouth of the pit, immediately beneath the modern ground surface.

Phase. Texoloc pit and fill. We suspect that the human bone concentration in the uppermost layer of the pit is also Texoloc, since there was little later activity at the site.

Unit. A7.

Lots. 66, 67, 71, 72, and 82, superimposed. Lot 66 was a concentration of human bone immediately above the mouth of the pit before the latter could be identified. Lot 60, from a more extensive area surrounding Lot 66, also contained bone, which had probably been disturbed from the concentration.

Excavator. David Carballo.

Contexts. A11-1P (the pit), A11-2S (contents of strata 11-2, 11-3, and 11-4), A11-3B (the burial).

Illustrations. Figures 3.5, 3.9, and 3.14.

Stratigraphy. The uppermost layer of the pit (Stratum 11-1) contained a poorly preserved deposit of human bone. Unfortunately, the bone was only a few centimeters below the modern ground surface in a matrix of almost cement-like hardness and everything about it remains uncertain. Beneath Lot 66, the pit mouth could be identified. The fill from this point down can be assigned to three strata lying relatively horizontal. Stratum 11-2 (lots 67 and 71, 80 cm thick) was a semicompact light yellowish brown and contained a moderate density of refuse. Stratum 11-3 (Lot 72, about 25 cm thick) was darker in color and contained numerous reconstructable vessels and vessel fragments. A large rock appeared in the center of the pit, partially embedded in the underlying stratum. The lowermost stratum, 11-4 (Lot 82, 20 cm thick), was composed of two layers, each about 10 cm thick. First was an ashy lens with some burned rock; then a more compact layer containing pebbles, carbonate concretions, and a few sherds.

Depositional History. Upon abandonment, a storage pit was filled with refuse in several layers. There is no assemblage in primary context on the floor of the pit; the single large rock in upper Stratum 11-4 appears to be part of the fill. We interpret the horizontal stratigraphy as indicating gradual deposition in a number of episodes. Stratum 11-3, in particular, appears to be composed of pure secondary refuse with broken pots dumped directly into the pit. The

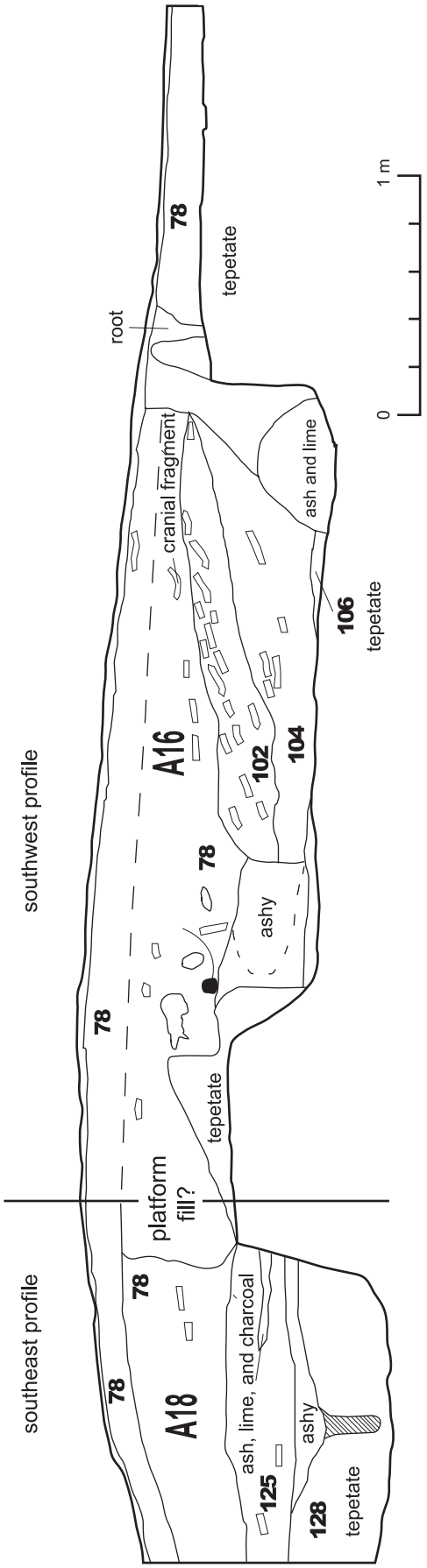

Figure 3.12. Southeastern and southwestern profiles of Unit B1, Tetel, showing Features A16 and A18 and the possible zone of platform fill.

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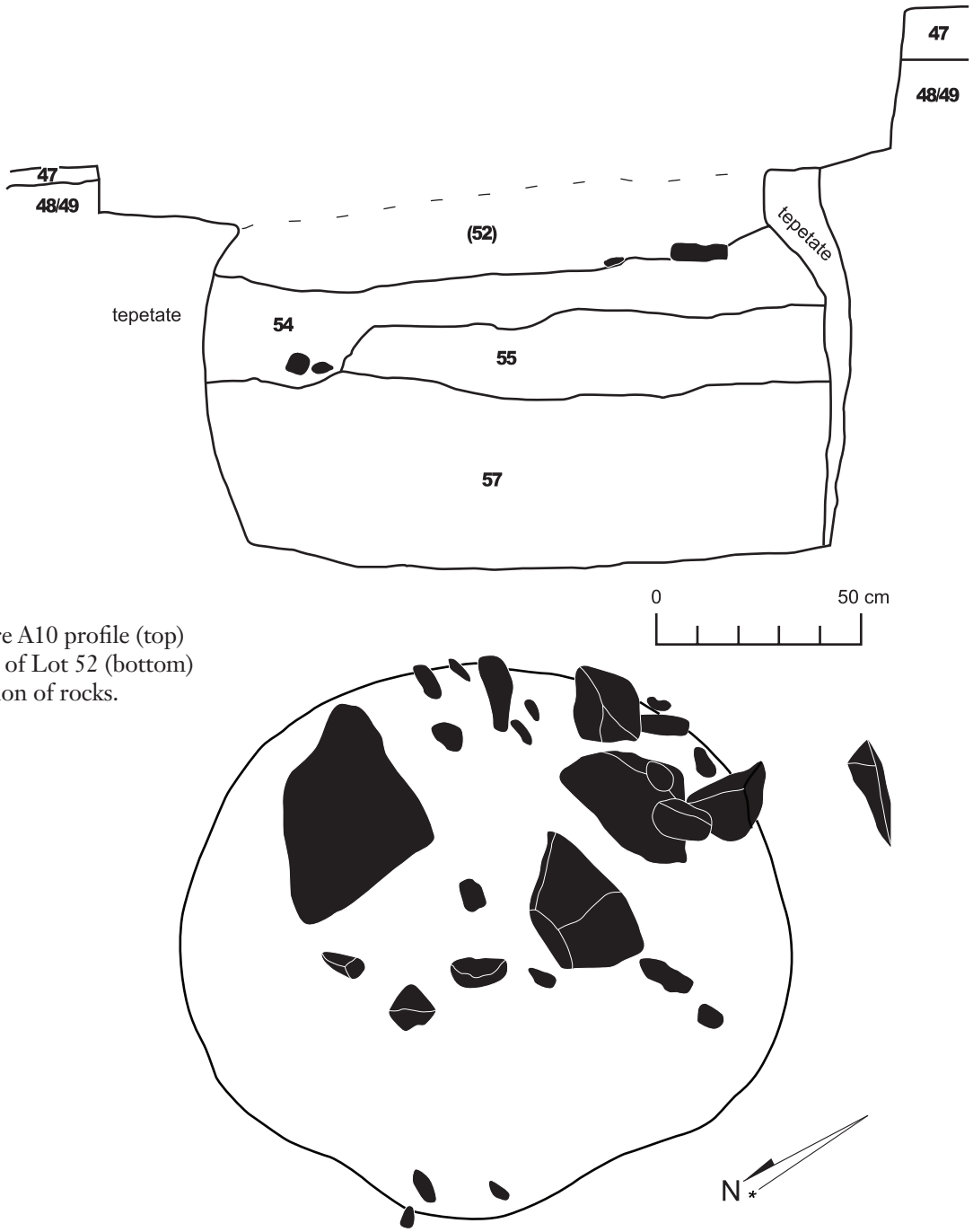

Figure 3.13. Feature A10 profile (top) and plan at the level of Lot 52 (bottom) showing concentration of rocks.

bone concentration in Stratum 11-1 presents challenges due to its poor condition, but we believe it to have been an at least partially articulated burial placed in the pit after it had been filled almost to its brim.

Feature A14

A small but deep (100-cm) open-profile pit filled with domestic refuse. Horizontal dimensions: 108 cm x approximately 70 cm.

Phase. Texoloc pit and fill.

Unit. A11.

Lots. 100 and 101, superimposed. The surface Lot 74 (overlying 100, unscreened) contained a dense concentration of cultural material, most of which probably derives from features A14 and A15.

Excavator. David Carballo.

Context. A14-1S (contents of lots 100 and 101).

Illustrations. Figures 3.5 and 3.15.

Stratigraphy. Underneath the uppermost lot in A11

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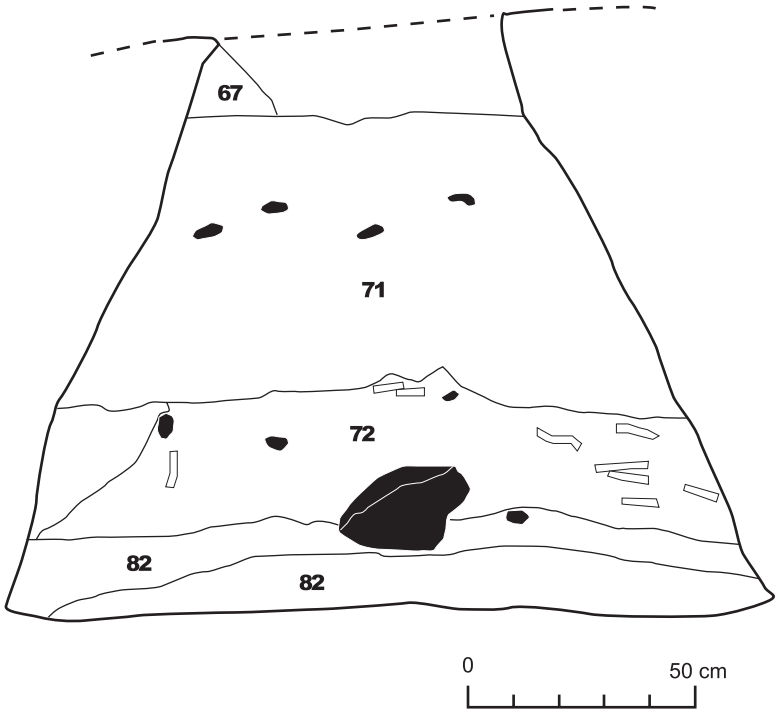

Figure 3.14. Feature A11, Tetel. Profile of bell-shaped pit.

(which contained materials probably part of the fill of Feature A14) were a series of lenses of sediment of varying color, from light to dark yellowish brown. These contained numerous rocks, especially toward the bottom of the pit, and a low density of cultural material.

Depositional History. The original pit, unusually deep given its horizontal extent, was excavated for unknown purposes. Filling of the pit began with deposition of a large rock at the bottom. Then a series of layers of heterogeneous sediment composition, but consistently low numbers of sherds and high numbers of rocks of moderate size, were deposited by dumping materials into the pit. The uppermost layer of pit fill may have been a dense concentration of refuse, but we excavated that in our surface layer before defining the pit.

Feature A15

A shallow open-profile pit containing domestic refuse, 150 cm wide, more than 200 cm long, and 30 to 60 cm deep.

Phase. Texoloc pit; filled in the Texoloc phase. Phasing supported by one radiocarbon date.

Units. A11 and A15.

Lots. 112, 113, 115, superimposed. Lots 74 and 107 were unscreened surface layers that cut through the disturbed upper part of the feature in units A11 and A15, respectively. Lot 108, below 107, can be considered part of the feature. It consisted of a thin layer beneath the topsoil throughout Unit A15, but it went deeper in the northern side of the pit as we sought to define the feature boundary.

Excavator. David Carballo.

Context. A15-1S (contents of lots 108, 112, 113, and 115).

Illustration. Figure 3.5.

Stratigraphy. The upper layer of the pit fill was some compact and yellowish brown (2.5Y 5/3 or 5/4) with a dense concentration of cultural materials (lots 108, 112, 113, and probably 74/107). Below that, in the southwestern part of the pit, was a soft, lighter-colored sediment with less cultural material (Lot 115). The westernmost portion of the pit was disturbed by roots.

Depositional History: The pit was dug for unknown purposes and then filled with sediment and refuse during the Texoloc phase.

Feature A16

A large open-profile pit originally approximately 300 x 200 cm and at least 70 cm deep, filled with domestic refuse. It was disturbed by looters after partial excavation.

Phase. Texoloc pit and fill, possibly with some Tlatempa admixture.

Unit. B1.

Lots. 102, 104, 106, superimposed, though inclined toward the east. Lot 133 is material removed from profile by looters, corresponding to lots 102 and 104. Lot 78 (unscreened topsoil) went deep in this area, penetrating Platform 2 as well as features A16 and A18.

Excavator. David Carballo.

Context. A16-1S (contents of strata 16-2 and 16-3).

Illustrations. Figures 3.5 and 3.12.

Stratigraphy. The surface layer in this area was dis-

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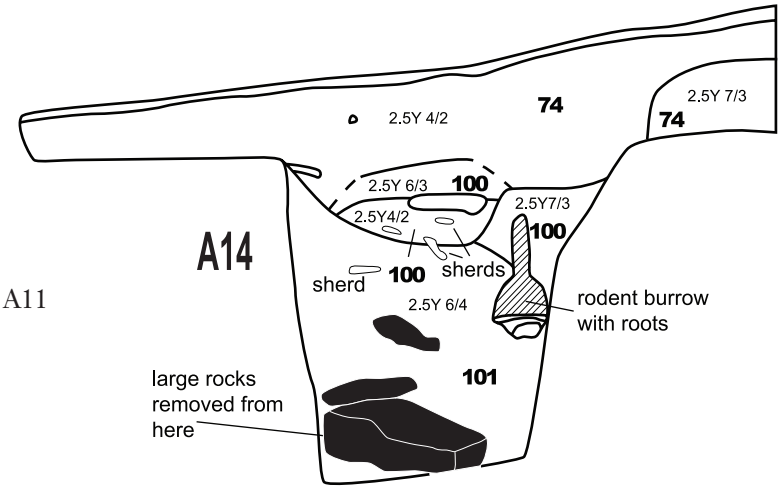

Figure 3.15. Southeastern profile of Unit A11 showing Feature A14.

turbed by roots, and we did not identify the pit until scraping had penetrated it to some degree. The uppermost stratum (16-1, included in topsoil Lot 78) was 15 to 40 cm thick and dark grayish brown (2.5Y 4/2), with cultural material including an isolated piece of probable human bone (lost to looter destruction). This layer was disturbed by roots, and materials from it were collected only in the unscreened Lot 78. Beneath that was a heterogeneous stratum (16-2, lots 102 and 104, 20 to 30 cm thick) containing a variety of sediments with different densities of sherds. In one part of the pit, a layer with many sherds in a soft, ashy matrix was uppermost (Lot 102), but this did not fill the entire pit. Some of the pockets or layers of fill were more compact, and others were ashy and soft. Observations in both profile and plan of the boundaries between layers suggested that these represent materials dumped into the pit relatively rapidly. The lowermost layer (Stratum 16-3, Lot 106, 20 to 40 cm thick) contained rocks, pebbles, lime, possible carbonate concretions, and a few sherds. In the southwest, under an ash layer, Carballo reported possible in situ burning around several fragments of vesicular volcanic rock.

Depositional History. The pit was dug for an unknown purpose. The material was burned in one part of the pit before a series of dumping episodes began. Dumped material included sediment, sherds, pebbles, ash, lime, and some rocks (though no large rocks as in features A10 and A14). We interpret the lowermost stratum (16-2) as deriving from a relatively rapid series of dumping episodes in which the pit was approached from the west. The uppermost stratum (16-1) may have accumulated more slowly.

Feature A18

Part of a deep open-profile pit exposed at the eastern end of unit B1.

Phase. Probably Texoloc based on finds in topsoil; the pit itself contained no diagnostics.

Unit. B1.

Lots. 125 and 128, superimposed. Topsoil, removed as Lot 78, was mixed with material from along the trench.

Excavator. David Carballo.

Context. A18-1S (contents of lots 125 and 128).

Illustrations. Figures 3.5 and 3.12.

Stratigraphy. The pit penetrated one edge of what Lesure now identifies as a possible platform (Platform 2), prompting difficulties identifying pit edges. Stratum 18-1 (2.5Y 5/3 to 4/3), 20 to 40 cm thick, contained some cultural materials. It was removed as part of the topsoil Lot 78. The pit was identified beneath Stratum 18-1. Stratum 18-2 (lots 125 and 128, 50 to 70 cm thick) was composed of horizontal layers with some cultural material, including thin lenses of ash.

Depositional History. The pit was dug through one edge of Platform 2 for unknown purposes and was filled with refuse in several depositional episodes.

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CHAPTER 4

Las Mesitas

Jennifer Carballo and David M. Carballo

LAS MESITAS IS THE site of a dispersed Late Formative community. The features we excavated may all derive from the activities of a single farmstead, occupied for no more than a few generations during the Texoloc phase. Our investigations demonstrated that relatively isolated households in the region were active participants in the contemporary ideological/stylistic and economic exchange networks transpiring around them—evidenced in several classes of artifacts, including ceramics, figurines, and obsidian. These issues will be more fully addressed in the materials analyses chapters of subsequent volumes. Here we focus on the archaeological contexts uncovered by the excavations.

Las Mesitas is located approximately 1 km southeast of the modern town of Las Mesas, just north of Federal Highway 136, connecting Apizaco and Calpulalpan, and within the municipality of Xaltocan (Figure 1.1). Initially we believed we were excavating García Cook's site T-86, identified as having a Formative and Classic occupation (García Cook 1972a:figures 2 and 3; García Cook and Merino Carrión 1989), which corresponds to site E14B33-080 (Las Mesas) in INAH's Public Registry of Monuments and Archaeological Zones (*Atlas Arqueológico*). After further surface walking and more precise UTM readings, however, we decided that the area we excavated was some 800 m south of Las Mesas proper. (The brief surface study suggested Postclassic rather than Formative occupation.) Thus we designated the site we excavated Las Mesitas; we refer to it as TLX-80A in reports and on labeled artifacts.

It is possible that Snow (1966) registered the Formative occupation we are calling Las Mesitas as Site 9 (Tlaxcantitla) in his survey. The site he named Las Mesas (Site 7) was recorded as a Postclassic occupation and likely corresponds to the site registered by INAH as E14B33-080.

In February 2001 we conducted a brief surface study of Las Mesitas, returning in August 2003 for detailed mapping and excavations. The excavations identified 14 Formative features, including six bell-shaped pits, six other pits or concentrations of refuse, and the remains of two possible hearths. All features date to the Texoloc phase.

THE SITE

Las Mesitas is located on a slope above the deeply incised Barranca Xilomantla (Figure 4.1). The site is terraced, with terraces rising approximately 1 m in height. Maguey plants and various low trees and bushes are scattered across the slopes. Several fields outlined by terracing are still used for maize agriculture today, although the landscape in general has greatly suffered from erosion. Portions of the site are covered with little to no topsoil, leaving exposed tepetate and deflated cultural strata. The site has also been disturbed by recent human activities. Within the last 20 years, a small dirt road was bulldozed through its center, cutting downslope toward Barranca Xilomantla and flanked by small drainage canals. A small reservoir (or *jagüey*) was constructed just upslope from the site, and the terracing covering much of the site is related to recent activities rather than Formative agricultural practices.

The road cut exposed Formative features containing abundant household refuse. We cleaned its eroding profiles to document bisected features and to understand nearby stratigraphy. Then we extended horizontal excavations on both sides of the road cut (areas A, D, and F), as well as farther downslope, where erosion revealed additional concentrations of artifacts (Area E). Profiles in two other areas of the site (areas B and C) were also cleaned, documented, and sampled. Through systematically walk-

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ing areas adjoining our excavations, we identified a light scatter of sherds pertaining to the site's boundaries, covering approximately 7 ha.

EXCAVATION AND STRATIGRAPHY

Investigations were undertaken in six areas, designated areas A through F (Figure 4. 2). In areas A, B, C, E, and F, stratigraphic profiles were cleaned and studied to inform excavations. Profiles varied in length and were labeled with an excavation area letter plus a Roman numeral. Profile cleaning was restricted to scraping with trowels to expose fresh surfaces for identifying different strata and/or features.

Horizontal excavations were conducted in areas A, D, E, and F. Excavation units were of various sizes, although

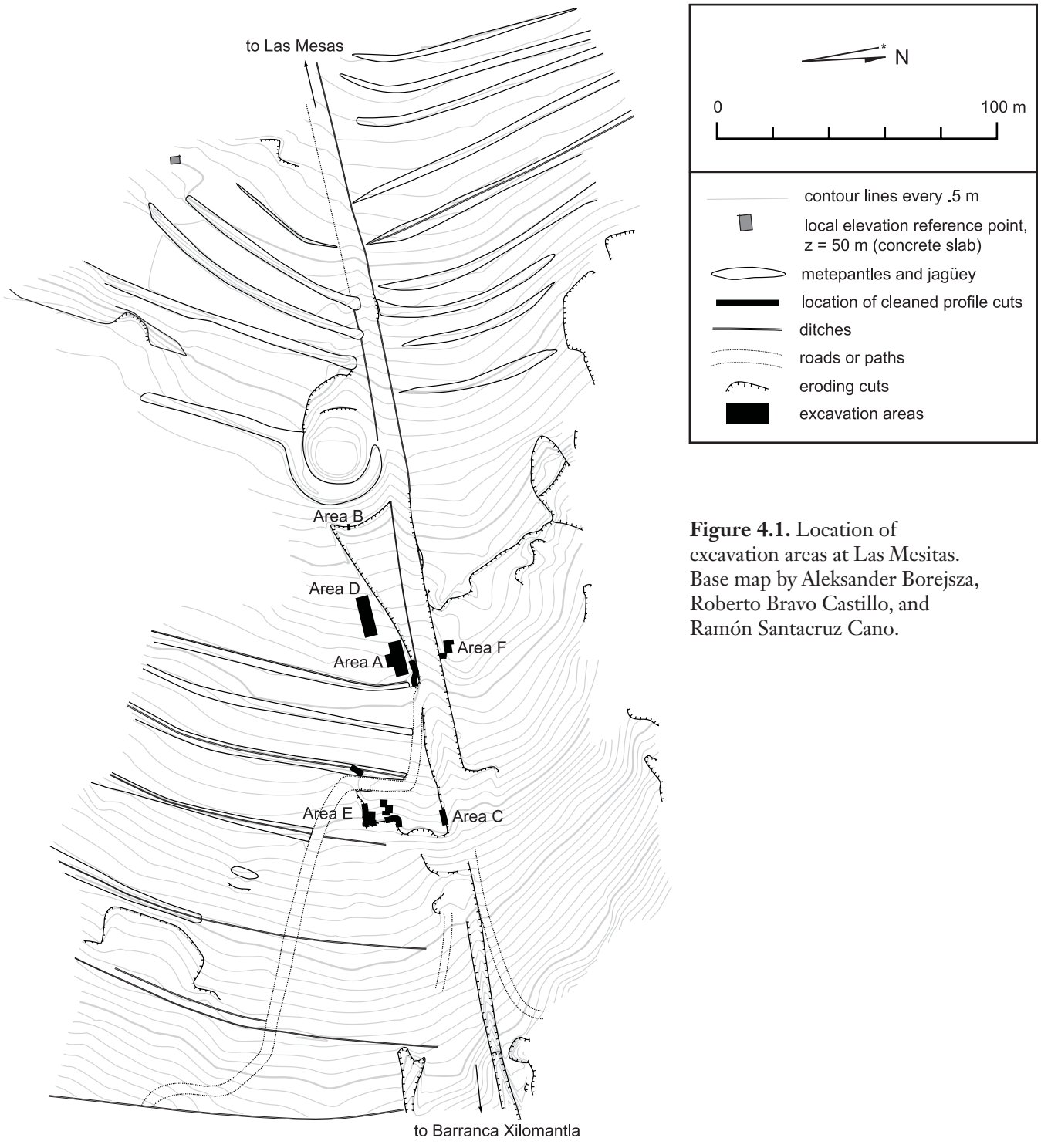

Figure 4.1. Location of excavation areas at Las Mesitas. Base map by Aleksander Borejsza, Roberto Bravo Castillo, and Ramón Santacruz Cano.

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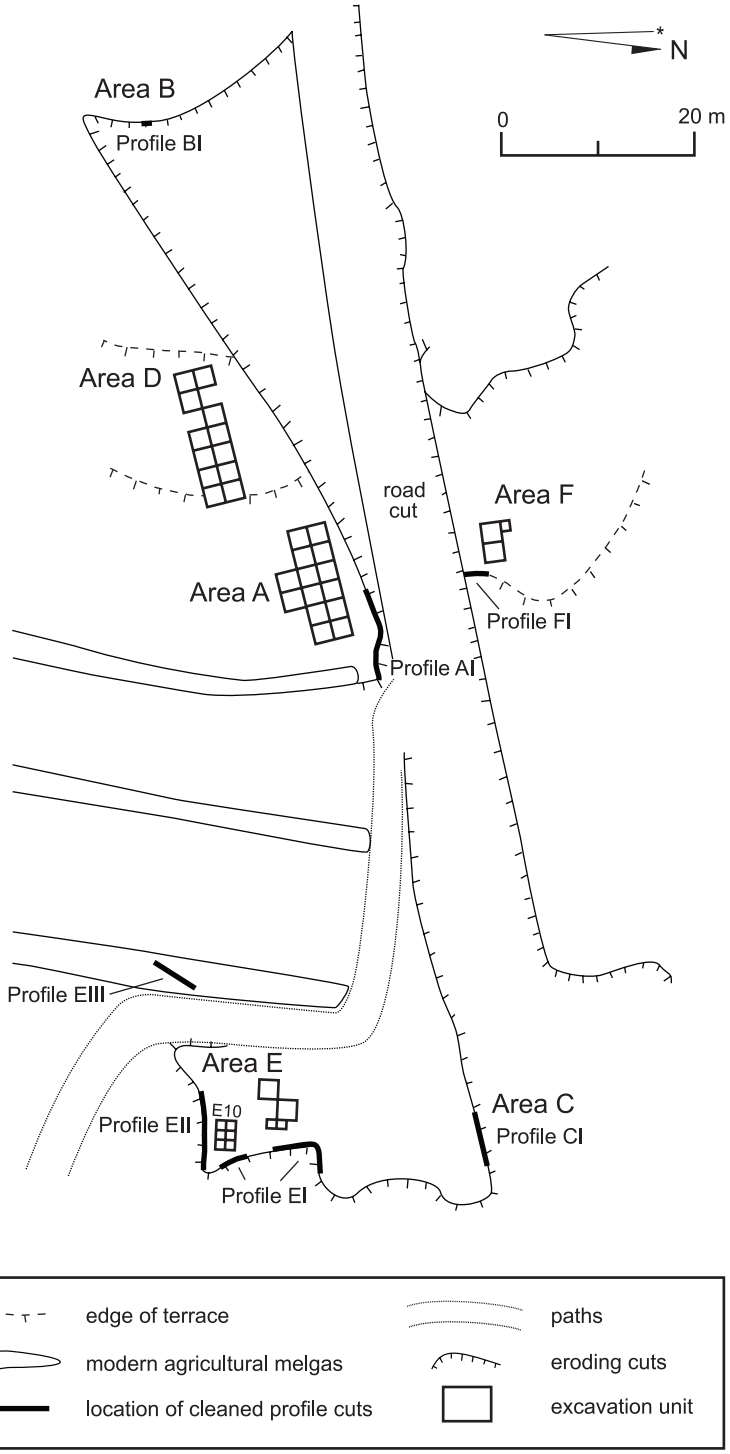

Figure 4.2. Plan showing location of all profiles and units excavated at Las Mesitas.

the majority measured 2 x 2 m. Each unit was labeled with the letter corresponding to its area plus a number. Numbers were assigned sequentially within each area as new units were opened; as in Amomoloc and Tetel, they do not impart information on horizontal relationships between pits. Our system for designating lots (the basic provenience units) and for labeling features and contexts is described in Chapter 1. Lot numbers for Las Mesitas begin at 200 and end at 381.

Area A is located south of the dirt road that cuts through the site; this is where the majority of features recovered during the season were discovered (Figure 4.3) Before any excavations were conducted at the site, 25 m of the southern profile of the road in Area A (designated Profile AI) was cleaned, as this was where the greatest concentration of sherds was recovered during the 2001 surface collections. We hoped to detect the depth of the Formative living surface in profile as well as gain an understanding of the site's stratigraphy before opening any units. The cleaning of Profile AI uncovered two highly eroded pit features

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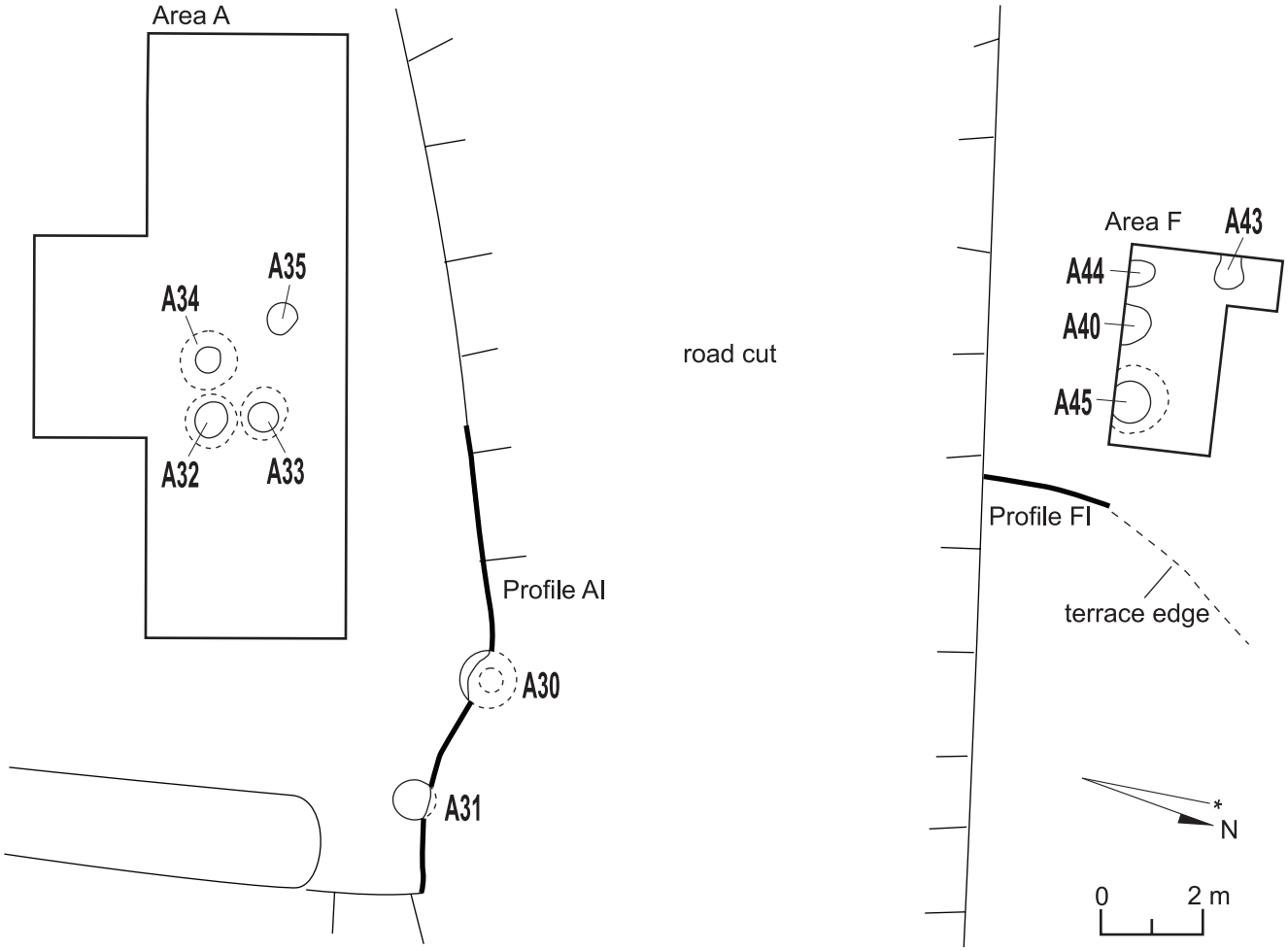

Figure 4.3. Plan of areas A and F, Las Mesitas, showing feature locations.

(features A30 and A31) and three basic sediment layers that appeared in each zone of the site throughout our excavations (Figure 4.4).

Layer I is the uppermost topsoil, about 20 to 30 cm thick. The humic soil has a loose texture, contains large quantities of roots and other organic material, and is dark grayish brown in color. Layer I contains only those pre-Hispanic cultural materials that have eroded out of their primary contexts. We could not find any evidence for a Formative occupation surface within Layer I and conclude that it was deposited sometime after the Formative occupation at Las Mesitas. Layer II is the compact clayey loam deposit below Layer I, about 50 to 70 cm thick and dark yellowish brown in color. It is often hard to differentiate from the lowermost very compact, tepetate-forming duripan layer (Layer III). Both layers II and III are very uniform in texture and appearance. Neither contained cultural materials unless an intrusive pit feature had been dug into the sterile substratum. Thus Profile AI documented that the Formative occupation surface no longer exists in this area of the site and likely has eroded away throughout all areas of the site.

A modern trench, most likely related to recent agricultural activities, was also identified in Profile AI, further supporting the notion that Formative features in this area have been greatly disturbed by erosion and modern activities. The ditch filled in gradually with thin sandy layers of sediment, which did not contain any cultural materials. The ditch was constructed prior to the road cut, as we found its extension to the north of the road in Area F (Unit F1). However, it was constructed in the recent past, since the ditch in Area A is not covered by the topsoil seen throughout the rest of the area.

Excavation units in Area A were located just south of the road cut so we could look for features associated with those found in profile. Four other features, including bell-shaped pits, possible roasting pits or hearths, and one burial (features A32 through A35), were documented. Excavations confirmed the stratigraphy noted in Profile AI, as all features were found below Layer I, within the sterile substratum of Layer II.

Excavating features at Las Mesitas proved to be more difficult than at Amomoloc or Tetel due to the extremely compact sediment both surrounding and within the fea-

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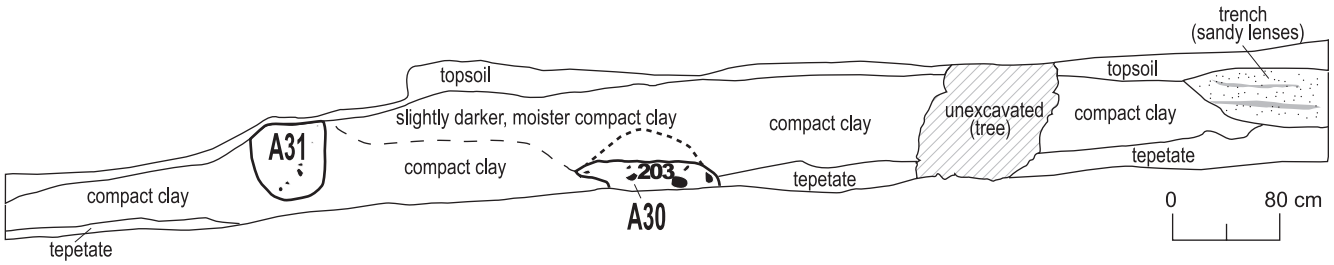

Figure 4.4. Profile AI at Las Mesitas; section where features A30 and A31 are located.

tures. At Amomoloc and Tetel, pit features were dug into compact tepetate but were filled with looser, often fine sediment, making them easy to distinguish from their surrounding compact matrices. At Las Mesitas, pit features were dug into compact clayey layers (layers II and III) but were filled in with clayey sediment very similar to that of the surrounding matrix. Over the centuries following their deposition, the sediments filling these pits have become extremely compacted themselves. They are equally compact as the sediments comprising the walls of the pits and are almost identical in color, making their systematic excavation difficult. Our strategy was to scrape off the top 10 to 20 cm from the modern surface to identify features by locating concentrations of artifacts within Layer II and then to bisect features to determine their form and stratigraphic sequences before fully excavating them.

The investigation of profiles in areas B and C, designated profiles BI and CI, contributed to furthering our understanding of the stratigraphy of the site and the relationship of the terracing to the Formative occupation.

Area D is located 5 m west of Area A and consists of excavation units D1 through D14 (each measuring 2 x 2 m). Although just as much surface area was exposed here as in Area A (56 m^2), only one small concentration of artifacts was found in Area D (Feature A37). The stratigraphy of Area D was very similar to Area A's, and the area's lack of artifacts could potentially be explained by its use for agricultural plots by the Formative inhabitants living in Area A.

Area E is located approximately 40 m east of Area A, near an eroding terrace that has not been cultivated in recent years. Before excavating any units in Area E, we cleaned three different profiles (profiles EI, EII, and EIII) to look for features and examine stratigraphy. While Profile EI contained no features, Profile EII revealed one possible eroded Formative pit. Several artifacts (which were collected as Lot 304) were noted crumbling out of the wall near the southern corner of Profile EII, and a faint dark stain within Layer II supports the interpretation that there was once a pit feature here that was destroyed by erosion, leaving virtually nothing left to excavate. Profile EII also revealed what appeared to be a thin white chalky line at the contact between the Layer I topsoil and Layer II clayey loam. At first we thought this white line might indicate the presence of a Formative floor. We opened units E1, E3, E5, E6, E7, and E8 (each 1 x 1 m) just east of Profile EII to explore this possibility. We soon realized that there were few artifacts on or above the "floor" and decided to excavate the six smaller units as one larger unit (2 x 3 m) designated E10. Once we reached the white layer, it became apparent that it was not a living floor but rather a thin layer of salty residue that formed at the contact between layers I and II possibly due to water accumulation or some other process unrelated to the Formative occupation.

In Profile EIII, located along the simple dirt road that curves down toward Barranca Xilomantla, we discovered the much-eroded base of a bell-shaped pit (Feature A42). The landowner of Las Mesitas informed us that he had found human bone in this area, and it is possible that a burial, now destroyed, was placed at the bottom of the pit. Almost 600 sherds were recovered while we excavated around the remnants of Feature A42, so we may conclude that the pit was once relatively large and had been filled with abundant domestic refuse.

In addition to Unit E10 (the designation for the joining of units E1, E3, E5, E6, E7, and E8), two 2-x-2-m units (units E2 and E4) were opened within Area E. The stratigraphy in these units is consistent with that found in other areas, and the thin white layer found in Unit E10 was not encountered. A concentration of carbon and burned clay, possible evidence of a Formative roasting feature (Feature A38), was discovered in the southeastern wall of Unit E2, located at the contact between layers I and II. Units E9 and E11 (each 1 x 1 m) were opened east and south of E2 to explore Feature A38 further, as well as to see if there were any other associated activity areas nearby. A few ceramics were recovered (fewer than 15 sherds), but no other Formative contexts were uncovered.

Area F is located 15 m north of Area A, on the other side of the dirt road that cuts through the site. This area is slightly higher in elevation than Area A, which led us to hope that its Formative features would be more intact. Unfortunately, Area F appears to have suffered from just as much erosion as Area A. Although Profile FI revealed no features, directly in front of the profile we found a large pile of dirt filled with several rocks, large sherds, and other artifacts that probably were the fill of a recently collapsed Formative feature. All along the road cut similar erosion is observable, including scattered mushroom-shaped ped-

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estals of earth that are rapidly eroding away. During this process of erosion, first the lower clay layer erodes away, followed by the upper topsoil collapsing onto the tepetate-forming layer.

We excavated three units in Area F, designated F1, F2 (each 2 x 2 m), and F3 (1 x 1 m). One bell-shaped pit (Feature A45) was encountered, along with a couple of irregularly shaped concentrations of materials (features A40, A41, and A44) and a possible hearth (Feature A43). The features in Area F are more than 10 m north of the closest features in Area A, and it is difficult to determine whether the features in Area F represent the same household that likely corresponded to Area A or a different one. The situation is not helped by the destructive road cut, which prevents us from ascertaining whether the distribution of features across the two areas is continuous or representative of two discrete clusters.

OVERVIEW OF RESULTS

Excavations at Las Mesitas revealed several refuse-filled features in three different areas of the site. These included bell-shaped storage pits, one of which included a human burial, and pits with open profiles in a variety of shapes and sizes. Las Mesitas appears to have been a dispersed scatter of homesteads. Domestic units were significantly more dispersed than was the case at either Amomoloc or Tetel and likely were separated from each other by cultivated fields. The majority of features discovered by our excavations were located in areas A and F and were probably deposited by the inhabitants of one household, occupied for less than a century during the later Texoloc phase (circa 500–400 B.C.). Additional households may have been located near areas D and E, and surface finds in other locations of the site indicate that occupation at Las Mesitas continued into the Tezoquipan phase.

Pit features at Las Mesitas appear to be different from those found at Amomoloc and Tetel in that the volumes of the bell-shaped pits at Las Mesitas are smaller than those of a similar form at the other two sites (Figure 4.5). None of the bell-shaped pits uncovered at Las Mesitas exceed 1.0 m^3, for example, while several bell-shaped pits at Amomoloc have volumes greater than 2.0 m^3. This difference may suggest differing functions for these types of features at the three sites or could be reflective of a change in the consumption/storage patterns from the Tlatempa phase to the Texoloc phase, yet a more likely explanation is that small households required smaller storage pits than large households.

Although it was not our primary goal in initiating excavations at Las Mesitas, the very rural character of the site (which could be described as a small hamlet or isolated homesteads) provides a potentially interesting point of contrast with Amomoloc and Tetel (both better characterized as villages). They attest to a Formative settlement pattern in central Tlaxcala that included dispersed populations of potentially related individuals living apart from the more nucleated villages, which certainly contained multiple groups of unrelated families. Despite the sites' rural character, the inhabitants of sites such as Las Mesitas appear to have maintained close contacts to larger population centers, allowing them to actively participate in contemporary exchanges in goods and ideas, as will be discussed in subsequent chapters focusing on material analyses.

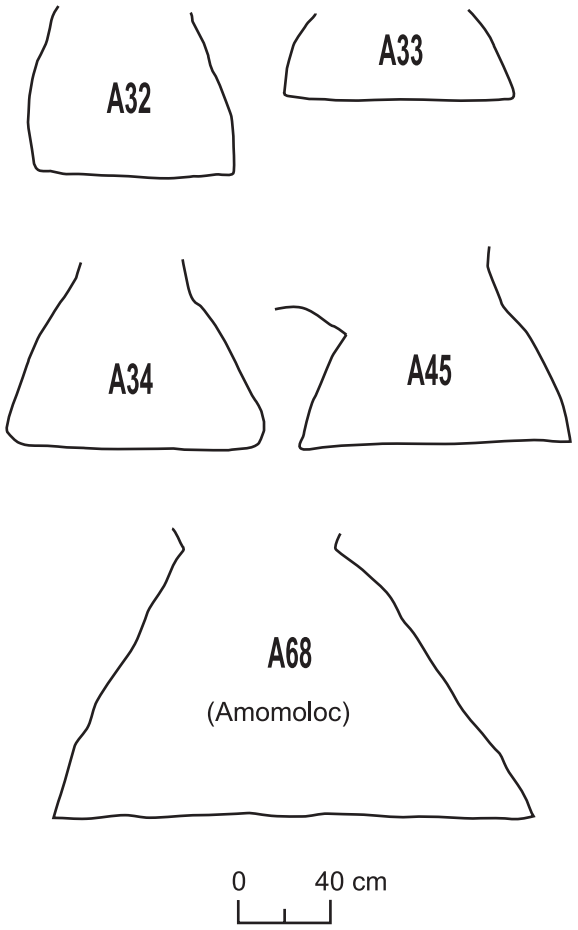

Figure 4.5. Bell-shaped pit profiles at Las Mesitas (features A32, A33, A34, and A45), compared to Feature A68 at Amomoloc. (For more comparisons, see Figures 2.13, 2.21, and 3.9.)

THE TEXOLOC OCCUPATION

Feature A30

A remnant of a bell-shaped pit; only its base remains. Dimensions of excavated portion: 45 cm deep, 1.05 m in diameter at the base. (The original diameter of the pit was probably about 1.10 m.) Volume of excavated portion: .08 m^3.

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Phase. Texoloc pit; filled in Texoloc phase.
Unit. Profile AI.
Lots. 203, 232, superimposed.
Excavators. María Guadalupe Espinosa Rodríguez, Julienne Bernard.
Contexts. A30-1P (the pit), A30-2P (rocks lining the base of the pit), A30-3S (contents of stratum 30-0).
Illustration. Figure 4.4.
Stratigraphy. Due to the almost complete erosion of the pit, we found only one layer remaining near the base of the feature. This layer (Stratum 30-0, lots 203 and 232) contained sherds, carbon, ash, and rocks within a sandy but very compact matrix. Below Stratum 30-0, lining the edge of the base of the pit, are rocks associated with white ash, resting on top of a thin layer of carbon (no more than 5 cm thick). The carbon rests right on top of the clay base of the pit; when we removed the rocks, we could see their impressions in the clay, the result of intense burning within the pit that hardened its clay base.
Depositional History. The pit was likely originally dug for storage, with rocks on the floor placed here as part of its storage function (perhaps to raise stored foodstuffs off the damp floor) or associated with a roasting function (as suggested by the ash and carbon layers). When its use for storage or roasting ended, the pit was converted into a trash pit, in which domestic refuse, particularly broken ceramics, was deposited.

Feature A31

A remnant of a relatively small, open-profile circular pit. Dimensions of excavated portion: 55 cm deep, 55 cm in diameter at the mouth, 30 cm in diameter at the base, .16 m^3 in volume.

Phase. Texoloc pit; filled in the Texoloc phase.
Unit. Profile AI.
Lot. 283.
Excavator. María Guadalupe Espinosa Rodríguez.
Context. A31-1S (contents of Stratum 31-0).
Illustration. Figure 4.4.
Stratigraphy. Only one homogeneous stratum (Stratum 31-0, Lot 283) was identified within the pit. It was sandy and compact, was dark brown in color, and contained sherds, carbon, several pieces of burned earth, and rocks. (Yet none of the rocks were placed along the base of the pit suggestive of storage or roasting functions.)
Depositional History. The pit was originally dug into the compact clayey layer and perhaps filled fairly soon thereafter with domestic refuse. The homogeneity of the fill layer suggests that it may represent a single deposit.

Feature A32

A bell-shaped pit, measuring 65 cm in diameter at its mouth, 1.03 m in diameter at its base, extending 75 cm deep, with a volume of .70 m^3.
Phase. Texoloc pit; filled in the Texoloc phase.
Unit. A5.
Lots. 236, 237, 241, 250, 251, 265, 269, 278, 280, 281. Note that Lot 241 is a mixed context; it includes portions of the clayey matrix that Feature A32 was dug into. As the matrix is culturally sterile, it should not affect material analyses.
Excavator. David Carballo.
Contexts. A32-1P (the pit), A32-2S (contents of strata 32-1 and 32-2).
Illustration. Figure 4.6.
Stratigraphy. The uppermost layer, associated with the

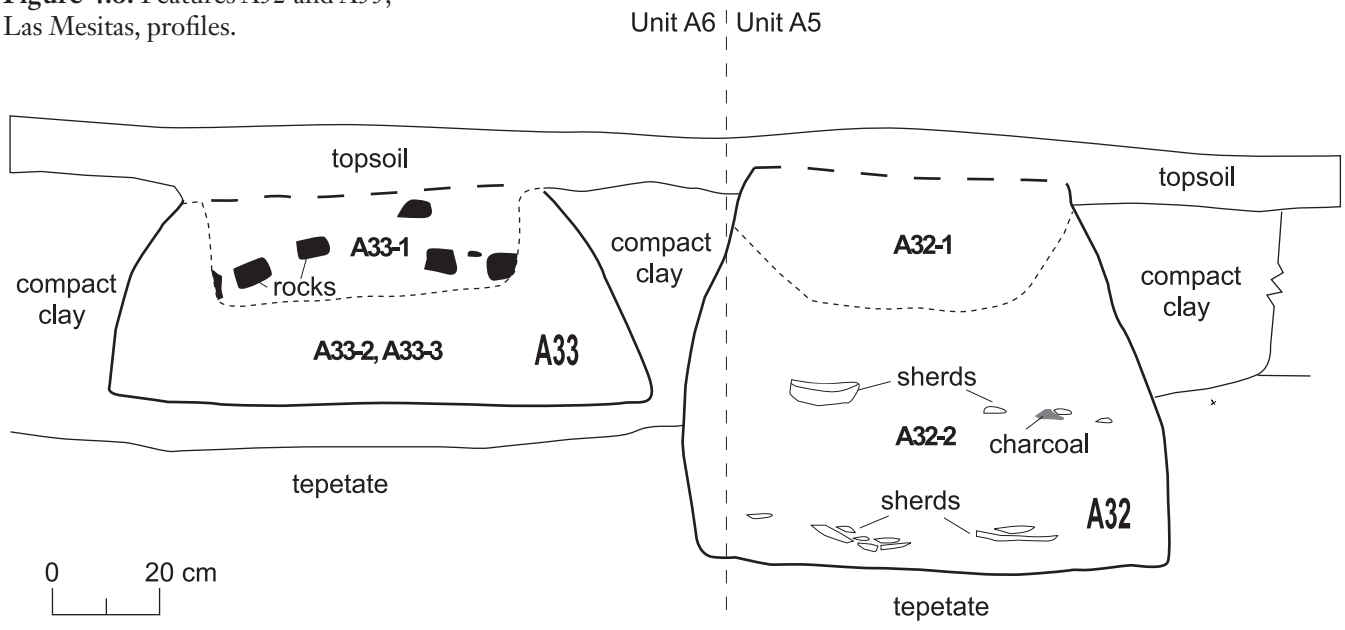

Figure 4.6. Features A32 and A33, Las Mesitas, profiles.

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mouth of the bell-shaped pit, is Stratum 32-1 (lots 236, 237, 241, 265, and 269), a layer of relatively loose sandy sediment about 25 cm deep. It is dark grayish brown in color (10YR 3/2) and much less compact than the surrounding clay matrix. Lot 241 was excavated to define and bisect the feature and thus contains portions of the surrounding matrix. Since the matrix is culturally sterile, all materials in the lot should correspond to the fill of the feature. Stratum 32-1 contained some carbon and few cultural materials. It is distinct from Stratum 32-2, upon which it rests. Stratum 32-2 (lots 250, 251, 269, 278, 280, and 281) represents the primary domestic fill of the feature. It was grayish brown (2.5Y 4/2) to olive brown (2.5Y 4/3), was very compact clayey sediment, and contained large sherds, a fragmented metate, and abundant carbon.

Depositional History. The bell-shaped pit was excavated into culturally sterile sediment. After it fulfilled its primary function (perhaps storage), it was filled rapidly with domestic refuse from a nearby household (Stratum 32-2). The pit was either not filled to its mouth with this same sediment and was then later filled with looser sandy sediment, or there was a secondary use of the pit involving partial removal of the domestic fill and eventual refilling with the sand. We favor the second scenario, as such a process is more clearly observed in adjacent Feature A33.

Feature A33

A bell-shaped pit located directly south of Feature A32. Dimensions: 76 cm in diameter at the mouth, 1.05 m in diameter at the base, 45 cm deep, .29 m^3 in volume. We encountered a ring of rocks and tepetate blocks 15 cm below the mouth of the pit. The sediment inside the ring was comprised primarily of burned earth and carbon, suggesting that the pit was used for roasting at some point after its original usage and filling with domestic refuse.

Phase. Texoloc pit; filled in Texoloc phase. The roasting pit located within the mouth of the pit likely dates to the Texoloc phase as well.

Unit. A6.

Lots. 220, 223, 239, 243, 244, 252, 284, 286. Lots 243 and 244 are partially mixed with sterile matrix, while Lot 243 is also is a mix of the fills from features A33 and A32, but the majority of materials can be assigned to Feature A33.

Excavators. David Carballo, Julienne Bernard.

Contexts. A33-1P (the pit), A33-2P (the roasting area within the mouth of the pit), A33-3S (contents of strata 33-1 through 33-3).

Illustration. Figure 4.6.

Stratigraphy. The uppermost layer of the pit is associated with the roasting area found in the mouth of the pit (Stratum 33-1, lots 220, 223, and 284). Feature A33 does not contain the sandy layer present in the mouth of Feature A32. Rather, Stratum 33-1 consists of a sandy clay layer, dark grayish brown in color (2.5Y 4/2) (Lot 220), resting upon the base of a roasting pit ringed by small rocks and blocks of tepetate (lots 223 and 284) and associated with carbon and burned earth. Stratum 33-1 cuts straight downward from the mouth of the pit, about 15 cm deep, and does not expand outward to conform to the walls of the bell-shaped pit.

Below Stratum 33-1, strata 33-2 (lots 239, 243, and 244) and 33-3 (lots 252 and 286) represent the primary fill of Feature A33. Similar to Stratum 32-2, Stratum 33-2 consists of clayey, compact, grayish brown sediment that is difficult to distinguish from the clay matrix surrounding the feature. Lot 239 was excavated directly beneath the base of the roasting pit. After noticing that more cultural materials continued below Stratum 33-1, we decided to bisect the feature to document its stratigraphy. Lot 243 was excavated in bisecting the feature to delineate the northern wall of the feature and to separate it from Feature A32. As a result, the layer is a mix of the fills from features A33 and A32 and the clayey matrix between them. Nevertheless, the majority of materials can be assigned to Feature A33. The materials from Lot 244 were excavated exclusively from the fill of the feature while bisecting it.

Stratum 33-3 corresponds to the base of the bell-shaped pit. It is filled with domestic trash, including figurine fragments and ceramics. The sherds are rather large and not very eroded, suggesting that they were recently broken vessels when deposited in the pit. The sediment was olive brown (2.5Y 4/3), with carbon and black and burned portions.

Depositional History. The bell-shaped pit was dug into the clayey matrix and then partially or completely filled with domestic refuse prior to being used as a roasting pit with a base ringed by rocks and tepetate blocks. The carbon and burned earth on the floor of the roasting pit was concentrated but not very abundant, suggesting that it was used only briefly (possibly for a single cooking episode). Alternatively, it is possible that the inhabitants of Area A used ash from the pit to fertilize their fields, periodically cleaning the pits of their accumulated contents.

Feature A34

A large bell-shaped pit filled with domestic refuse. A burial without offerings was found on the base of the pit. Dimensions: 55 cm in diameter at the mouth, 1.25 m in diameter at the base, 90 cm deep, .66 m^3 in volume. It is possible that the pit was reused as a roasting area after being partially filled, similar to Feature A33.

Phase. Texoloc pit; filled (burial and trash) in the Texoloc phase.

Unit. A6.

Lots. 224, 225, 230, 231, 261, 266, 270, 288, 289, 299.

Excavators. David Carballo, Julienne Bernard.

Contexts. A34-1P (the pit), A34-2P (roasting area associated with the mouth of the pit), A34-3B (burial), A34-4S (contents of strata 34-1 through 34-4).

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Illustrations. Figures 4.7 and 4.8.

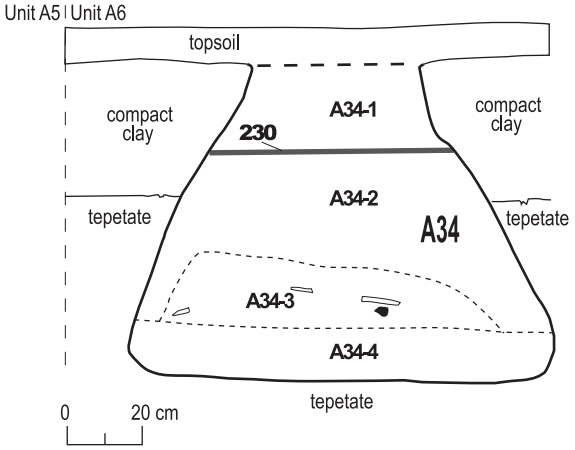
Stratigraphy. The uppermost layer of the feature (Stratum 34-1, lots 224, 225, 230, and 288) consists of sandy and clayey sediment, grayish brown and olive brown in color (2.5Y 4/3), resting upon a thin, very dark gray burned clay (10YR 3/1) layer (lot 230). This thin lens of burning possibly corresponds to the moment the feature was used for roasting. Below Stratum 34-1, Stratum 34-2 (lots 231, 260, 261, 266, and 288) represents a return to the type of sediment found in lots 225 and 226. The feature was bisected with lots 260 (the compact clayey matrix surrounding the pit), 261 (a mix of the matrix and the fill of the feature), and 266 (exclusively feature fill). The fill was compact and clayey sediment, grayish brown in color, while the matrix was almost pure clay.

Below Stratum 34-2, Stratum 34-3 (lots 270 and 289) consists of the fill placed on top of Burial 1. This layer was comprised of sediments with three different colors (grayish brown, olive brown, and burned clay that was black, 2.5Y 2.5/1, with carbon). It contained high concentrations of cultural materials (including large sherds), medium rocks, and a block of tepetate that was placed over the body of the burial.

The burial was excavated as lowermost Stratum 34-4 (Lot 299) and corresponds to an individual deposited in a tightly flexed position (possibly tied in a mortuary bundle), lying on her right side, with her head facing north. The individual was placed on the southern edge of the base of the pit, resting on top of approximately 20 cm of dirt. The skeleton was intact, but the bones had disintegrated considerably and were very fragile due to the compact and humid sediment they had been buried in for more than 2,000 years. There were no obvious offerings associated with the individual, but nearby materials included a fragment of a mano located along the northern wall of the pit, a prismatic blade, and burned organic remains found near the body.

Depositional History. We do not think Feature A34 was prepared for the explicit purpose of burying the individual. Rather, an existing pit appears to have been used for burial when the occasion arose. It is possible that the burial was accompanied by humble rituals, including the burning of some materials and the deposition of a broken mano. Domestic refuse, including relatively fresh trash, was deposited with sediment above the individual. As with Feature A33, the pit was filled to its mouth and then used as a hearth, or some fill was removed from a completely filled pit for this later usage.

Figure 4.7. Feature A34, Las Mesitas, profile.



Feature A35

A shallow circular pit with burning and a concentration of sherds and obsidian debitage. Dimensions: 60 cm in diameter, 10 cm deep, .03 m^3 in volume.

Phase. Texoloc concentration.

Unit. A7.

Lots. 221, 226, superimposed.

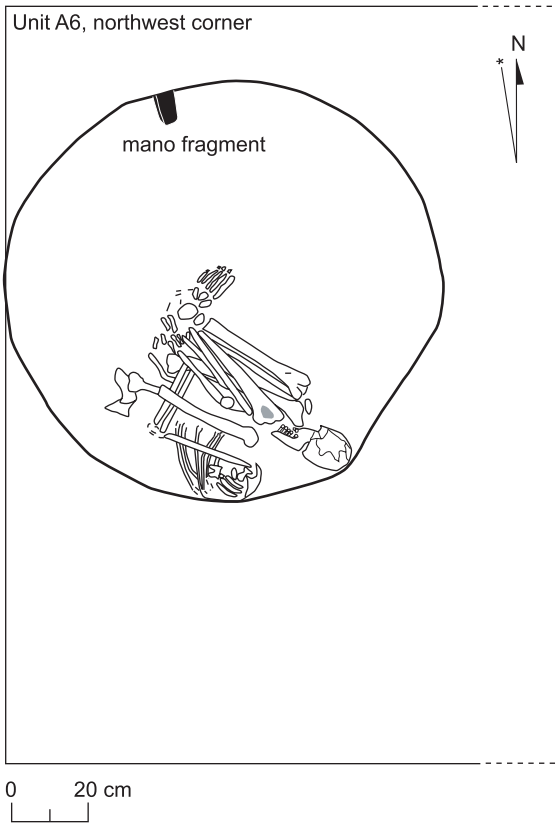
Excavators. María Guadalupe Espinosa Rodríguez, Julienne Bernard.

Contexts. A35-1S (hearth), A35-2S (contents of Stratum 35-0).

Illustration. Figure 4.3.

Stratigraphy. This shallow pit was filled with Stratum

Figure 4.8. Plan of Burial 1, Las Mesitas, located at the base of Feature A34.



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35-0 (lots 221 and 226), consisting of brown sediment (7.5YR 4/2) with sherds, lithics, rocks, and carbon, resting on a burned clay base.

Depositional History. The pit was possibly originally dug for roasting, since the base of the pit is burned black, and then was filled with domestic debris. Based on the homogeneity and depth of Stratum 35-0, the debris was probably deposited in a single episode.

Feature A37

A circular concentration of sherds and burning, similar to Feature A35. Dimensions: 40 cm in diameter, 8 cm deep, .04 m^3 in volume.

Phase. Texoloc.
Units. D2, D4.
Lots. 248, 264 (side by side).
Excavators. María Guadalupe Espinosa Rodríguez, Julienne Bernard
Context. A37-1S (contents of Stratum 37-0).

Stratigraphy. Stratum 37-0 (lots 248 and 264) is sandy, dark grayish brown sediment (10YR 3/2), containing large sherds and carbon, which rested on a burned clay base.

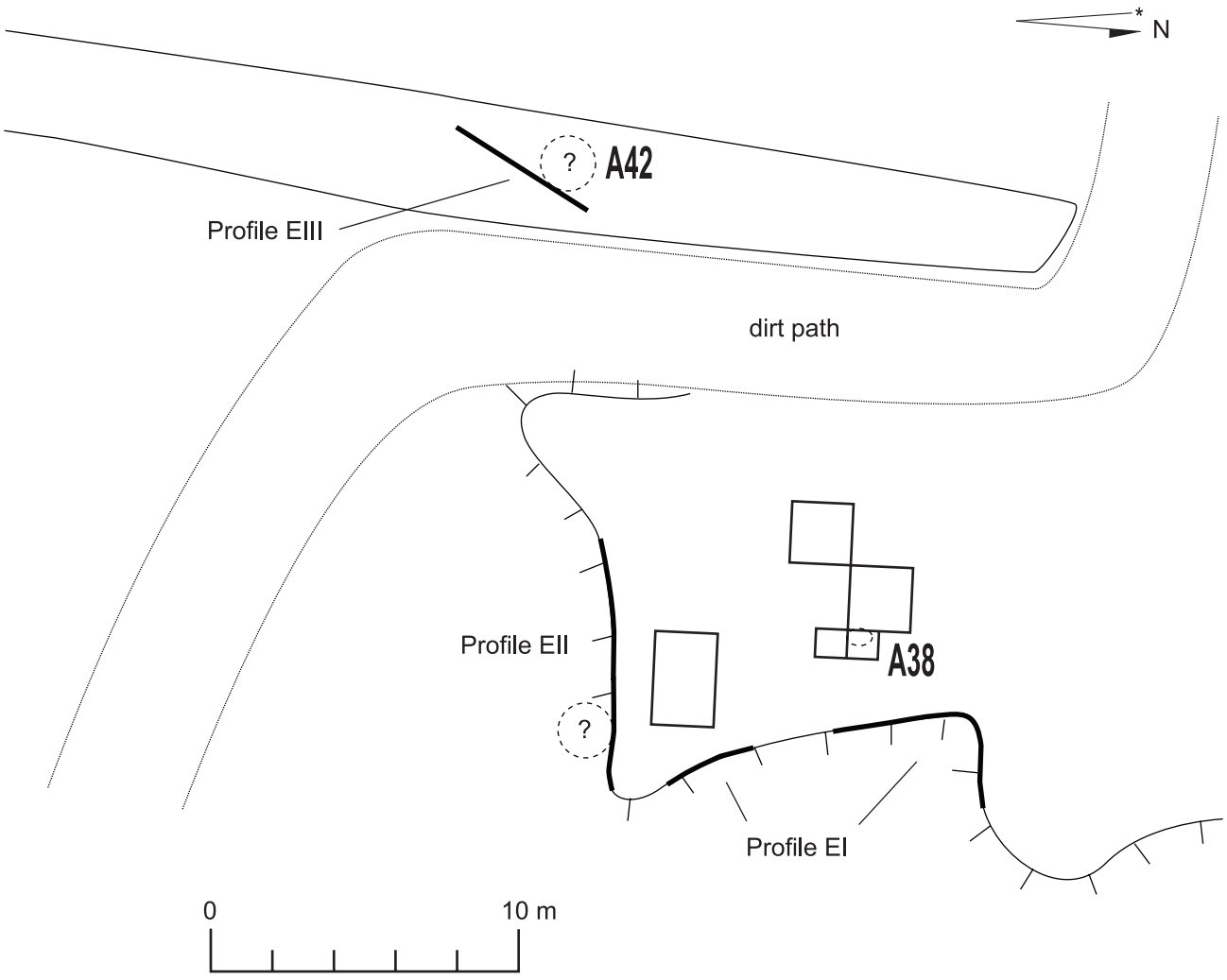
Depositional History. This shallow pit was dug for the deposition of trash; it appears to have burned both before and after the deposition of domestic refuse. No other features were found around this feature, which leads us to suspect that Area D was perhaps an agricultural field or an empty area between houses while Las Mesitas was occupied.

Feature A38

A possible hearth or roasting area with an oval shape (80 x 55 cm), about 15 to 20 cm deep.

Phase. Texoloc.
Unit. E9.
Lots. 336, 337, 338, 352, superimposed.
Excavator. Rodrigo Vilanovade Allende.
Context. A38-1P (the pit).
Illustration. Figure 4.9.

Figure 4.9. Plan of Area E, Las Mesitas.



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Stratigraphy. Stratum 38-0 (lots 336, 337, 338, and 352) consists of the burned clay that defines the irregular walls of the feature, within which a large amount of carbon was found.

Depositional History. A shallow pit was dug about 15 to 20 cm deep. Then clay was crudely molded alongside the walls and base of the pit (possibly the same clay that was removed to dig the pit). This clay was heated enough that its color changed to bright orange. Within the walls of the pit, a high concentration of carbon was deposited (along with only a very few sherds), probably as the result of several roasting events.

Feature A40

An irregularly shaped, shallow concentration of sherds, carbon, and small rocks, about 50 x 70 cm, 20 cm deep, and with a volume of .08 m^3.

Phase. Texoloc.

Unit. F1.

Lot. 357.

Excavators. Julienne Bernard, Jennifer Carballo.

Context. A40-1S (contents of Stratum 40-0).

Illustration. Figure 4.10.

Stratigraphy. Stratum 40-0 (Lot 357) is a compact brown layer (7.5YR 4/2) containing ceramics, carbon, and burned earth. There were very few artifacts associated with this stratum, its shape was rather irregular, and the surrounding clay matrix was also very compact, making it difficult to define the feature.

Depositional History. Because this concentration of artifacts is shallow and irregular in shape, resting directly at the contact between the topsoil and the compact clayey layer into which all other features are dug, it is possible that Feature A40 represents the base of an activity area or a very shallow trash deposit, the upper layers of which eroded away before deposition of the topsoil found at the site.

Feature A41

An irregularly shaped concentration of rocks, ash, and sherds.

Phase. Texoloc.

Unit. F2.

Lot. 359.

Excavators. Julienne Bernard, Jennifer Carballo, María Guadalupe Espinosa Rodríguez.

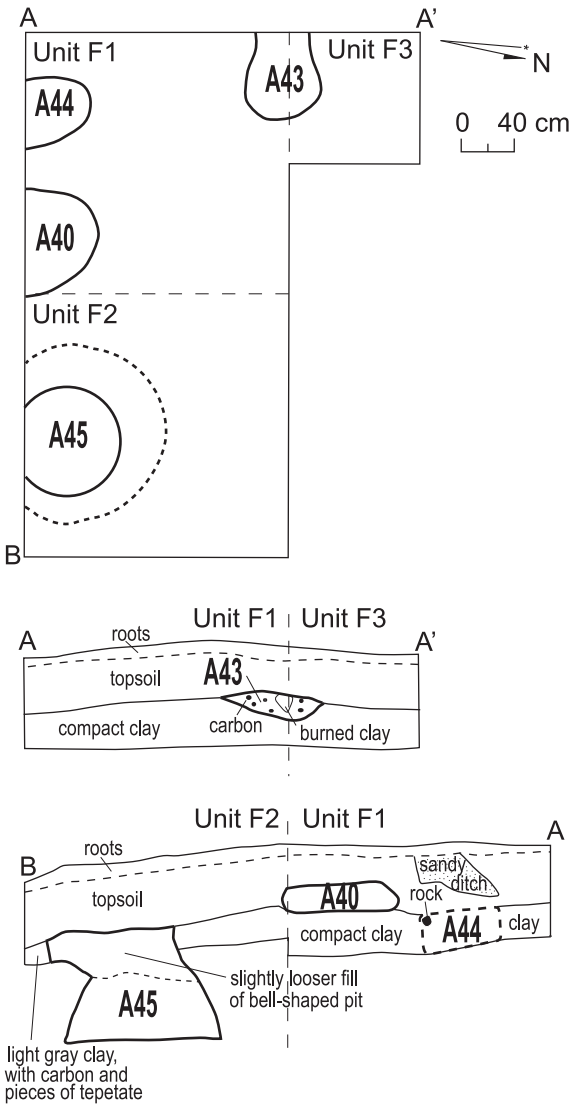
Context. A41-1S (contents of stratum 41-0).

Illustration. Figure 4.10.

Stratigraphy. Stratum 41-0 (Lot 359) consists of a concentration of rocks, ash, and sherds that was greatly disturbed by roots and snake and rodent burrows.

Depositional History. This irregularly shaped pit was dug into the sterile clayey layer and filled with domestic refuse. It is likely similar to shallow but extensive trash deposits found at Amomoloc (in particular Feature A47).

Figure 4.10. Plan and profiles of Area F features, Las Mesitas.



Feature A42

A remnant of a possible bell-shaped pit. According to local informants, it may have had a burial at its base, although we no longer have any evidence of this.

Phase. Texoloc pit; filled in Texoloc phase.

Unit. Profile EIII.

Lots. 324, 325, 360, 367. Note that lots 324, 325, and 360 may represent mixed contexts as they are related to the collection of artifacts and cleaning of the area directly around the eroded feature; only Lot 367 is firmly within the feature.

Excavators. Paola Demattè, Richard Lesure.

Context. A42-1S (contents of strata 42-1 and 42-2).

Illustration. Figure 4.9.

Stratigraphy. The feature is so destroyed that we can say little about its stratigraphy. Stratum 42-1 (lots 324, 325,

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and 360) contains unscreened surface materials that are probably from the nearby destroyed bell-shaped pit. Stratum 42-2 (Lot 367) consists of fill in the lowermost portion of the pit.

Depositional History. A large pit (perhaps bell shaped) was dug in this area of the site, perhaps originally for storage. If the bone found by the landowner of Las Mesitas near this area was indeed associated with this pit, it is likely that a burial was placed at the bottom of the pit. The pit was then filled with domestic refuse.

Feature A43

A possible hearth or roasting area associated with a high concentration of burning. Dimensions: 50 x 60 cm, with a maximum depth of 20 cm, and .07 m^3 in volume.

Phase. Texoloc.
Unit. F3.
Lots. 372, 374, 376, superimposed.
Excavator. Jennifer Carballo.
Context. A43-1P (the pit).
Illustration. Figure 4.10.

Stratigraphy. Stratum 43-0 (lots 372, 374, and 376) is the circular concentration of burned clay, representing the outline of this roasting area. The clay walls of the feature were very hard and bright orange in color (just like those of Feature A38), suggesting that the clay was exposed to high temperatures. Few artifacts were found directly associated with the feature, although concentrations of carbon were noted within the feature.

Depositional History. This shallow circular pit was dug into the clayey surrounding matrix, probably for the purpose of cooking or roasting. The bright orange color of the clay walls and base of the pit indicates that they were exposed to fairly high temperatures. Interestingly, this hearth feature was not filled with domestic refuse once it was no longer in use.

Feature A44

A concentration of rocks and sherds to the west of Feature A40, possibly associated with a modern trench cutting into the southern portion of the excavation unit. Dimensions: approximately 50 x 50 cm (almost circular in form), maximum depth of 25 cm, and .04 m^3 in volume.

Phase. Texoloc.
Unit. F1.
Lot. 377.
Excavator. Jennifer Carballo.
Context. A44-1S (contents of Stratum 44-0).
Illustration. Figure 4.10.

Stratigraphy. Stratum 44-0 (Lot 377) is compact sandy clay sediment, dark brown in color (7.5YR 3/3), which contained a few small rocks and sherds. These materials were found just below a very sandy intrusive layer, which we think is related to the modern trench identified in Profile AI. It is possible that Feature A44 was disturbed by this trench.

Depositional History. As in other areas of the site, the fill of the feature was difficult to distinguish from its surrounding matrix, but Feature A44 is possibly a shallow trash pit, similar to features A40 and A41.

Feature A45

A bell-shaped pit, approximately three-fourths of which was excavated. Dimensions of the excavated portion: 60 cm in diameter at the mouth, 1.20 m in diameter at the base, 85 cm deep, .48 m^3 in volume.

Phase. Texoloc pit; filled in the Texoloc phase.
Unit. F2.
Lots. 373, 375, 378, superimposed.
Excavator. David Carballo.
Contexts. A45-1P (the pit), A45-2S (contents of Stratum 45-0).
Illustration. Figure 4.10.

Stratigraphy. The fill of the feature was a single homogeneous stratum (Stratum 45-0, lots 373, 375, 378). It was registered in three superimposed lots for better control of artifact provenience. The stratum consisted of very compact grayish brown clayey sediment (10YR 4/2), ceramics, and relatively dense carbon. The upper portion of pit fill was slightly looser than the lower portion; we think this difference is due to differential moisture. The fill was very compact, making the feature difficult to excavate, as was the case with other features in areas A and F.

Depositional History. The bell-shaped pit was excavated into sterile soil, likely for storage. After falling into disuse, the pit was filled with mostly fresh domestic refuse.

The deposition of the fill of the pit was rapid because the fill is very homogeneous, lacking distinct strata.

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CHAPTER 5

La Laguna: Overview of Site

Aleksander Borejsza and David M. Carballo

LA LAGUNA IS THE largest and chronologically latest Formative settlement that we excavated. It is located 17 km northeast of the city of Apizaco, in the municipality of Lázaro Cárdenas, on land that until recently belonged to a large agricultural estate known as Hacienda La Laguna. It is one of the best preserved archaeological sites in Tlaxcala and has seen seven seasons of excavation so far. Excavations by Aleksander Borejsza during the 2003 and 2004 seasons were aimed at determining the age of the different systems of agricultural terracing at the site. All terraces turned out to be Postclassic or later, but a wealth of Formative deposits was discovered buried under terrace fills and other slope deposits (Borejsza 2006; Borejsza et al. 2008). These Formative contexts are presented in Chapter 7. Excavations by David Carballo during the 2004 season were aimed at uncovering houses and associated contexts of Formative age near the site center. Carballo also undertook the first attempt to map the entire site. Both sets of operations are presented in Chapter 6. Excavations during the 2005 through 2010 seasons were part of a separate project directed by Carballo. They are the subject matter of existing and forthcoming publications (e.g., Barba et al. 2009; Carballo 2007, 2009, 2012; Carballo et al. 2011; Carballo and Pluckhahn 2007); their results are touched on in this volume only where they contribute directly to the interpretation of the Formative contexts discovered in 2003 and 2004. The present chapter is meant as a general introduction to the site, describing its discovery, setting, and chronology.

PREVIOUS RESEARCH

The archaeological remains at La Laguna were first reported by Dean Snow (1966, Site 17), who made surface collections at this and 58 other sites within a 1,500-km^2 block of central and northern Tlaxcala. He concluded that of all the sites he had visited, La Laguna held the most promise for further exploration, and he named all his Formative ceramic types after it (Snow 1966, 1969, 1972).

Roughly at the same time, the site was visited by a German survey team compiling archaeological and ethnohistoric information on pre-Hispanic settlement in parts of Tlaxcala and neighboring Puebla as part of an interdisciplinary project funded by the Deutsche Forschungsgemeinschaft (DFG). Some surface collections were made, and a set of ceramic figurines was acquired. The site was recorded in the published site catalog under the entry San José LAGUNA (Tschohl et al. 1977:361–365). The authors report four pyramidal structures and ceramics, both Formative and Postclassic, with a predominance of the former. They single out the site as the most important one in the northeastern part of their survey area. Two other entries in the catalog—Cerro de la GARZA and Cerro de la PALMA—are referenced as related to La Laguna. The first entry (Tschohl et al. 1977:232) signals that there are sherd scatters on the slopes of what we refer to as Cerro La Gazca. The second entry could not be consulted, as the publication of the catalog was apparently broken off at the letter *O*. The next visitor to the site was a historical geographer who noted two or more superimposed systems of abandoned agricultural terracing of different morphology, strewn with pre-Hispanic sherds of different ages (Trautmann 1981:55).

Northern Tlaxcala, designated subarea IIIb, was the only large part of the state not surveyed intensively by the DFG-sponsored Proyecto Arqueológico Puebla-Tlaxcala (PAPT), implemented by Ángel García Cook. He subsequently designed the Proyecto Arqueológico del Norte de

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Tlaxcala (PANT) to close this gap, and he directed surveys over a 19-month period in 1976–1977. PANT data were analyzed and published by Merino Carrión (1989), who designated La Laguna (T-491) as the primary center in the approximately 2,000-km^2 survey block during the Texoloc and Tezoquipan phases. She proposed that La Laguna covered 5 ha during the Tlatempa phase and grew to 30 ha during the following Texoloc and Tezoquipan phases, with an estimated population between 750 and 1,750. During these two latter phases, it was placed in the highest tier of the settlement hierarchy within the survey block (together with one other site) and recorded as having 10 "ceremonial structures." A smaller, 6-ha occupation is recorded at the same site for the latter part of the Postclassic Tlaxco phase. The figure of 30 ha is an underestimate of the size of the Formative settlement, but there is a remote possibility that another site, T-686, also falls within the limits of what we refer to as La Laguna (Merino Carrión 1989:tables 1, 3, 4, 8, figures 6, 8, 10, 30).

Atlas Arqueológico, an official site register compiled by the Instituto Nacional de Antropología e Historia in the 1990s (Guevara Hernández 1991), gave the same 30-ha size estimate for the site and designated it E14-B23-29-097, with the name Haro "N." In 2002 the most prominent mounds at the center of the site were mapped by Roberto Bravo Castillo of the regional center of INAH.

SITE SETTING AND SURFACE OBSERVATIONS

The most obvious indices of pre-Hispanic settlement at La Laguna include several architectural mounds, partially buried stone foundations, and scatters of pottery sherds. They are spread over at least 1 km^2 south and east of the hacienda buildings (Figure 5.1). They occupy the slopes of three contiguous hills: Cerro La Gazca, Cerro Las Palmas, and Cerro Las Ardillas. The vestiges of pre-Hispanic occupation probably extend farther east, onto the slopes of the larger Cerro San Pedro, but this hill has yet to be surveyed.

The three hills that make up the site display several features typical of old cinder cones: very regular oval contours, rounded summits, and long convex backslopes. Their much shorter concave footslopes coalesce at an altitude of about 2,560 m above sea level. Cerro Las Ardillas is the smallest of the three and rises to only 2,590 m. Cerro Las Palmas reaches about 2,640 m. Cerro La Gazca is 2,700 m high, but the pre-Hispanic occupation does not seem to extend all the way to its top. The slopes are mantled by several meters of reworked pyroclastic sediment. Rubble of volcanic rock is ubiquitous on the modern ground surface, but its presence away from outcrops near the summits may be due to human activity.

The continental divide runs right through the site. The eastern half of Las Palmas, the northern half of Las Ardillas, and the northeastern sector of La Gazca are drained toward the Atlantic by streams that during the Formative had relatively wide floodplains, unlike the arroyo-like gorges in which they flow today (Borejsza 2006:271–298). On the Pacific side, to the northwest of the site center, there is a wide stretch of flat land that usually holds some standing water at the height of the rainy season. According to local informants, until a few decades ago it sustained a more permanent body of water, from which both the hacienda and the site took their names. It is not clear whether this small lake existed during the Formative, however, as in recent times it was fed by runoff diverted onto the plain by means of sluice gates placed on a nearby stream.

Almost the entire site is nowadays grazed by cattle raised for bullfights. The plain and most of the footslopes of Las Palmas and La Gazca are under grass (Figure 5.2). At higher elevations is a young juniper woodland that varies from relatively open to very dense, depending on grazing pressure and soil thickness. This pattern of land use is very recent. Only a few decades ago, a large portion of the site—known as Rancho Xalmonto—was still plowed (Figure 5.3). Fields were sown in maize, barley, and broad bean. They were separated by contour-parallel ditches and berms planted in maguey, known in much of Central Mexico as *metepantles* (West 1970; Wilken 1987:105–113; Whitmore and Turner 2001:136–143). These run across several Formative mounds and platforms and are obviously of more recent creation. Outside Xalmonto, the appearance of the modern ground surface is radically different. The vegetation cover is much sparser, and wide swaths of bare eroded ground are present.

The Formative and post-Formative history of land use at La Laguna is discussed in detail elsewhere (Borejsza 2006:365–384; Borejsza et al. 2008). It is relevant here to the extent that it has produced striking contrasts with respect to the preservation and visibility of Formative remains. On the plain and on the footslopes, Formative ground surfaces are buried under a mantle of colluvial deposits, and artifacts are visible only where they have been churned up by the digging of metepantle ditches. On the higher slopes, the visibility of Formative artifacts is also low due to the tall vegetation and burial under more recent terrace fills. Artifacts appear mostly along paths trodden by cattle or in places where runoff has breached the metepantle berms. In both settings, however, the preservation of Formative remains is excellent, especially in comparison to the other three sites described in this book. Mechanized farming has never been practiced at La Laguna, and the Formative deposits were in many places buried deep enough to remain undisturbed by horse-drawn plows. Outside Xalmonto, the situation is reversed. The visibility of sherds on the eroded surfaces is excellent, but the erosion has been so severe that in many cases it has removed not only the Formative ground surfaces but also any pits dug below them. The sherds themselves are often abraded beyond recognition and have been transported varying distances from where they were originally discarded. The boundaries of the Formative and Postclassic occupations,

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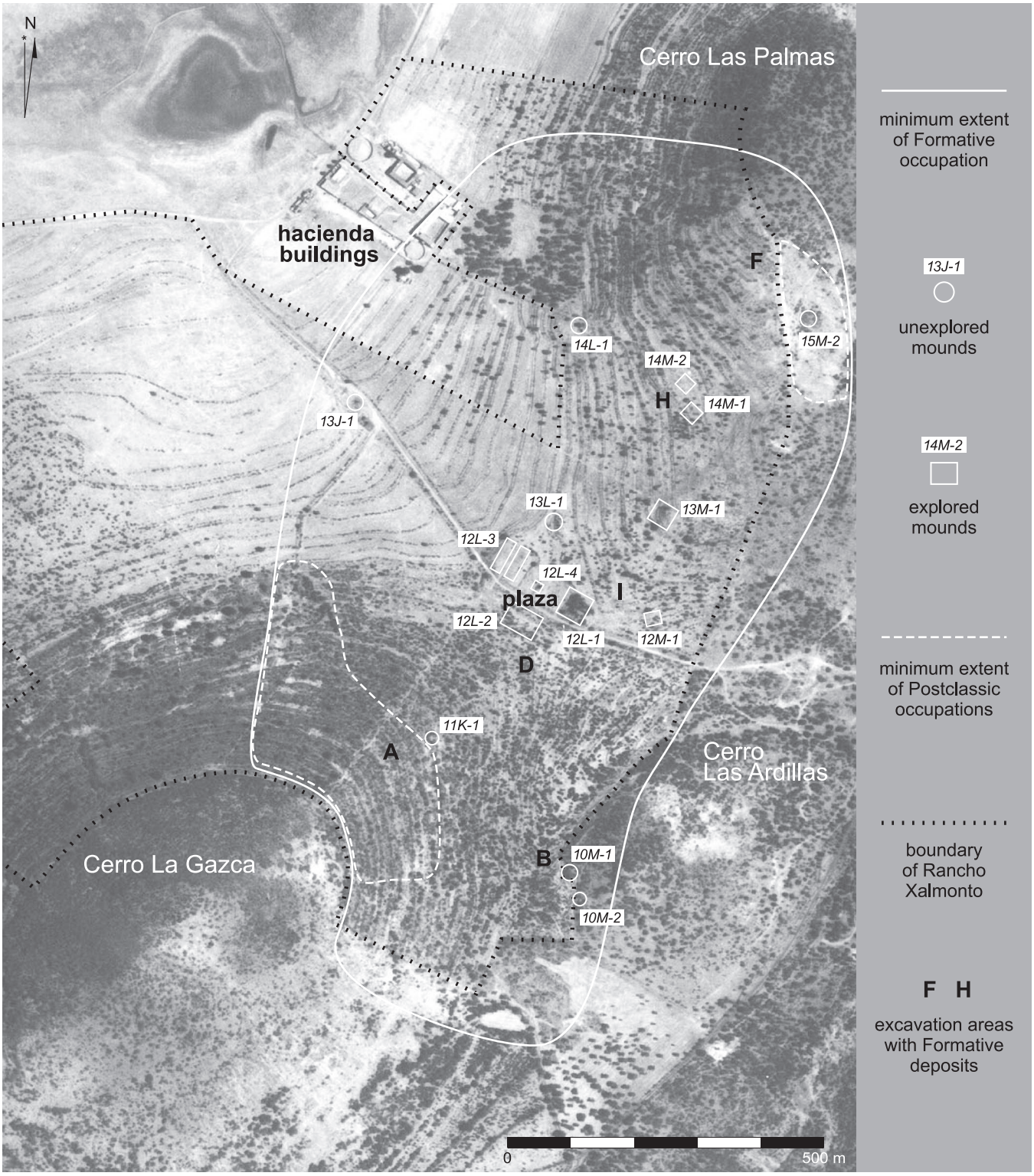

Figure 5.1. La Laguna; location of archaeological remains and excavation areas.

as drawn in Figure 5.1, are thus based on the rather haphazard distribution of surface finds, the excavations conducted so far, and the presence of architectural remains.

The Formative settlement has a well-defined civic-ceremonial center located in the pass between Las Palmas and La Gazca. There is a rectangular plaza flanked by mounds on three sides. The one on the eastern side, Structure 12L-1, is square in outline and still preserves a shape reminiscent of a small pyramid. The one on the western side, Structure 12L-3, is a large platform with an elongate

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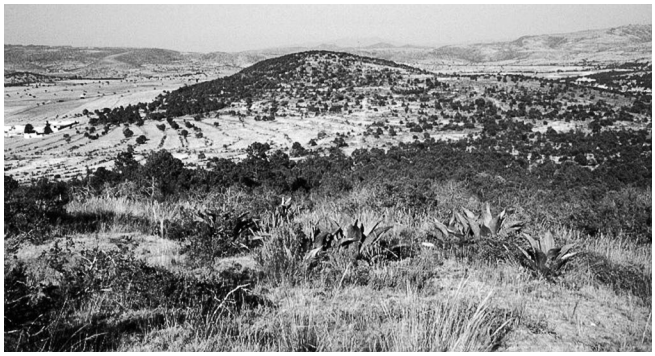

Figure 5.2. La Laguna during the dry season in 2002, looking from Cerro La Gazca toward the center of the site.

depression in the middle. It has recently been confirmed by geophysical survey and excavation as a ballcourt (Barba et al. 2009). Two other well-defined mounds are situated at short distances to the east and northeast of the plaza, Structure 13M-1 being the tallest and most visible structure at the site (Figure 5.3). Farther upslope, in what we refer to as Area H, excavations by Carballo (2009) have revealed yet another cluster of platform architecture of Formative age but having served residential functions. Here the structures are almost entirely buried and have little or no surface expression. Other isolated mounds are to be found on the slopes of all three hills. We would imagine that at the height of the Formative occupation, there were houses on the slopes of all three hills, though likely separated by cultivated fields.

There are two limited areas at La Laguna where the Formative remains are mixed with substantial quantities of sherds dating to the Middle or Late Postclassic. They may represent the remains of two separate clusters of Aztec or Otomí farmsteads, but they contain no obvious architectural remains of Postclassic age. Neither is comparable to the Formative settlement in size or regional importance.

SITE-WIDE CONVENTIONS

Several areas within the site were selected for exploration that went beyond mapping and surface collections. These areas are not strictly delimited blocks of land. They should rather be viewed as informal foci of excavation and other fieldwork efforts. Each of them is designated with a capital letter. There may be one or several excavation units of variable size within an area, all aligned on the same area-specific grid and referred to a local datum. In 2003 and 2004, Formative deposits were excavated in areas D and H by Carballo and in areas A, B, and F by Borejsza. The finer details of our excavation strategies, grids, and excavation unit nomenclatures differ and are explained in chapters 6 and 7, respectively. Since 2005 Carballo has expanded excavations in areas F and H and initiated excavations in areas G and I, while Borejsza has completed the excavation of features in Area B discovered in 2003.

Mounds and other structures at the site were originally designated with capital letters by Bravo Castillo. The number and complexity of architectural remains uncovered by our explorations, however, have made it necessary to use a more elaborate system combining a site-wide grid with alphanumerical designations. This system is presented by Carballo in Chapter 6, in the section that describes the mapping of the site.

The numbering of excavation lots and features is consistent for all excavations so that no lot or feature number is repeated between those directed by Carballo and those directed by Borejsza.

PLACEMENT IN REGIONAL CHRONOLOGIES AND SETTLEMENT HIERARCHIES

In comparison with other parts of Tlaxcala, Formative farmers seem to have colonized the vicinity of La Laguna relatively late. Sherds that belong to types of the Tlatempa phase are occasionally found in later contexts at the site, but no Tlatempa features have been uncovered by excavation so far. Excavated contexts are dominated by artifacts belonging to the Tezoquipan phase, with smaller but significant amounts of artifacts of the Texoloc and the newly defined Tenexac phase (Chapter 11). However, the radiocarbon chronology and stratigraphy of the site strongly suggest that occupation was discontinuous during the long Tezoquipan phase. All 38 radiocarbon dates from safely Formative contexts at La Laguna are represented in Figure 5.4. A significant hiatus is apparent between about 400 and 100/50 B.C. The dates that precede this hiatus are affected by a plateau in the calibration curve and by themselves would suggest a very long occupation, between 800 and 400 B.C. The scarcity of Tlatempa- and Texoloc-phase artifacts, however, leads us to propose that this first occupation was much shorter, limited perhaps to 600 to 400 B.C. For the second occupation we have fewer dates, but they suggest 100/50 B.C. to A.D. 150 as the most likely window of time. There are a few dates that fall in the hiatus.

The strongest arguments in favor of a significant hiatus are stratigraphic. On the slopes, in areas A, F, and H, pre–400 B.C. subsurface features were severely truncated by erosion. In areas F and H, post–100/50 B.C. buildings and occupation surfaces rest directly on top of the erosional unconformity. In the low-lying pass of Area B, the two Formative occupations are separated by a thick layer of colluvium. The erosional processes responsible for this massive transfer of sediment could have been accelerated at the close of the first occupation but could have also occurred *during* the hiatus in response to destructive swidden practices (see Borejsza et al. 2011). The cultural interpretation of the hiatus is open to debate. Borejsza imagines complete abandonment and the occasional cultivation of outfields by people residing at other sites, while Carballo

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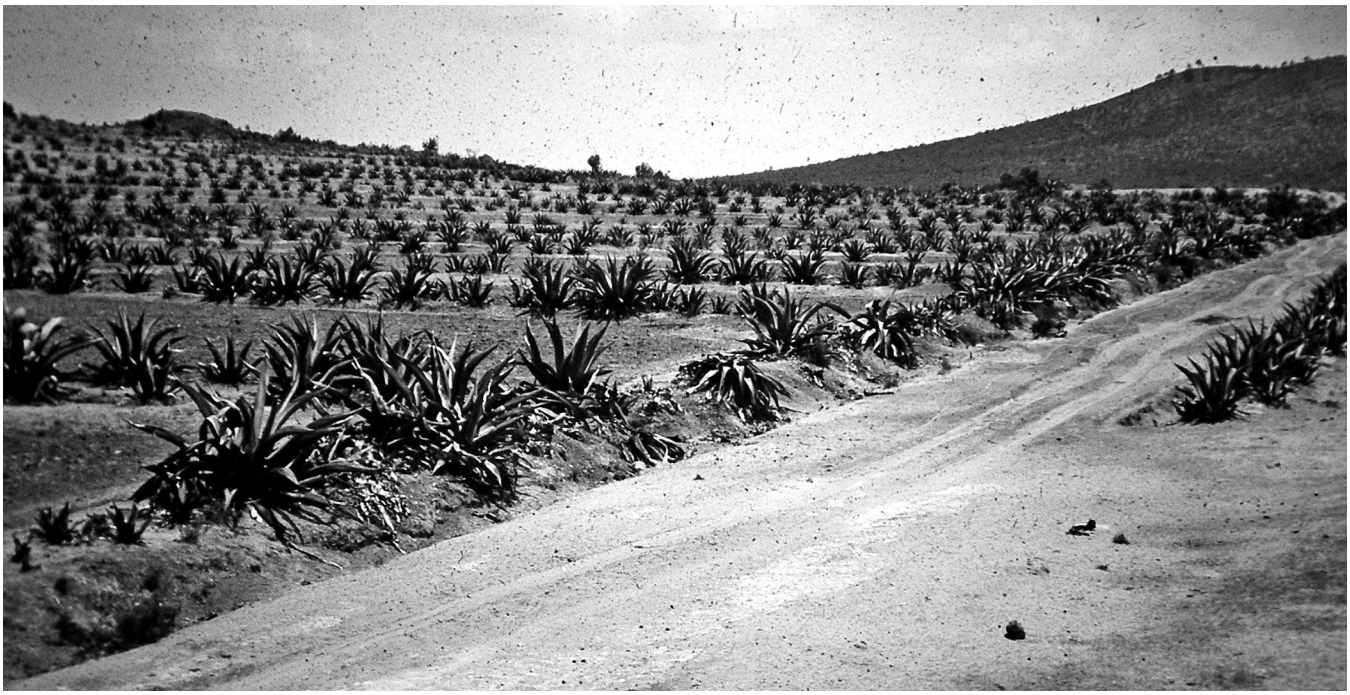

Figure 5.3. La Laguna during the dry season in 1964. Looking southeast across the pass between Cerro Las Palmas and Cerro La Gazca. The plaza of the Formative settlement is where the dirt track meets the horizon. Mound 13M-1 is visible to the left. Photo courtesy of Dean Snow.

thinks that people continued to live at La Laguna, though in significantly lower numbers.

Precise estimates of the size and population of Formative La Laguna are still problematic, mostly because of the difficulty of separating the two occupations in space. Surprisingly little change in ceramics seems to have taken place between 400 and 100/50 B.C., and we have great difficulty distinguishing an Early and Late Tezoquipan component (Chapter 11). The problem is compounded by the disparity of the contexts excavated for each occupation, mostly because of our disparate research goals. The first occupation is best represented by refuse-filled pits and mortuary contexts excavated by Borejsza. The second occupation is best represented by the architecture explored by Carballo, but mound and platform fill is dominated by redeposited artifacts of the first occupation. Whenever it was reached, the peak of population at La Laguna was almost certainly higher than Merino Carrión's (1989:Table 4) 750 to 1,750 estimate for 30 ha of occupation. Given that her conversion factors are rather conservative in comparison to those used in other parts of the Mesoamerican highlands, and given that the minimum extent of the Formative occupation marked in Figure 5.1 is 91 ha, our estimate would be closer to 1,500 to 3,000 people. We believe that during each of its two occupations, La Laguna was the center of an independent polity and that it dominated the settlement hierarchy within a radius of at least 20 km (see also Carballo and Pluckhahn 2007).

The nearest contemporaneous sites of comparable stature are probably T-505 and T-346 of the surveys conducted by García Cook and his associates, 25 km to the west and 22 km to the south-southeast, respectively. The monumental core of the latter site, known as Cerritos de Huamantla, has recently been mapped by the regional center of

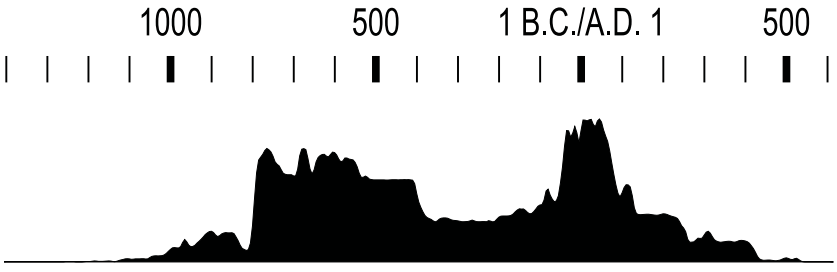

Figure 5.4. La Laguna. Sum of probability distributions for 38 radiocarbon dates from safely Formative contexts. Produced using the SUM function in OxCal 4.1.7. Compare to tables 11.10 and 11.11.

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INAH in collaboration with Borejsza. It is larger and better defined than that of La Laguna. The artifacts visible on its surface suggest a Texoloc- or Tezoquipan-phase occupation. A third very large site, T-492, known as Santa María Capulac or Tecohuactzinco, is only 5 km northwest of La Laguna. It was apparently first settled during the Tezoquipan phase, but the most substantial remains seem to belong to later periods (de la O 1977; Merino Carrión 1989:89; Peña Gómez 1987; Trautmann 1974:119, 1980:18, 1981: 32, 37, 61, 71).

If these three or four sites are envisaged as seats of chiefly authority, they would have likely been in direct competition with one another. During the hiatus in occupation documented at La Laguna, the bulk of the population may have gravitated toward any of the other sites mentioned. Much larger centers existed during the Texoloc and Tezoquipan phases in the Puebla-Tlaxcala Valley, the two most prominent ones being Xochitécatl and Tlalancaleca (García Cook 1981, 1984; Palavicini 1998; Serra Puche et al. 1996). The artifactual assemblage from La Laguna has many obvious affinities with those sites, and they no doubt exerted significant social and economic influence over their smaller northern neighbor. However, they are located at distances of the order of 50 km from La Laguna, well in excess of the 28-km radius that Spencer (1990) estimates as the maximum range that could be effectively administered by a chief.

The apparent abandonment of La Laguna around A.D. 150 coincides with the dramatic regional settlement changes associated with the growth of Teotihuacan and the political expansion of the state ruled from that city. Several other Formative sites in Tlaxcala are abandoned at roughly the same time, while new, generally larger, and more nucleated settlements spring up in the plains that traverse the northern half of the state. This new settlement pattern has led García Cook to hypothesize the existence of a Teotihuacan "corridor" along which metropolitan culture spread toward the Gulf of Mexico (García Cook 1974, 1981:266–269; García Cook and Trejo 1977). La Laguna was not part of this new order. Its former inhabitants may have moved to nearby T-492, one of the early urban centers along the corridor, or to Teotihuacan itself.

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CHAPTER 6

La Laguna Site Mapping and Domestic Excavations in Areas D and H

David M. Carballo

TWO MAJOR OBJECTIVES for the 2004 season of the UCLA project on the Formative period of the Apizaco region were to initiate a map for La Laguna that would document its topographic setting and settlement remains, and to further the exploration of domestic areas. In this chapter I describe the mapping program and excavations in areas D and H. Site mapping, excavations in Area H, and excavations elsewhere at the site have continued during five subsequent field seasons as part of the Proyecto Arqueológico La Laguna (PALL), but details from these investigations are included only when relevant to the goals of the present volume in developing a regional chronology. The site map provides an appreciation for the size of the Formative-period occupation at La Laguna and the spatial articulation of its central public structures with each other and the surrounding landscape. Excavations in areas D and H recovered intact cultural deposits dating from the Texoloc, Tezoquipan, and Tenexac phases (circa 600 to 400 B.C. and 100 B.C. to A.D. 150, respectively). They provide valuable information on households and their transformations coinciding with Central Mexican urbanization and state formation.

MAPPING LA LAGUNA

La Laguna's setting and previous archaeological exploration are detailed in Chapter 5. The central portion of the site was first mapped in 2002 by Roberto Bravo of the INAH Tlaxcala Regional Center. In 2004 and 2005 we remapped that core area and extended coverage over the slopes of the three hills facing the site: Cerro Las Palmas, Cerro Las Ardillas, and Cerro La Gazca. The mapping program was conceived to document all structural remains visible from the surface—which are less common than is normal in Central Mexico due to colluviation from the three hills—as well as the natural topography of areas with surface evidence of pre-Hispanic occupation. Jason De León, Jennifer Carballo, Paloma Diez de Solano Guggenbuehl, and Nezahualcoyotl Xiuhtecutli all assisted in site mapping.

The mapping program involved the use of a digital transit (Topcon GTS 303) oriented to magnetic north. During the dates of mapping operations, the difference in declination between magnetic and true north was approximately 5° 40' east, reflected in the north arrows used in this volume. An initial datum station was established in excavation Area H, and later stations were established by backsighting to this point (designated Datum H). The mean of 12 GPS readings taken from Datum H over the course of two weeks established its elevation as 2,596 m above sea level, to which all other map elevations were calibrated; its mean coordinates are 14Q0604535, UTM2157783. All mapping coordinates were plotted, projected, and modified using the software packages Surfer, ArcGIS, Google Earth, and Adobe Illustrator.

The site presented two major challenges to the mapping program: its irregular topography, with settlement remains dispersed over the slopes of three hills and over 100 ha, and its relatively dense tree cover in certain portions. (A third was the presence of roaming bullfighting breed cattle, which often voiced their objections to the total station being set up in a particular area of their pasture and occasionally looked ready to do something about it.) In more densely forested areas of the site, where few or no measurements were taken, topographic contours reconstructed by the mapping software were verified by overlaying them onto aerial and satellite photos to manipulate line vectors.

Figure 6.1 depicts the resulting topographic map of La

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Laguna, including the 1,450 data points registered from 13 datum stations. (Station 5', established in 2005, is listed as such to differentiate it from Station 5, established in 2004.) After our initial system of designating structures sequentially within excavation areas became cumbersome, we developed a grid for assigning structures with reference to a grid square, also depicted in Figure 6.1. Grid squares measure 200 m on a side and are numeric on the north–south axis and alphabetic on the east–west axis. We intentionally left space on both axes so that the grid could be extended if later investigations demonstrate the site boundaries to extend beyond the currently mapped area. Accordingly, the center of the site is Square 12L, and the major structures around the central plaza are designated 12L-1, 12L-2, 12L-3, and so on. Projected architectural reconstructions of structures visible from the surface or encountered through investigations are depicted on the map in Figure 6.2, along with their grid designations, lettered excavation areas, and excavation units from 2003 to 2006. The dimensions of the larger central structures are presented in Table 6.1. These measurements were taken from the surface, and excavations demonstrate that colluviation at the site has significantly buried architectural remains, making these values conservative estimates for the actual size of the structures. Nevertheless, they provide reference points for comparing La Laguna's central structures with those found elsewhere (e.g., Blitz and Livingood 2004).

The central precinct of the site consists of a rectangular plaza measuring approximately 90 x 60 m (Figure 6.3). The plaza is sunken relative to the surrounding ground surfaces and is flanked to the southeast by Structure 12L-1 and to the northwest by an I-shaped ballcourt (Structure 12L-3). A sharp break in the natural topography to the northwest represents artificial modification by La Laguna's Formative-period occupants to flatten and lengthen the plaza. The central axis of the precinct is deviated approximately 66.5 degrees west of magnetic north or 60.5 degrees west of true north, resulting of a true azimuth of 299.5 degrees. Such an alignment lies slightly to the north of the most common cluster of site orientations within Central Mexico, which have azimuths between 275 and 295 degrees (see Aveni 2001; Carballo and Aveni 2012; Šprajc 2001).

Structure 12M-1 deviates from the general orientation of structures near La Laguna's central plaza. Taken as a whole, however, the central structures articulate as a single integrated unit, suggesting that construction and occupation sequences were largely contemporaneous. Visible structures on the surrounding slopes do not conform to this orientation. Although most of them may also have been contemporaneous, their alignments follow the natural contours of the slopes on which they reside. The overall plan of La Laguna is therefore suggestive of a higher degree of coordination in designing the site center than in designing peripheral elevated structures, which may have been constructed independently by factions within the community.

Due to the positioning of the site downslope from three hills, lower-elevation architectural units such as houses are mostly invisible from the surface. Although few potential house remains are plotted on the site map, domestic architecture has been documented through excavations in areas D, F, and I, where no traces of it were visible from the surface, and through geophysical prospection in Area I (Carballo et al. 2011). Excavation of Area H represents the only example of conspicuous domestic remains visible from the surface, and this was an important consideration in choosing the area for excavations during the 2004 season, discussed below.

AREA H: EXCAVATION AND STRATIGRAPHY

We selected this flattened portion of the lower slopes of Cerro Las Palmas for excavations due to the presence of discernible surface elevations that we hypothesized corresponded to domestic structures based on their association with domestic refuse (Figures 6.4, 6.5). Surface indices also suggested that Area H was artificially flattened, as its topography breaks the natural slope of Cerro Las Palmas and abundant stone debris located downslope corresponds to large retaining walls (Figure 6.6). Stone alignments visible on the surface of Structure 14M-1 left little doubt that it represented a large quadrangular structure. Structure 14M-2 was not explored until 2006 and will not be reported on here. Structure 14M-3, representing a smaller building between these two much larger ones, was partially uncovered by our 2004 excavations. The presence of domestic features between the structures indicates that they served as residences, leading us to conclude that Area H was inhabited by one of the community's high-status families (see Carballo 2009).

Prior to breaking ground in 2004 we established a grid system for Area H, covering an area measuring 76 x 60 m, divided into alphanumeric 2-x-2-m units. The excavation grid follows the natural orientation of the modern terrace system on its portion of Cerro Las Palmas, which deviates approximately 40 degrees west of magnetic north. The north–south axis of the grid was numbered beginning from the south, whereas the east–west axis was lettered starting from the west. As our primary excavation goal was to recover domestic refuse from secure feature deposits, excavation units were planned off the mounds at 24S and 30H, in front of and between structures 14M-1 and 14M-2. A third unit was positioned at 5S. Once the remains of a stone wall were detected, four contiguous units were opened adjacent to 24S, creating a larger horizontal exposure to investigate features associated with the architectural remains. This exposure is hereafter referred to as the 14M-3 excavation.

All seven units in Area H were excavated to sterile tepetate, except for the construction fill behind the wall encountered in the 14M-3 excavation (units 23R and 24R), which was sampled for dating purposes but not complete-

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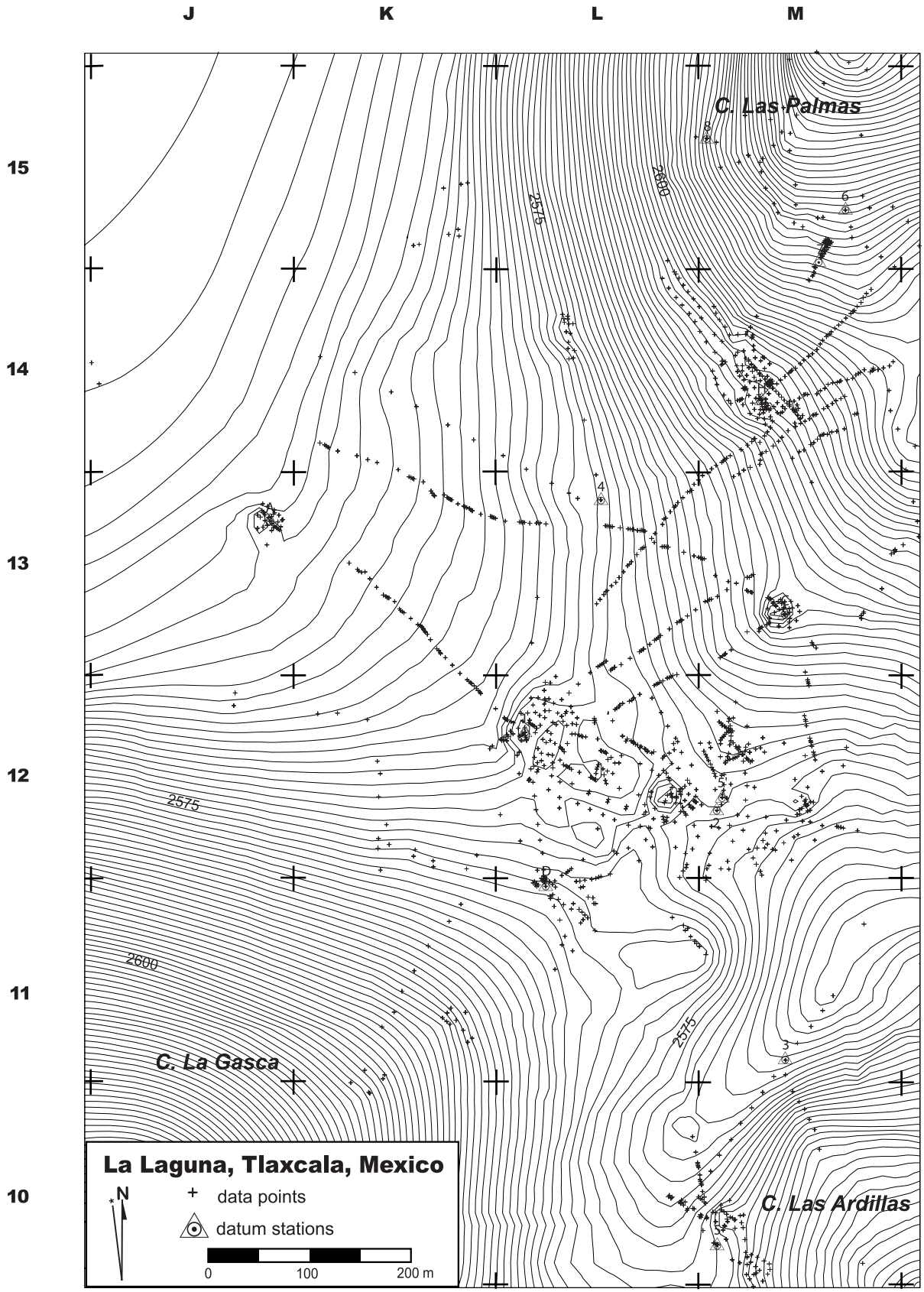

Figure 6.1. La Laguna contour map showing datum stations, data points recorded during the mapping program, elevations, and grid system.

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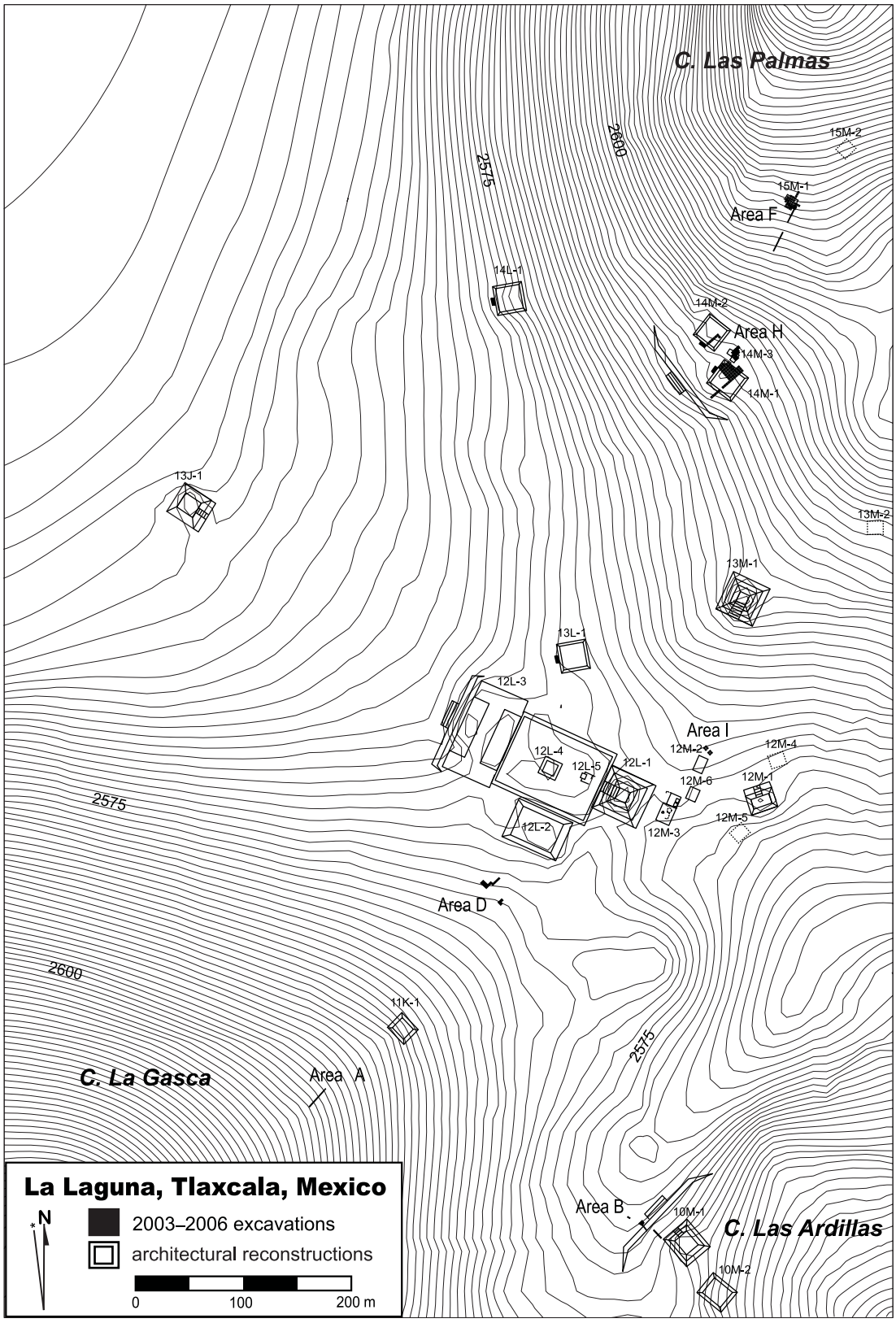

Figure 6.2. La Laguna map showing hypothetical reconstructions of structures visible from the surface or encountered during investigations (labeled by grid designation) and excavations during the UCLA project (2003–2004) and the first two seasons of the PALL (2005–2006).

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ly removed (Figure 6.7, Figure 6.8). The tepetate slopes gradually from the south to the north of the Area H grid, meaning that excavation units were increasingly deeper and contained more complex stratigraphy to the north. Tepetate was encountered .70 m below the surface in Unit 5S, 1.10 m below the surface in Unit 23S, and 1.80 m below the surface in Unit 30H. Significantly more excavation lots were therefore registered for Unit 30H, documenting Formative living surfaces, abundant structural collapse corresponding to the abandonment of the residential compound, and post-Formative strata that accumulated over the collapse.

The humic topsoil of Area H generally extends 10 to 30 cm from the surface and is brown (10YR 4/2) to dark grayish brown (10YR 4/3) sediment containing modern materials and abundant roots. Underneath the humic layer in Unit 30H was a yellowish brown (10YR 5/4) sediment surrounding a ditch that cut into it and that was filled with slightly darker sediment (10YR 4/4). The ditch likely corresponds to the metepantle (maguey-lined ditch and berm) terracing system of the historic hacienda. Under this layer in Unit 30H, and under the humic layer of the 14M-3 excavation, appeared a distinctive very dark brown (10YR 2/2) to black (10YR 2/1) clayey buried soil horizon, which was absent in Unit 5S. This stratum was striking for its contrast with others when viewed in profile, as it appeared to have been associated with burning episodes. Another ditch was excavated into this dark layer in the large excavation (units 23S and 24S, Feature A100) and was also was clearly associated with landscape modifications that postdate the

Table 6.1. Selected La Laguna Mound Dimensions, Recorded from Surface

Structure:	Base L x W (m):	Top L x W (m):	Height (m):	MVI:
13J-1	31 x 33.5	9 x 11	4.4	4.57
12L-1	38 x 38	9 x 9	5.4	7.80
12M-1	19.6 x 29	7.8 x 15	4.0	2.27
13M-1	30 x 30	9 x 11	6.1	5.49

Note: Mound Volume Index (MVI) = [(basal length) x (basal width) x (height)] / 1000 (following Blitz and Livingood 2004; Payne 1994). Values are rounded to nearest 10 cm.

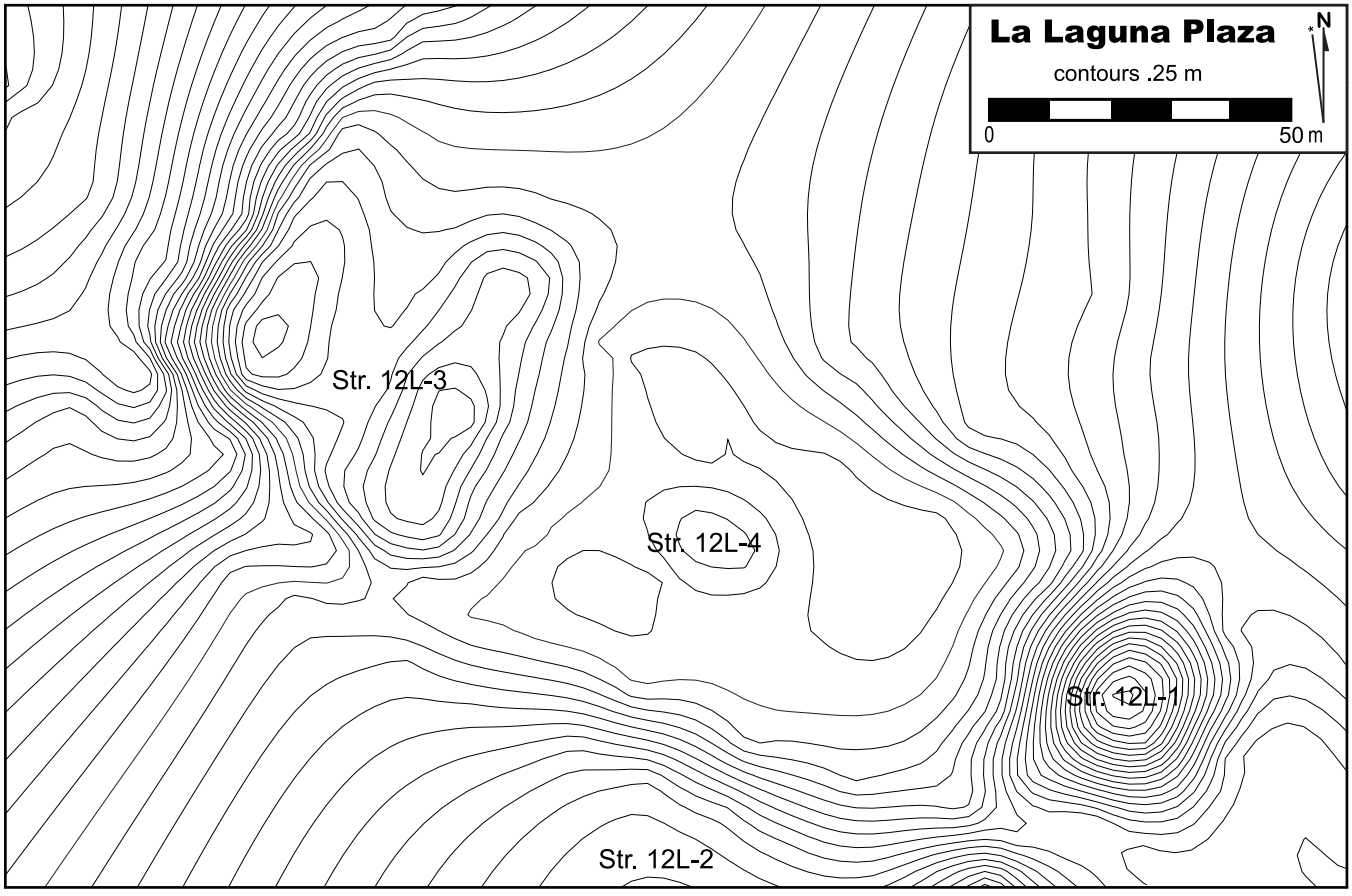

Figure 6.3. Contour map of the central plaza at La Laguna, showing a ballcourt (Structure 12L-3, northwest) and a masonry pyramidal platform (Structure 12L-1, southeast) flanking a quadrangular plaza with a central altar (Structure 12L-4).

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Figure 6.4. Area H prior to 2004 excavations, facing south. Structure 14M-1 is visible as an elongated rise in front of trees.

Formative-period occupation of La Laguna. Borejsza obtained an Epiclassic date of A.D. 770 to 1010 (all dates are 2σ range unless noted) on charcoal recovered from its fill (Figure 6.9).

Under the dark layer, sediment color tended toward dark yellowish brown (10YR 3/4-5/4). This stratum overlay the mouths of the uppermost Formative features encountered during excavations, indicating it to be the latest accumulation associated with the Formative occupation and colluvium that immediately followed the abandonment of the site circa A.D. 150. The Formative occupation surface overlaying the tepetate was approximately 20 to 30 cm thick and tended to be grayish or yellowish brown in color. It contained the latest Formative cultural features, including Feature A101 of Unit 5S (Figure 6.10), Feature A103 of Unit 24T, Feature A104 of Unit 30H (Figure 6.11), and Feature A106 of Unit 24S; the last was dated to 160 B.C. to A.D. 70 (Figure 6.12). The earliest Formative cultural features in Area H penetrated more deeply into the sterile tepetate and included Feature A102 of Unit 24S (dated 790 to 430 B.C.) and Feature A105 of Unit 30H (dated 790 to 420 B.C.).

Excavation contexts, stratigraphy, and associated dates for Area H are detailed in the following section.

AREA H: CONTEXTS

Structure 14M-3 Wall

A portion of a stone talud wall, corresponding to the northern facade of the basal platform of Structure 14M-3.

Phase. Late Tezoquipan.

Units. 23R and 24R.

Lots. 1658, 1659, 1660.

Excavators. David Carballo, Jason De León.

Context: A99-1P (the wall).

Illustrations. Figures 6.7–6.12.

Stratigraphy. Platform fill behind the wall consists primarily of dark brown and yellowish brown sediment (10YR 3/3–3/4 and 10YR 3/4–5/4) disturbed by rodent burrows that could have introduced more recent materials (particularly in Lot 1660).

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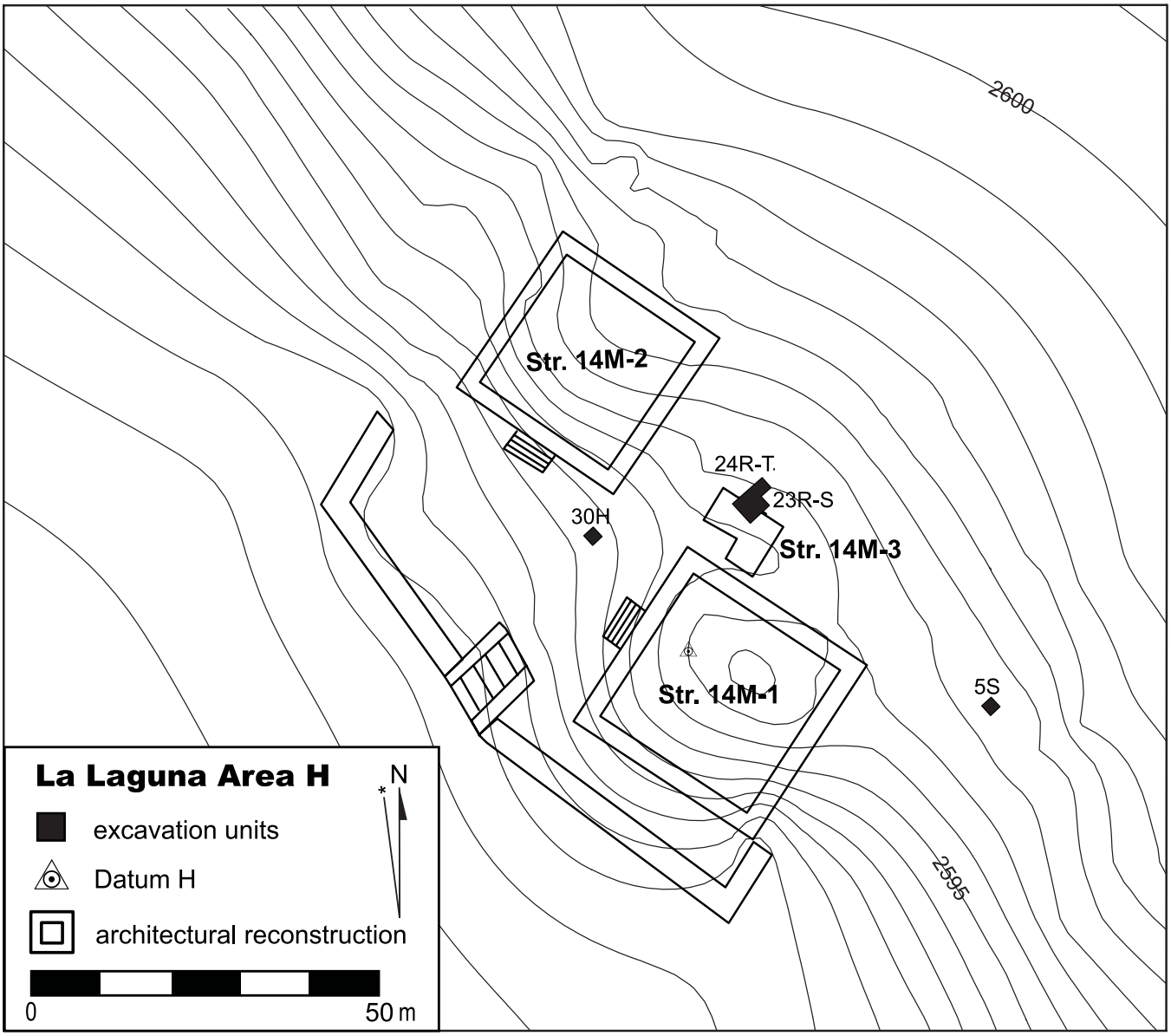

Figure 6.5. Area H showing excavation units from 2004 and hypothesized reconstructions of structures 14M-1, 14M-2, and 14M-3.

Depositional History. Wall 1 was likely constructed during the Late Tezoquipan phase, as it articulates directly with Feature A106. Its construction process consisted of forming a flattened earthen platform with nearby sediment, including refuse deposits, enclosed by a wall faced with rocks and cut tepetate blocks. Rocks were faced on one side or placed flat side out to create a symmetrical talud. Excavations in 2006 revealed this to be a separate structure from Structure 14M-1.

Feature A100

A portion of a ditch extending southeast–northwest above Structure 14M-3.

Phase. Epiclassic to Early Postclassic; carbon from fill 14C dated to A.D. 770 to 1010 (2σ).

Units. 23S and 24S.

Lots. 1609, 1611, 1641, 1647.

Excavators. David Carballo, Jason De León.

Illustration. Figure 6.9.

Stratigraphy. The ditch fill layer was a single stratum of dark grayish brown (10 YR 3/2–4/2) laminar deposits of sandy and clayey sediment.

Depositional History. The ditch was excavated into a very dark brown/black buried soil horizon, possibly serving as part of a metepantle. It filled with lighter-colored sediment through accretional fluvial action, evident from the laminar deposits of sand and clay.

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Figure 6.6. Area H retaining walls located downslope on Cerro Las Palmas. Photo taken prior to excavations in 2006, facing north.

Feature A101

A portion of a bell-shaped pit excavated into the Formative living surface with its base extending into tepetate.

Phase. Texoloc/Early Tezoquipan.

Unit. 5S.

Lot. 1613.

Excavator. Paloma Diez.

Context. A101-1S (sediment that filled the pit).

Illustration. Figure 6.10.

Stratigraphy. The pit fill was a mix of light yellowish brown sand (10YR 6/3) and dark yellowish brown sediment (10YR 4/4).

Depositional History. The pit was excavated into the Formative living surface (Lot 1607), penetrating approximately 15 cm into tepetate at its base. Unfortunately, the majority of pit fill was not distinguished from its surrounding matrix in Lot 1607. Lot 1613 corresponds to the fill at the base of the pit.

Feature A102

A portion of a bell-shaped pit excavated into tepetate and truncated by later Formative occupation.

Phase. Early Tezoquipan; 14C date of 790 to 430 B.C. (2σ).

Units. 24S and 24T.

Lots. 1617 (mixed), 1618, 1619, and 1633.

Excavators. David Carballo, Jason De León.

Context. A102-1S (sediment that filled the pit).

Illustrations. Figures 6.7 and 6.9.

Stratigraphy. Pit fill was a mix of brown (10YR 3/3) and yellowish brown (10YR 4/4, 10YR 5/6) sediment with medium-sized rocks and large sherds.

Depositional History. The pit was excavated primarily into tepetate, with a mouth extending into the earliest Formative living surface, traces of which were erased by later occupation—truncating the pit in the process. The bottom portion of the pit was recovered. It had been filled relatively rapidly with sediment that did not form discrete strata, medium-sized rocks, and fresh domestic refuse.

Feature A103

A portion of a lens of refuse in the latest Formative occupation.

Phase. Late Tezoquipan/Tenexac.

Unit. 24T.

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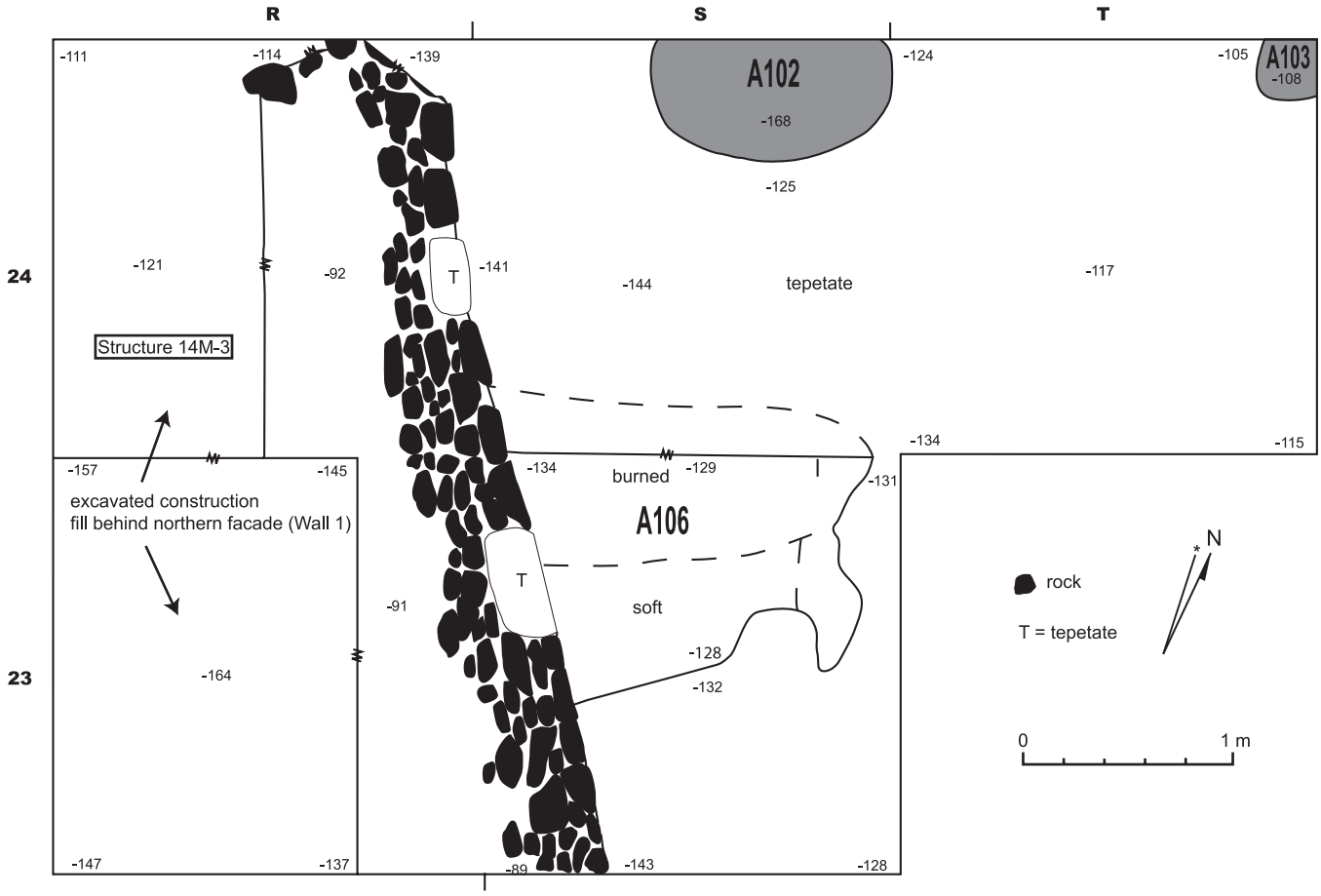

Figure 6.7. 14M-3 excavation, showing northern facade (Wall 1) and features.

Lot: 1630.

Excavators. David Carballo, Jason De León.

Context. A103-1S (the lens of refuse, possibly an open-air midden).

Illustrations. Figures 6.7 and 6.9.

Stratigraphy. The sediment was yellowish brown (10YR 4/4–5/4) with medium-sized rocks and large sherds.

Depositional History. During the final Formative occupation, a lens of refuse accumulated or was purposefully dumped in an open-air setting. Lot 1630 represents only a corner of the deposit, which continues to the north/northeast.

Feature A104

A structural collapse from the latest Formative occupation.

Phase. Tenexac; above Lot 1636, which was 14C dated to A.D. 90 to 320 (2σ).

Unit. 30H.

Lot. 1638.

Excavator. Paloma Diez.

Illustration. Figure 6.11.

Stratigraphy. Sediment was very dark grayish brown (10YR 3/2) with medium to large rocks. It was partially embedded in, and extended above, the latest Formative living surface, which contained large sherds.

Depositional History. The burned structural remains of structures 14M-1 and 14M-2 collapsed downslope into the patio between them following the final Formative occupation.

Feature A105

A portion of an irregular pit/natural depression in tepetate.

Phase. Texoloc/Early Tezoquipan; 14C dated to 790 to 420 B.C. (2σ)

Unit. 30H.

Lot. 1643.

Excavator. Paloma Diez.

Context. A105-1S (the fill of the pit).

Illustration. Figure 6.13.

Stratigraphy. The fill was a mix of sediment and tepetate, generally brown (10YR5/3), with two bands of carbon representing in situ burning. Carbon from one of these returned the Texoloc date. Abundant artifacts were encountered.

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Depositional History. The feature was probably modified into an irregular pit because the elevations of the surrounding tepetate appear too variable to represent completely natural undulations. It was likely an open or semisubterranean refuse dump designed for the disposing and burning of domestic garbage and eventually falling into disuse and being covered by another early occupation surface.

Feature A106

In situ burning on the floor that articulates with the northern wall of Structure 14M-3.

Phase. Late Tezoquipan; 14C dated to 160 B.C. to A.D. 70 (2σ).

Unit. 23S.

Lot. 1657.

Excavators. David Carballo, Jason De León.

Context. A106-1P (the stain of burned floor).

Illustrations. Figures 6.7 and 6.12.

Stratigraphy. Burned proto-tepetate (a transitional stratum in the process of induration) varying in color from red (7.5YR 4/8) to almost black (10YR 2/2, very dark brown).

Depositional History. An activity surface in front of the northern wall (Wall 1) of Structure 14M-3. Its articulation with the wall indicates that the burning occurred after the wall's construction, but probably soon after. The burning did not include in situ artifact deposition; however, one of the abundant flecks of carbon provided the Late Tezoquipan date.

AREA D: EXCAVATION AND STRATIGRAPHY

Area D was selected for excavations because of its proximity to the central plaza and the presence of domestic artifacts such as grinding tools visible on the surface. The area is positioned on a gradual decline passing from the northeastern slopes of Cerro La Gazca to the flat site center and is currently covered with junipers and magueys, the latter crowning undulating metepantles. No structures are visible on the surface; however, a stone wall to the east extends northwest–southeast for approximately 45 m (Figure 6.13). The low wall runs fairly straight, unlike nearby terrace walls and metepantles. It appears to be of some antiquity, although it is unclear whether or not it was constructed in pre-Hispanic times.

An excavation grid consisting of a 68-x-52-m area divided into alphanumeric 2-x-2-m units was established in

Figure 6.8. 14M-3 excavation, showing northern facade (Wall 1) and Feature A102 (pit at bottom right).

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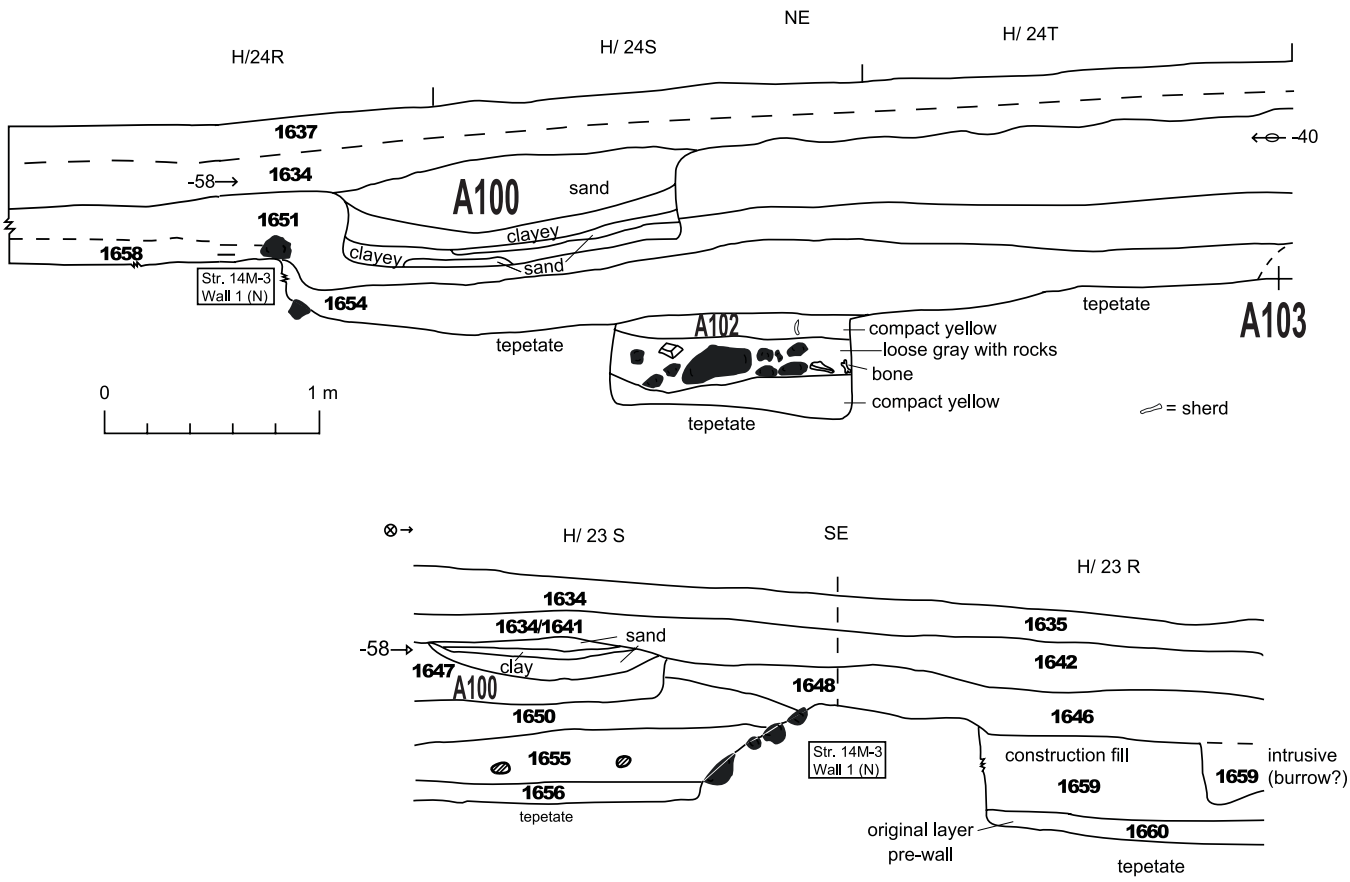

Figure 6.9. Northeastern and southeastern profiles of 14M-3 excavation. Units are 2 m wide.

Area D. The grid axis conforms roughly to nearby terrace alignments, approximately 45 degrees west of magnetic north. Fourteen units were excavated in Area D, twice the number opened in Area H. The larger exposure was made possible by the shallow deposits in this part of the site. Excavations were undertaken as two blocks: a larger one consisting of 11 adjacent units organized in a serpentine pattern and a smaller one consisting of 3 adjacent units. Units were excavated to sterile tepetate except in the case of two that were bisected and excavated as 1-x-2-m sections, and a rock concentration in the large excavation, which was not dismantled. Compared to other excavation areas in La Laguna, the deposits in Area D were very shallow (28 to 58 cm in the large excavation and 50 to 75 cm in the small excavation) and their depositional sequence was straightforward.

The large excavation consisted of units 58Q-R, 60M-Q, 62M-N, and 64M-N (Figure 6.14). Due to its length, three separate data points were established for taking elevations, accounting for the differing elevations denoted in Figure 6.13. Topsoil ranged from 20 to 30 cm in all units (10YR 4/2, grayish brown), and in some cases two lots were designated for the topsoil (lots 1665, 1669, 1679, 1680, and 1687 being the lower designation in the respective units and ranging 15 to 25 cm from the surface). The Tezoquipan phase living surface overlay tepetate and was a mottled layer composed primarily of dark grayish brown (10YR 4/6) clayey soil and dark yellowish brown (10YR 3/3) soft or proto-tepetate. This living surface was designated lots 1666, 1670, 1676, 1677, 1678, 1681, 1684, 1685, 1697, and 1699. Two small trees were removed prior to excavations; their roots and rodent burrows may be attributed for the introduction of any recent materials into this living surface.

A rock concentration was encountered to the south of the large excavation. Its poor state of preservation is suggestive of collapse from a structure located upslope or the remains of a low foundation or simple stone platform (an *empedrado*) that was significantly disturbed. We favor the former interpretation, as Feature A110, a rectangular concentration of flagstones (*lajas*), was positioned just north of the rubble concentration but was found relatively intact.

Three other Formative features were encountered in the large excavation. These included a circular pit and a ditch partially excavated into tepetate (features A107 and

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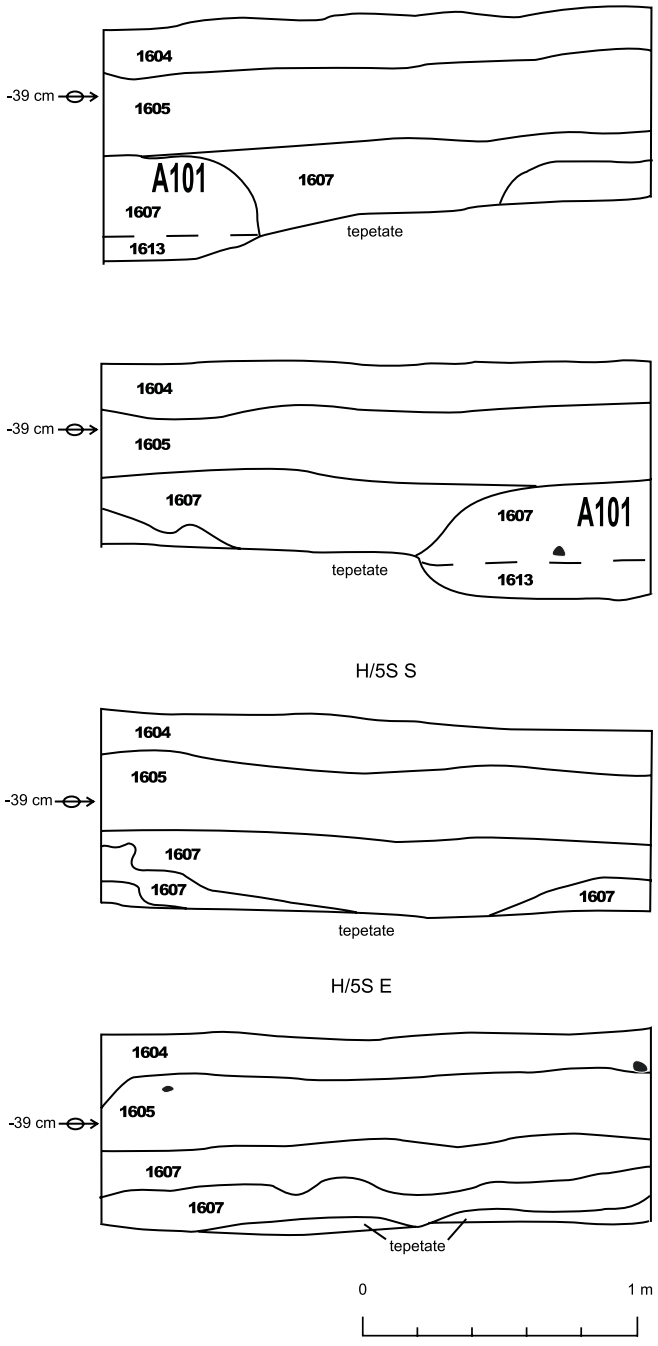

Figure 6.10. Area H Unit 5S profiles, showing Feature A101. Unit is 2 m wide.

A109, respectively) and an irregular pit completely excavated into tepetate (Feature A112). The remaining depressions of softer sediment in tepetate are more dubious as pre-Hispanic cultural features. It is possible that features A108, A111, and A113 were small pits that provided desirable environments for root penetration or that they are completely natural formations. (Feature A108 seems more to have been affected by burrowing animals.) In either case they should be considered disturbed contexts.

Of the features with little or no disturbance, features A110 and A112 stand out both for their associated materials and for their dated stratigraphic contexts of a Late Tezoquipan–phase feature (Feature A110) directly above a Texoloc feature (Feature A112). Feature A110 was a concentration of flagstones that gave the impression during excavations of being a tomb of the type documented by Uruñuela and Plunket (2001) at Tetimpa. However, nothing was discovered underneath the stones, which in some cases had been worked bifacially along their edges to create a tightly articulated mosaic (Figures 6.15, 6.16).

We interpret Feature A110 as a domestic altar for the following reasons:

(1) The flagstones were clearly modified and formed to create a level and symmetrical rectangular surface. The disturbance of this shape to the west was caused by root uplift from a tree that was removed during excavations. (2) The surface was too small to have served as a functional floor. (3) Several nonlocal artifacts were recovered on top of the feature. These included a large greenstone sphere, a used greenstone ax head, a fragment of polished iron ore, and marine shell. These materials were imported to La Laguna from some distance and are relatively scarce at the site (Figure 6.17).

A radiocarbon date from the sediment immediately surrounding Feature A110 (Lot 1700) possesses a range of 40 B.C. to A.D. 130, representative of the Tenexac phase and the final Formative occupation.

Feature A112 is interesting for its depth within tepetate—reaching 40 cm at its deepest—and for the presence of large sherds associated with a Texoloc date of 750 to 390 B.C. The pit's form is highly irregular, and it was filled with a sandy sediment (10YR 3/4, dark yellowish brown) mottled together with a clayey sediment (10YR 2/2, very dark brown). Although these layers appear stratified in the profile illustrations (Figure 6.17, Figure 6.18), during excavations their positioning was often reversed; therefore, the deposit was removed entirely as Lot 1703.

The small excavation in Area D consisted of two adjacent units extending to half of a third unit (1 x 2 m) (Figure 6.20). The topsoil was excavated as two combined lots 30 to 40 cm from the surface and consisting of pale to weak brown sediment (10YR 5/2–3/2). A lens of sherds encased in pale brown (10YR 3/3) sediment was registered as Feature A114, likely representing the living surface at the time of the Formative abandonment. The accumulated late Formative occupation was similar soil extending 17 cm to tepetate (lots 1714, 1715, and 1721). A flexed burial (Feature A115, Burial 1) was excavated into the living floor and can therefore be assigned to the later Formative occupation as well (Figure 6.21). A second deposit of cut and disarticulated bone within a shallow circular depression containing rocks (Feature A116, Burial 2) was excavated into soft or proto-tepetate and could be earlier.

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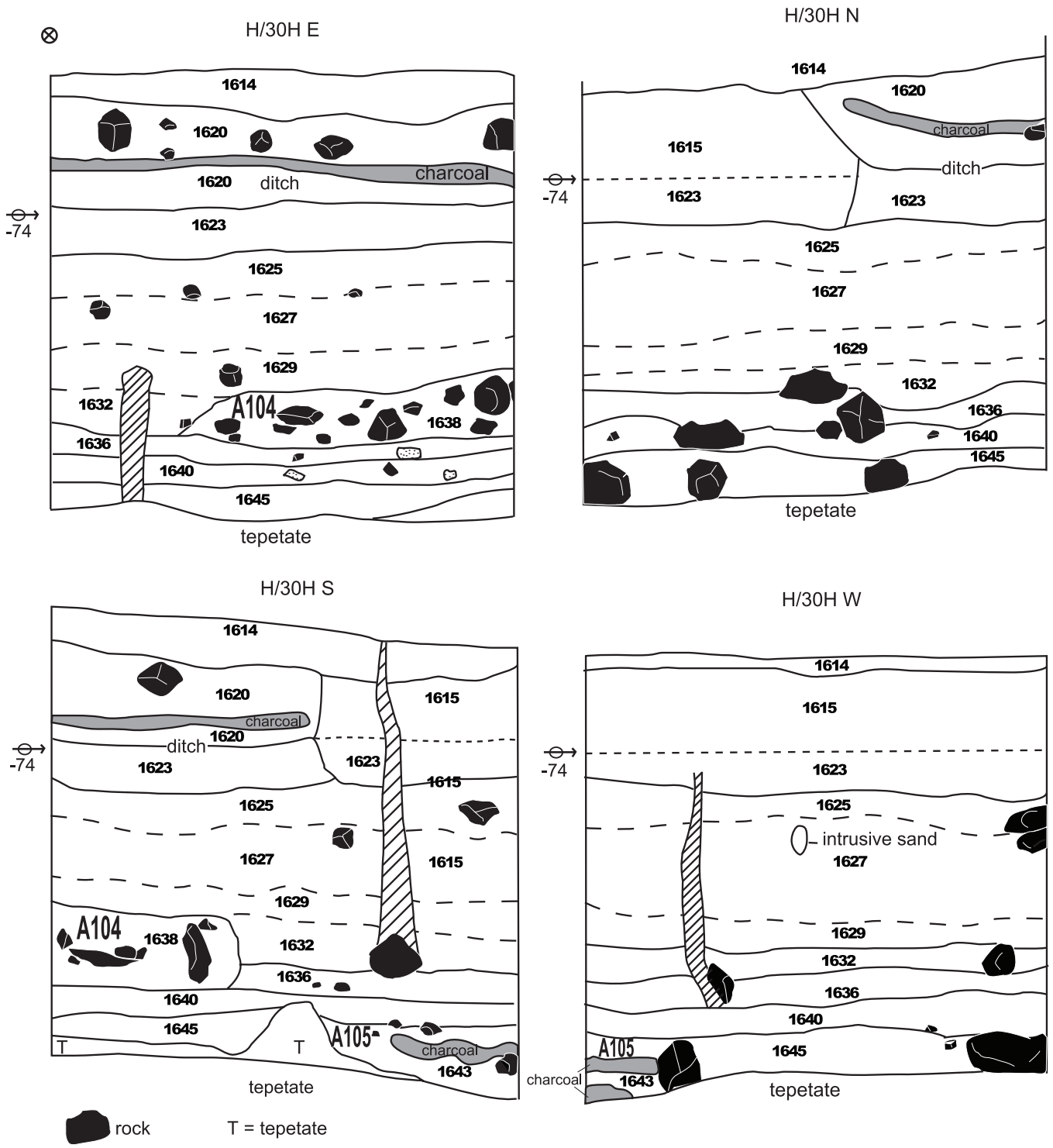

Figure 6.11. Area H Unit 30H profiles, showing features A104 and A105. Unit is 2 m wide.

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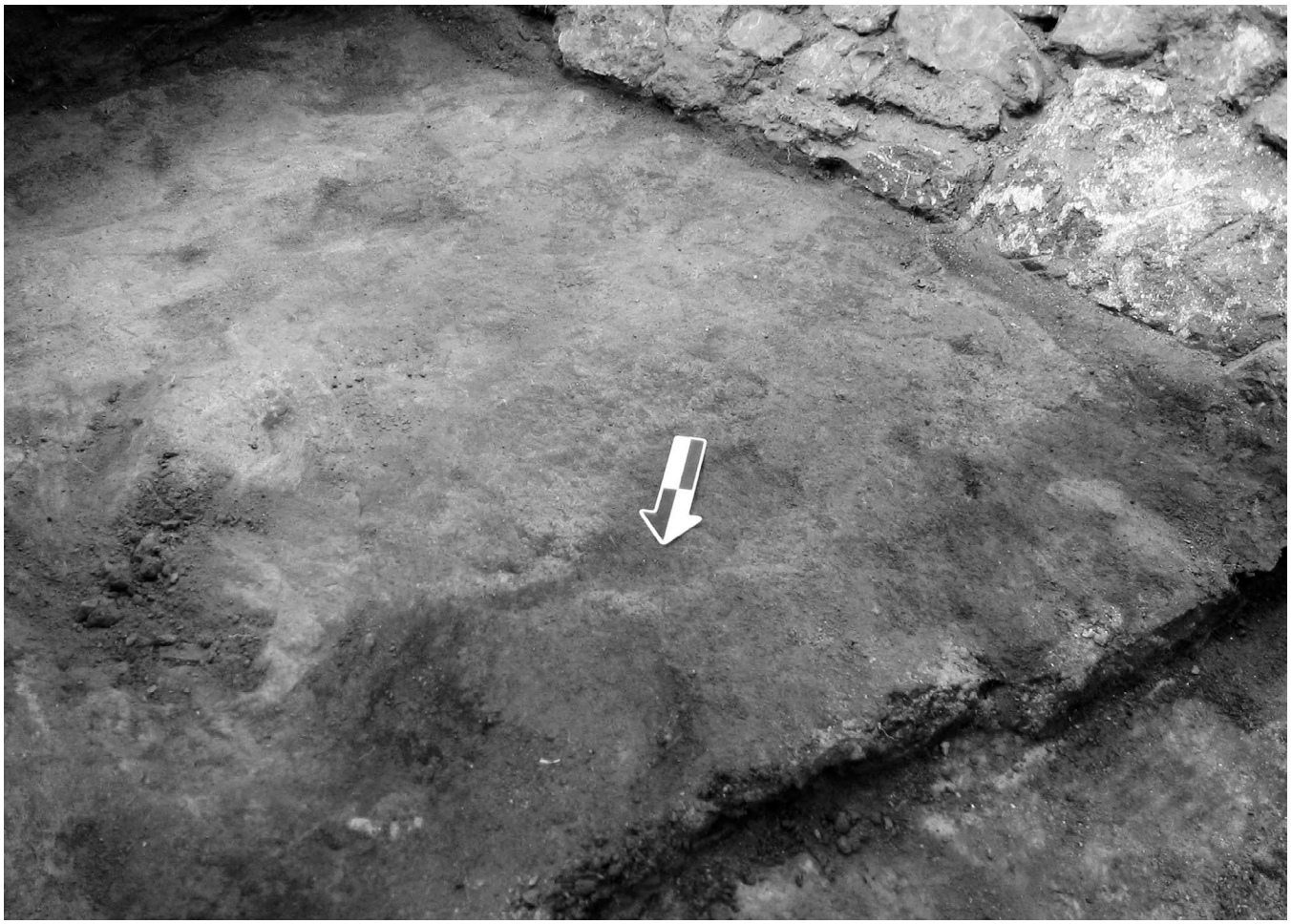

Figure 6.12. Area H, Feature A106. In situ burning on floor articulating with Structure 14M-3.

AREA D: CONTEXTS

Feature A107

A circular pit excavated into a late Formative living surface, with its base extending into tepetate.

Phase. Tezoquipan.

Units. 58Q, 60P, and 60Q (west).

Lots. 1682, 1692.

Excavators. David Carballo, Jason De León, Paloma Diez.

Context. A107-1S (pit fill).

Illustrations. Figures 6.14, 6.18, and 6.19.

Stratigraphy. Dark loose sediment in the top of the pit (Lot 1682, 10YR 4/2–3/2, very dark grayish brown) becomes lighter at the base where it contacts tepetate (Lot 1692, 10YR 4/4, dark yellowish brown).

Depositional History. The pit was excavated into the late Formative living surface, suggesting that it is late. Its circular form seems appropriate as a roasting pit, but little evidence of burning was encountered. Materials were few and small, suggesting it filled gradually.

Feature A108

An irregular pit excavated into a late Formative living surface, with its base extending into tepetate.

Phase. Late Tezoquipan.

Unit. 58Q.

Lot. 1683.

Excavators. David Carballo, Jason De León, Paloma Diez.

Contexts. A108-1S (pit fill).

Illustrations. Figure 6.14 and Figure 6.19.

Stratigraphy. Dark loose sediment (3/2, very dark grayish brown) extending to tepetate.

Depositional History. The feature may be a portion of a small pit that was significantly disturbed by a burrowing rodent or a tree root; or it may have formed exclusively through such processes. Very few materials were encountered.

Feature A109

A ditch excavated into tepetate.

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Phase. Late Tezoquipan/Tenexac.

Units. 60O and 60P.

Lots. 1693, 1696.

Excavators. David Carballo, Jason De León, Paloma Diez.

Contexts. A109-1P (the ditch), A109-2S (its fill).

Illustrations. Figure 6.14, Figure 6.18, and Figure 6.19.

Stratigraphy. A mixture of dark yellowish brown (10YR 4/4) and dark brown (10YR 3/3) sediments that were mostly distinguished as lots 1693 and 1696, respectively, although they were somewhat mottled. The layers contained medium-sized stones and medium-large sherds.

Depositional History. The ditch was excavated into tepetate, likely during the early occupation of the area and possibly to divert water. It appears to have been purposefully filled with domestic refuse and dirt, as its associated sherds were too large to have accumulated gradually through natural processes.

Feature A110

A domestic altar formed of shaped flagstones (*lajas*) creating a rectangular mosaic.

Phase. Tenexac; 14C date of 40 B.C. to A.D. 130 (2σ) for Lot 1700.

Units. 64M and 64N.

Lots. 1698, 1700, 1701, 1709.

Excavators. David Carballo, Jason De León, Paloma Diez.

Contexts. A110-1P (the flagstones and the floor under the altar, including in situ burning, lots 1701 and 1709), A110-2S (the refuse immediately on top of the flagstones, lots 1698 and 1700).

Illustrations. Figures 6.14–6.18.

Stratigraphy. The sediment above and between flagstones was dark brown (10YR 3/3) and clayey (lots 1698 and 1700). Lot 1700 was from the western portion of the feature, where modern roots had created uplift of the stones. Lots 1701 and 1709 were at the same layer (underneath the flagstones) but differ in color because 1709 was a burned stain. Lot 1701 was a mix of dark brown and dark yellowish brown (10YR 3/3, 10YR 4/6); lot 1709 was black (10YR 2/1).

Depositional History. The late Formative living surface is represented by lots 1701 and 1709 (which includes in situ burning). Flagstones were chipped to fit and positioned as a rectangular mosaic, likely serving as a domestic altar. During abandonment certain items were left on top of the flagstones, and gradually the sediment from lots 1698 and 1700 covered the feature. Some of this sediment was also from between the flagstones and represents preabandonment fill.

Feature A111

An irregular pit excavated into a late Formative living surface, with its base extending into tepetate; disturbed or completely formed by tree roots.

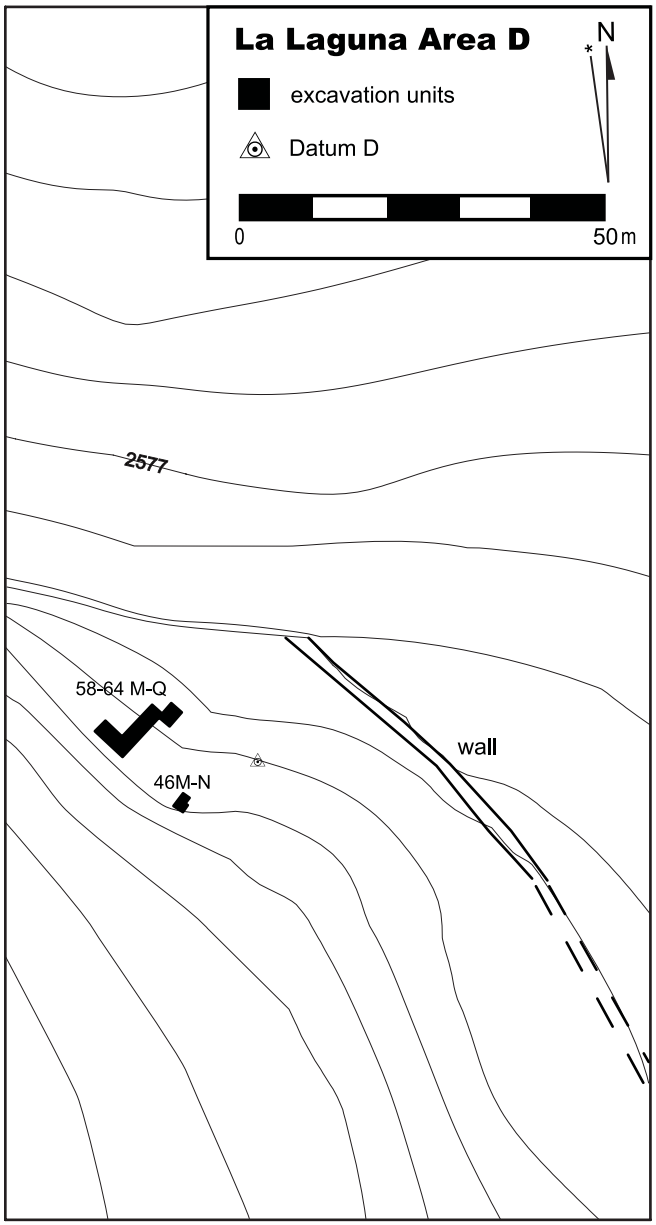

Figure 6.13. Area D showing excavation blocks and stone wall.

Phase. Late Tezoquipan/Tenexac.

Unit. 64M.

Lot. 1702.

Excavators. David Carballo, Jason De León, Paloma Diez.

Context. A111-1S (the pit fill).

Illustration. Figure 6.14.

Stratigraphy. Very dark brown sediment (10YR 2/2).

Depositional History. The feature is either a modern tree throw or a small Formative pit that was penetrated by a large tree and its roots. It connects with Feature A113.

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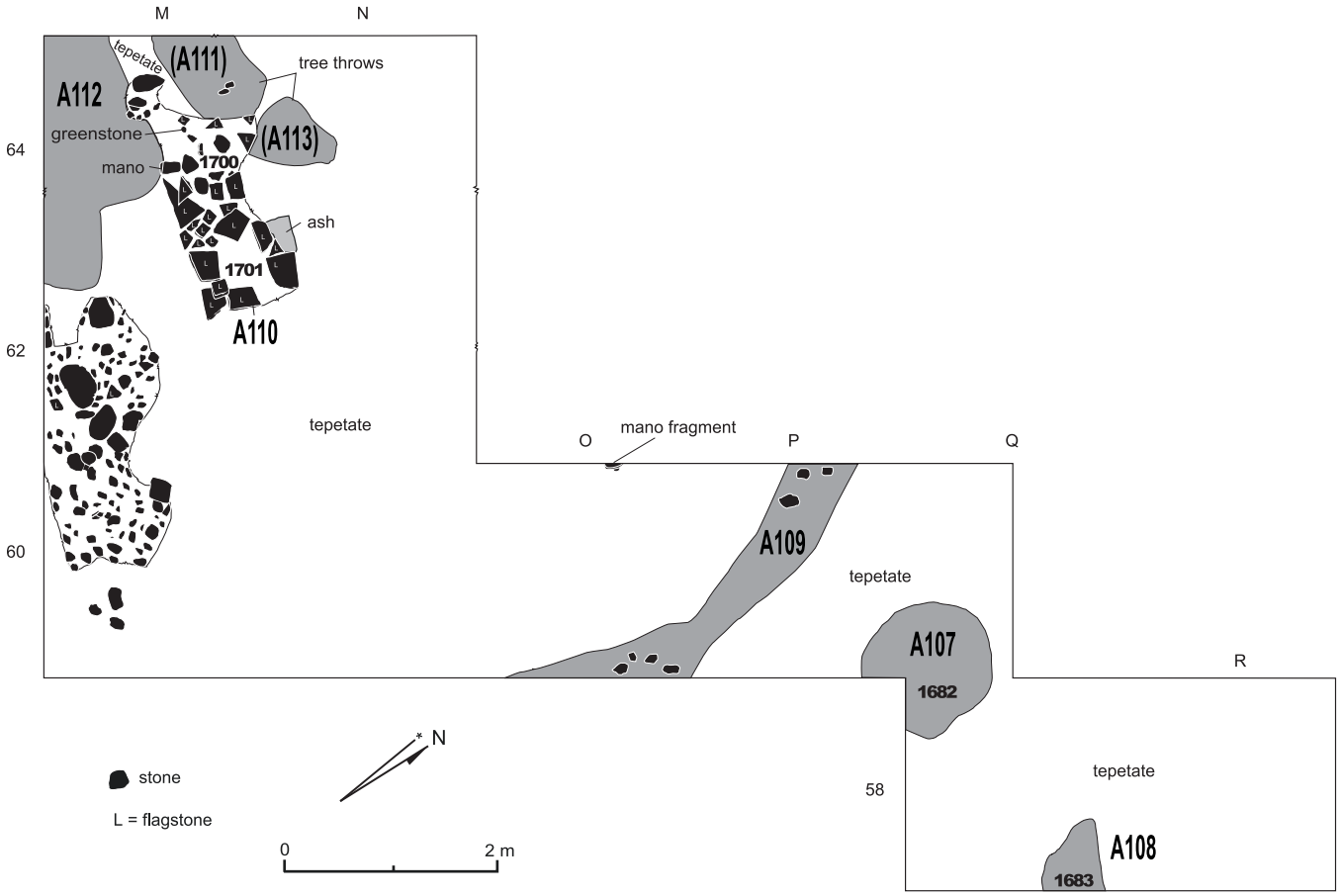

Figure 6.14. Large excavation in Area D, showing rock concentration and associated features.

Feature A112

A portion of an irregular pit excavated deeply into tepetate.

Phase. Texoloc/Early Tezoquipan; 14C date of 750 to 390 B.C. (2σ).

Unit. 64M.

Lot. 1703.

Excavators. David Carballo, Jason De León, Paloma Diez.

Context. A112-1S (the pit fill).

Illustrations. Figures 6.14, 6.18, and 6.19.

Stratigraphy. Mottled dark and dark yellowish brown sediment (10YR 3/3–3/4).

Depositional History. The feature was a large irregular pit of unknown function, possibly serving to extract clay or tepetate. It was filled rapidly with fresh trash, including large sherds.

Feature A113

An irregular pit excavated into a late Formative living surface, with its base extending into tepetate; disturbed or completely formed by tree roots.

Phase. Texoloc/Early Tezoquipan.

Unit. 64N.

Lot. 1707.

Excavators. David Carballo, Jason De León, Paloma Diez.

Context. A113-1S (the pit fill).

Illustration. Figure 6.14.

Stratigraphy. Dark yellowish brown sediment (10YR 3/3).

Depositional History. Like Feature A111, with which it connects, this feature represents either a modern tree throw or a small Formative pit that was penetrated by a large tree and its roots.

Feature A114

A lens of large sherds at the uppermost Formative level, possibly corresponding to site abandonment.

Phase. Tenexac.

Unit. 46M.

Lot. 1712.

Excavators. David Carballo, Paloma Diez.

Context. A114-1S (the lens).

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Figure 6.15. Feature A110, a flagstone concentration that likely served as a domestic altar.

Illustration. Figure 6.22.

Stratigraphy. Loose brown (10YR 3/3) clayey sediment.

Depositional History. During the latest Formative occupation, a lens of refuse was left on the final occupation surface.

Feature A115

A flexed burial in a pit excavated into the Formative living surface and penetrating down to tepetate at the base.

Phase. Late Tezoquipan/Tenexac.

Units. 44M (north) and 46M.

Lots. 1716, 1722

Excavators. David Carballo, Paloma Diez.

Contexts. A115-1B (the burial).

Illustrations. Figures 6.20–6.22.

Stratigraphy. Loose brown (10YR 4/3) sediment. At the base of the pit there were large rocks and flecks of carbon (Lot 1722).

Depositional History. The pit was excavated into the Late Formative living surface down to tepetate. Large rocks were placed at the bottom, followed by intentional burning. The flexed body was laid on its back, rotating toward its left side, with the top of the head oriented to the north. The fill surrounding it was deposited in one episode.

Feature A116

A disarticulated burial in a pit excavated into a Formative living surface and penetrating down to tepetate at the base.

Phase. Late Tezoquipan/Tenexac.

Units. 46M and 46N.

Lot. 1717.

Excavator. David Carballo, Paloma Diez.

Context. A116-1B (the bones).

Illustration. Figure 6.20.

Stratigraphy. Semicompact brown (10YR 5/3) sediment with medium-large rocks, including one flagstone placed on its side

Depositional History. A shallow pit was excavated into a Formative living surface and tepetate. The burial should be earlier than Feature A115, but how much earlier is not clear. It is slightly lower stratigraphically and the fill is more compact, but the two are very near to one another. Rocks ring the base of the pit; these include an inverted

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Figure 6.16. Bifacially worked flagstones (*lajas*) from Feature A110.

Figure 6.17. Artifacts recovered on top of Feature A110, including a greenstone ax head, a sphere, a shell bead, and a piece of polished pyrite.

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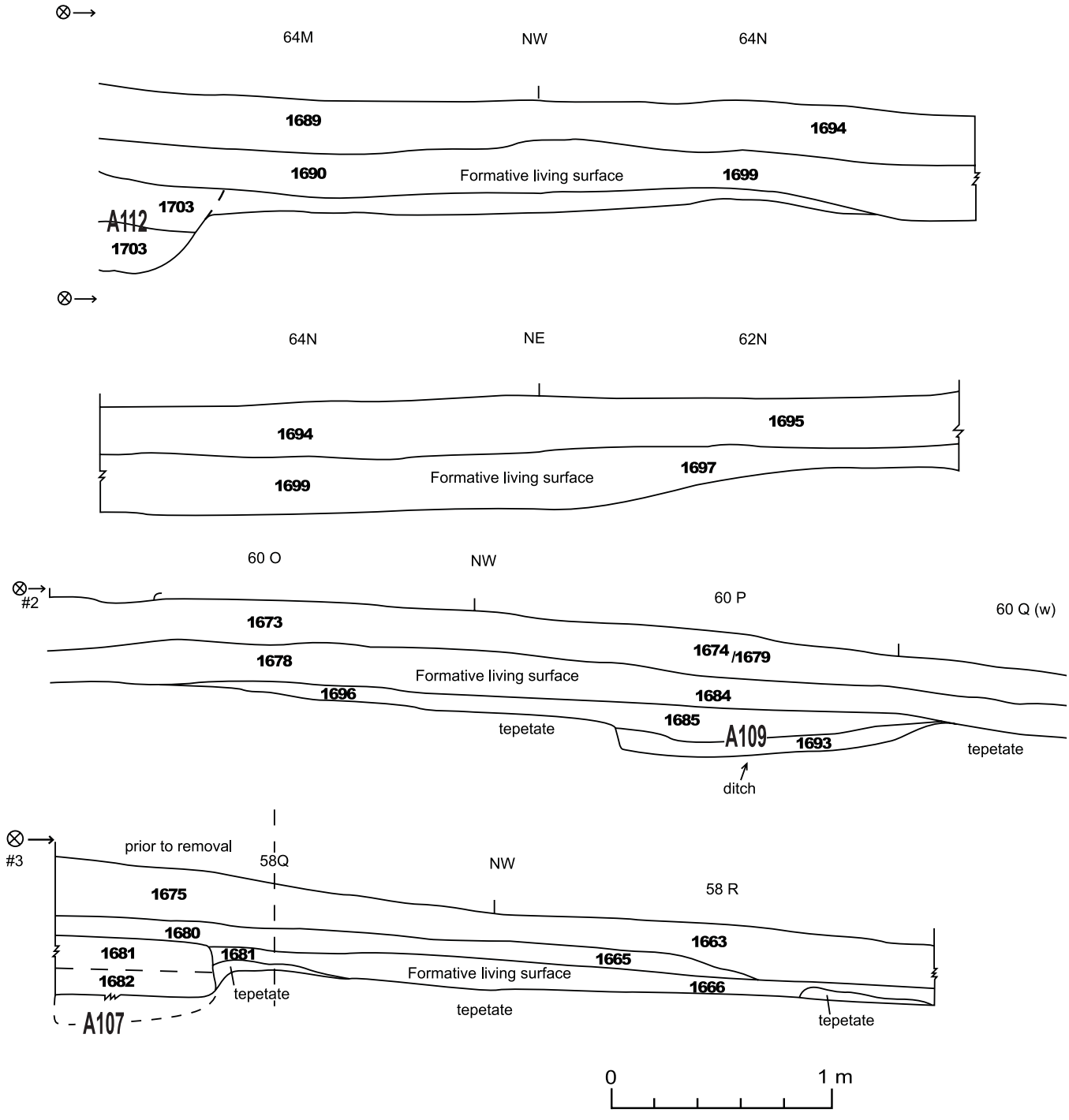

Figure 6.18. Area D, profiles from large excavation.

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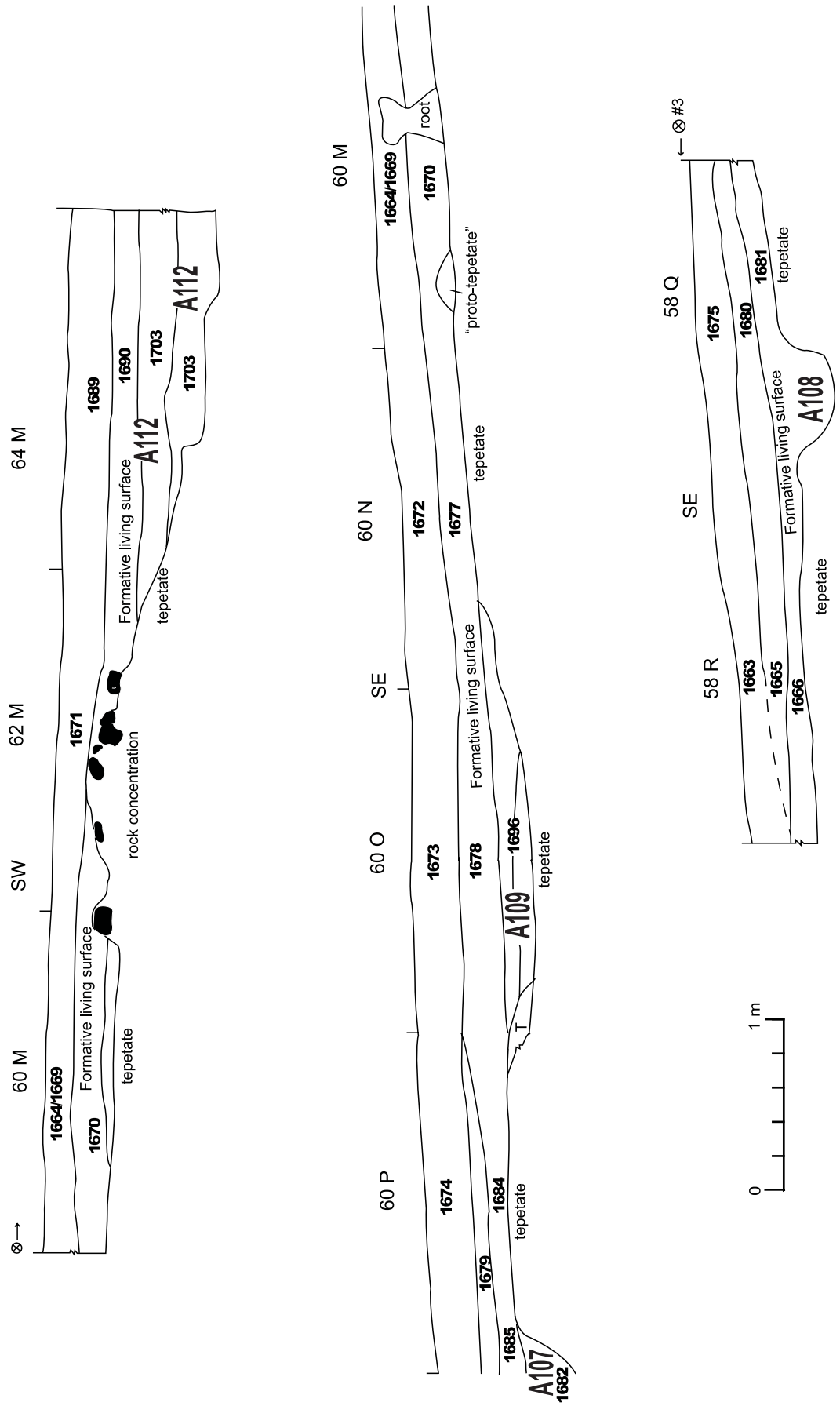

Figure 6.19. Area D, profiles from large excavation.

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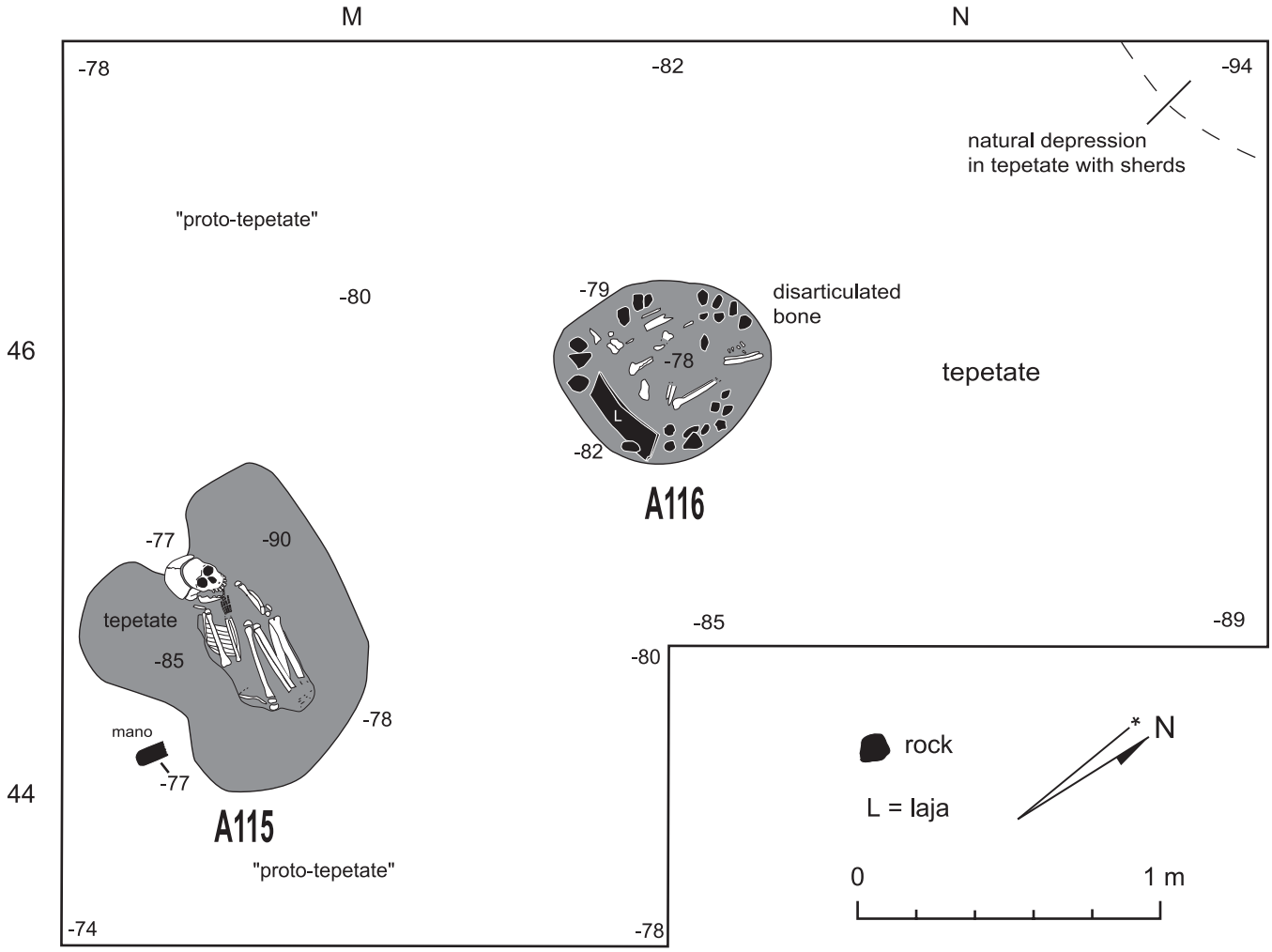

Figure 6.20. Small excavation in Area D, showing features A115 and A116.

flagstone that follows its contours. Cut and disarticulated bones were then placed in the pit, perhaps associated with some burning event. The deposit was covered rapidly with dirt.

DISCUSSION

In evaluating the lifeways of the inhabitants of La Laguna, the mapping program and the excavations at areas H and D are important in several respects. Site mapping demonstrated the Formative-period occupation to be considerably larger than the 30 ha estimated by the PANT survey (Merino Carrión 1989). One hundred ha, or 1 km^2, is more accurate, though the effects of colluviation on limiting the visibility of low structures at the site should be kept in mind. Elevated structures corresponding to civic-ceremonial buildings and high-status residences were mapped in the site center as well as on the slopes of the three hills surrounding the site. The higher degree of planning in the site center relative to its periphery could relate to temporal variability, but in one case documented so far (Area H) constructions are contemporaneous with the final Formative occupation in the site center. Accordingly, the variability in orientations between structures in the central precinct and surrounding elevated structures is likely indicative of conformity to the topography of different areas of the site. Yet it may also represent localized labor organization, with community-level coordination in the site center and factional- or neighborhood-level coordination in surrounding areas.

Excavations in Area H and Area D provide dated contexts representative of the earliest and latest Formative-period occupations at the site. In Area H the articulation of the northern wall of Structure 14M-3 and Feature A106 suggests that this platform between the much larger structures 14M-1 and 14M-2 was constructed and occupied during the later Formative occupation. PALL excavations in 2006 demonstrated that Area H was a residential compound corresponding to one of the community's high-status families, and Structure 14M-3 likely served for food

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storage and preparation (Carballo 2009). In Area D the concentration of nonlocal materials associated with Feature A110 demonstrates that the inhabitants of the site during the later Formative occupation participated in exchange networks connecting the Basin of Mexico, Gulf Coast, and other regions through the natural corridor of communication running through northern Puebla-Tlaxcala (see Carballo and Pluckhahn 2007). Thus far much lower densities of such interregional exchange goods have been registered for La Laguna's initial occupation. Spatial and temporal variability in access to long-distance exchange commodities will therefore be a critical dimension in subsequent evaluations of the social constitution of the community during the initial urbanization of the Central Highlands and political expansion of the Teotihuacan state.

Figure 6.21. Area D, Feature A115. Flexed burial in a shallow pit.

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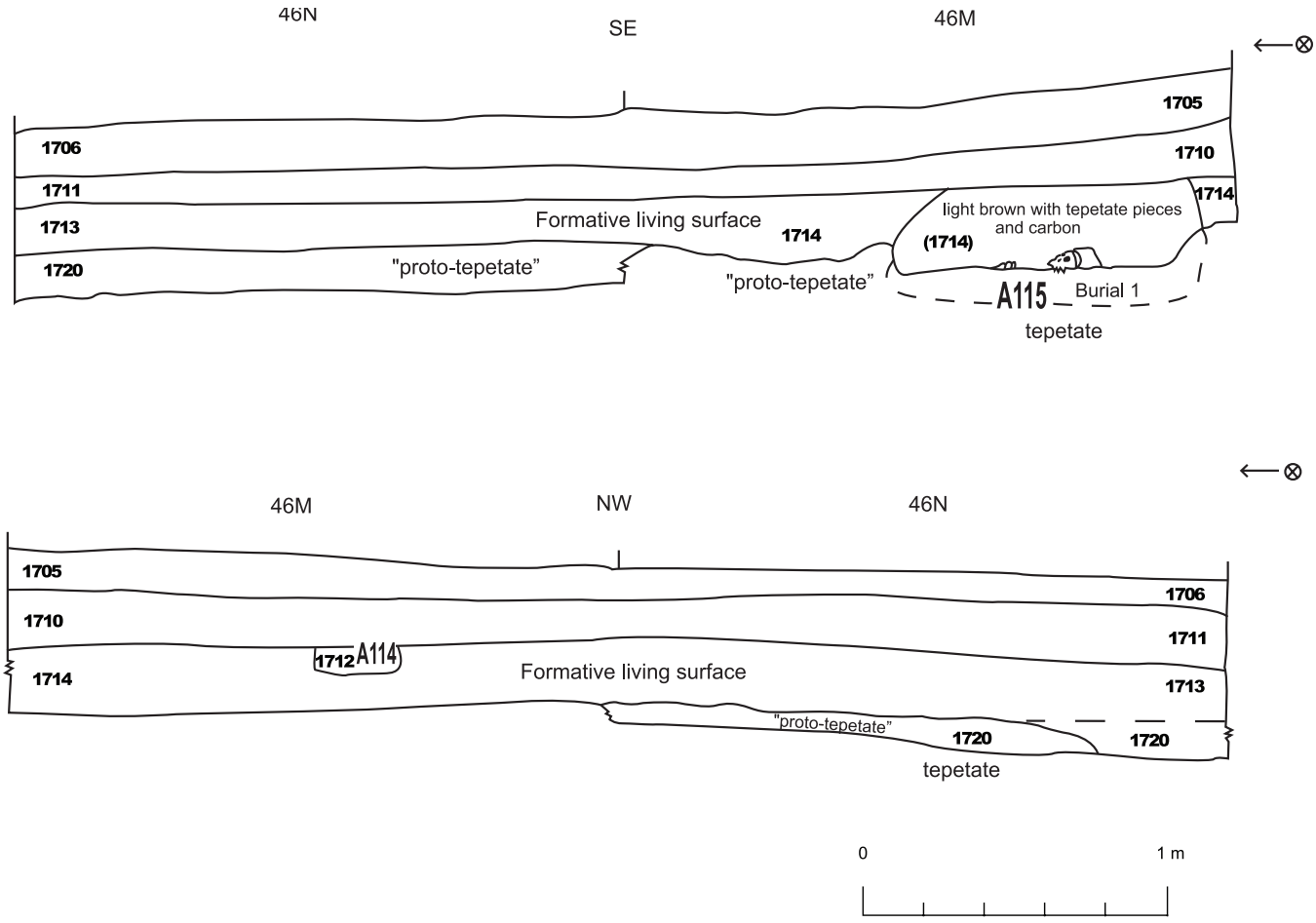

Figure 6.22. Area D, small excavation profiles.

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CHAPTER 7

La Laguna: Formative Contexts Away from the Site Center

Aleksander Borejsza and Isabel Rodríguez López

THE EXCAVATIONS described in this chapter were conducted in 2003 and 2004 in areas A, B, and F of La Laguna (Figure 5.1). They were not designed to recover domestic contexts or large amounts of artifacts of Formative age, and their discovery was to some degree fortuitous. In these areas, all situated on sloping terrain away from the site center, we wanted to investigate the age, morphology, and function of ancient agricultural terraces. The remains of earthen berms and ditches, stone walls, and all sorts of topographic irregularities had suggested to us and to previous visitors to the site (Trautmann 1981:55) the existence of several superimposed terracing systems. We thought that at least some terraces had been built and used in the Formative. Excavation proved us wrong. All terraces turned out to be Postclassic, Colonial, or more recent (Borejsza 2006; Borejsza et al. 2008). We learned, however, that in many parts of the site the terrace fills or colluvial deposits buried and protected earlier features or occupation surfaces that were indeed of Formative age. Urged by the archaeological dictum of excavating to sterile, and by the desire to comprehend the complex cultural stratigraphy, we excavated these Formative contexts within the confines of the units we had opened up. In later years, David Carballo's La Laguna project took advantage of this stratigraphic preview to conduct more extensive excavations. Carballo expanded on Area F excavations in 2005, and Borejsza returned to Area B in 2010. The results of the post-2004 research are not reported in this book and are only summarily referred to where needed to aid the interpretation.

The contexts described in this chapter belong mostly to the first occupation of La Laguna, between 600 and 400 B.C. The ceramics they produced encompass the latter part of the Texoloc complex and, above all, the Tezoquipan complex. Some platform fills and other contexts we excavated may belong to the second occupation of the site, after 50 B.C., but their ceramics are virtually identical to those of the first occupation and are probably carry-ups. In areas A and F we discovered almost exclusively pits, mostly bell shaped, truncated to different degrees by erosion during and after the Formative. In Area B we uncovered a more complete set of Formative contexts that included a large midden, varied mortuary deposits, architectural remains, and features of unknown function. Below we briefly mention how we excavated and recorded the contexts in question. We then present the findings for each of the three areas, from least to most complex. We end with some general observations about the extent and nature of Formative occupation in areas away from the site center.

METHODS AND CONVENTIONS

The study of agricultural features called for quite different excavation strategies than those described in previous chapters of this volume. Differences in recording routines and some terms used also require comment. In Area A, only one unit was excavated. In areas B and F the excavation units were many. They were blocks of very variable size, each labeled by a combination of the area letter and an Arabic numeral (for example, F-1, F-2, and F-3; see figures 7.4. and 7.30). The first units were always trenches 1.5 m wide and oriented parallel to slope. Other units were then added on, their placement, shape, and size being dictated by the deposits and features uncovered. All units within a given area were aligned on the same grid and referred to the same datum. The grids were not oriented to cardinal points. We designated an arbitrary grid north, which could differ up to 45 degrees from magnetic north. References in

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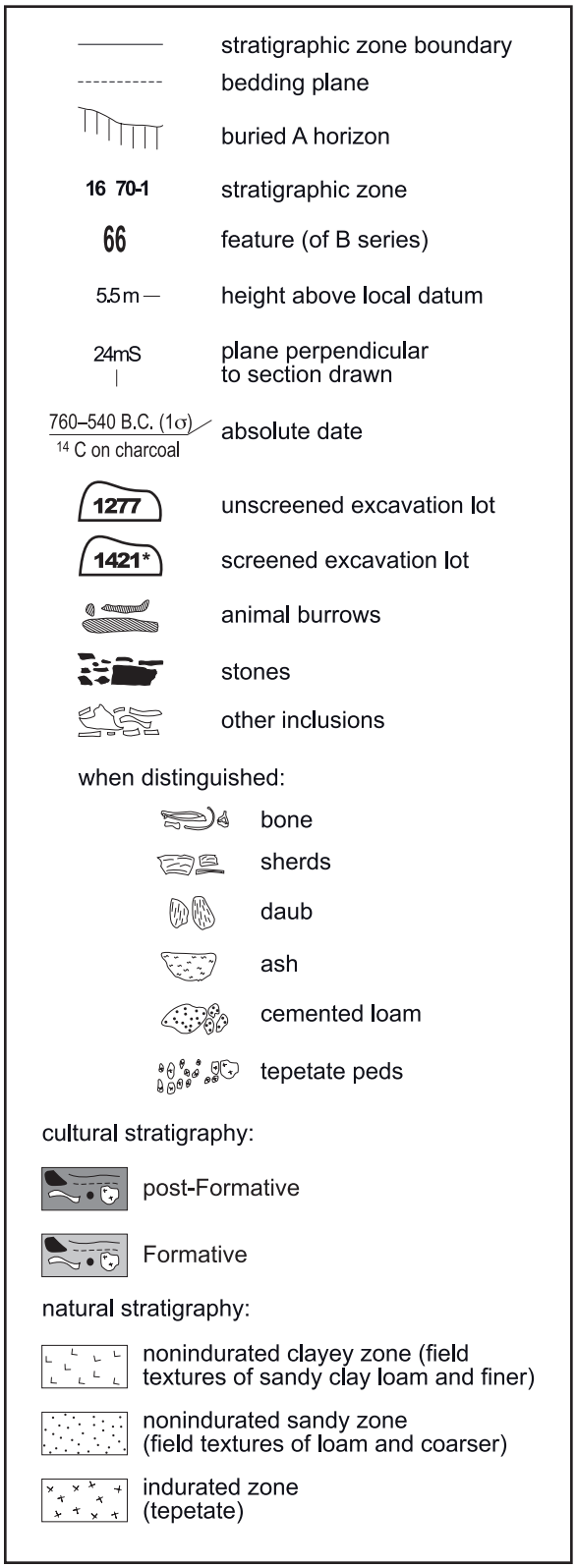

Figure 7.1. Key to figures. Feature numbers may appear in black or white.

the text are to the grid directions. We also designated an arbitrary grid origin and local datum. The vertical plane that is aligned north–south and passes through the grid origin is labeled 0W-E. To the west, the planes parallel to it are labeled as 1mW, 2mW, 3mW; those to the east as 1mE, 2mE, 3mE, and so on. In an analogous way, the vertical plane orthogonal at the origin to 0W-E is labeled 0N-S. The planes parallel to the latter are labeled 1mN, 2mN, 1mS, 2mS, and so on.

Inasmuch as possible, the removal of earth followed actual stratigraphic zones or subdivisions thereof, in the reverse order of deposition. Finds were assigned to volumetric lots. Their outlines are superimposed onto stratigraphic sections in figures 7.8, 7.12, 7.13, 7.17, 7.34, 7.40, and 7.50. These figures allow us to judge to what extent the lots correspond to actual features and stratigraphic zones. Many analyzed lots do not appear in these figures. This is simply because some were excavated away from the sections shown, while others were assigned to items picked out of sections and thus do not describe any volume of earth. Lots discussed in this chapter bear numbers from 1000 to 1501. Finds of special interest were piece-plotted and recorded as individually numbered items. The item numbers ran from 1 to 999 and 2000 to 2199. Pits, burials, walls, floors, and other architectural remains received feature numbers from 1 to 99. Throughout this volume, all the features described in this chapter are preceded by a B. (See Chapter 1 for a discussion of nomenclature.) Stratigraphic zones were noted during excavation, but they were formally defined, numbered, and described only at the stage of drawing sections. A stratigraphic zone is a volume of earth of more or less uniform appearance, which suggests that it was deposited under the same conditions and modified by soil formation and other post-depositional processes to a comparable degree. Zones were numbered with Arabic numerals. The zones that make up the fill of human-made features are sometimes identified by a composite label. For example, 61-5 refers to Zone 5 within Pit B61. The description of each zone followed standardized conventions used in soil science and geomorphology (Birkeland 1999:347–359; Soil Survey Staff 1993). In complex cultural deposits, such conventions often had to be augmented by more descriptive terms referring to attributes not covered by earth science manuals. The general stratigraphy is presented in a series of figures (starting with Figure 7.7) using the symbols keyed in Figure 7.1. Zones of Formative age are shaded pale gray. The internal stratigraphy of some feature fills is shown in separate figures, such as figures 7.21 and 7.50. None of the numbering schemes mentioned is to be taken to imply anything about age or order of deposition.

The analytically relevant contexts described in this chapter are listed in Chapter 8, along with the excavation lots associated with each of them. For the analysis of ceramics and other materials, we categorized lots according to the degree of their association with the Formative oc-

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cupation of the site. Preference was given to closed contexts, mostly pit fills and mortuary offerings. Those that yielded large samples of diagnostic sherds were chosen for the Chronological Sample (see Chapter 8, Table 8.1). Most other lots indisputably deposited during the Formative but belonging to open contexts, such as platform fill, unconfined architectural debris, or colluvium, were included in the Expanded Refuse Sample (Table 8.4). The only ones that were excluded were those that contained small samples of heavily fragmented tertiary refuse. They ended up in the Maximal Refuse Sample, together with all post-Formative deposits, mostly terrace fills or colluvia of Postclassic or more recent age. It is to be stressed that even these are dominated by Formative artifacts, redeposited by erosion or terrace construction. In the Maximal Refuse Sample, attention was paid only to artifacts of intrinsic worth. This categorization is obviously not equivalent to that into primary, secondary, and tertiary refuse, as employed in previous chapters. We do assess the origin of the refuse analyzed in these same terms in the paragraphs that follow. Basic statistics describing lot volume, the quantity of sherds, and their degree of fragmentation can be consulted in tables 8.1 and 8.4. Mortuary contexts are mentioned in this chapter, but their full treatment, including osteological details, is left for Volume 3 of this monograph.

AREA A

Area A is located on the steep north-facing backslope of Cerro La Gazca (Figure 5.1), in a place where Postclassic sherds are common on the modern ground surface. Excavations targeted Feature B1, a half-buried remnant of a terrace wall and the fill retained behind it (figures 7.2 and 7.3).

Feature B3. The only Formative context discovered was the very bottom of a severely truncated bell-shaped pit, Feature B3. This is the part of the pit that was dug into the tepetate (Zone 16) and the sandy subsoil horizon on top of it (Zone 14). Severe erosion subsequently removed the ground surface from which the pit was dug, most of the soil profile underneath it, and most of the pit fill itself. We think this occurred at the end of the first Formative occupation and that the ground surface was lowered by more than a meter (Borejsza et al. 2008). In the Postclassic, the slope was reclaimed by means of stone-walled terraces, and what remained of the truncated pit was buried under the terrace fill (zones 1 and 21).

Feature B3 was circular in plan, with a floor dipping downslope a little. Its fill (Zone 25) was a very friable and almost structureless silt loam that stood out against the natural substrate because of its dark colors, almost black when moist. Some of the coloration must be due to post-depositional illuviation of organic matter, as the upper part of the fill (Zone 25A) was darker than the lower one (Zone 25B). As in many other cases, the looser fill set into tepetate had become a preferential conduit for water percolation and the penetration of roots. At closer inspection the fill could actually be found to be variegated. It contained the following: tepetate fragments; dark brown firm but brittle lumps of unknown origin, perhaps peds of the original soil; lumps of clay burned to different degrees, some of them

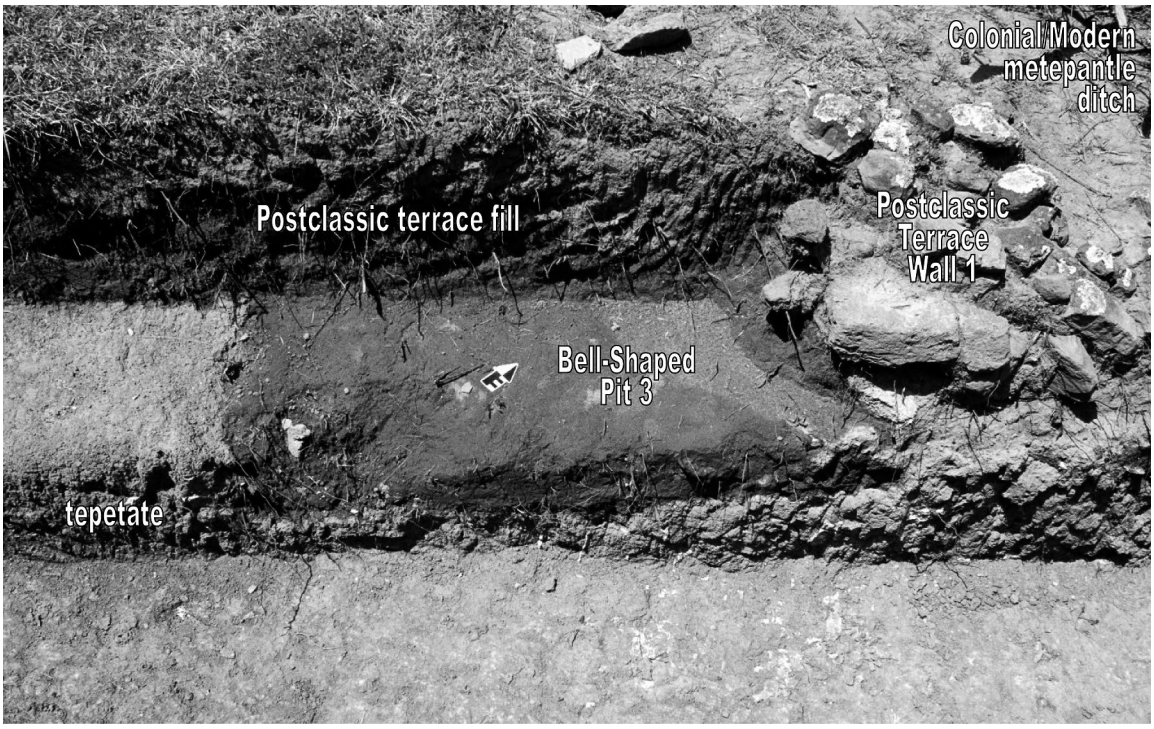

Figure 7.2. Area A; Feature B3 and surroundings.

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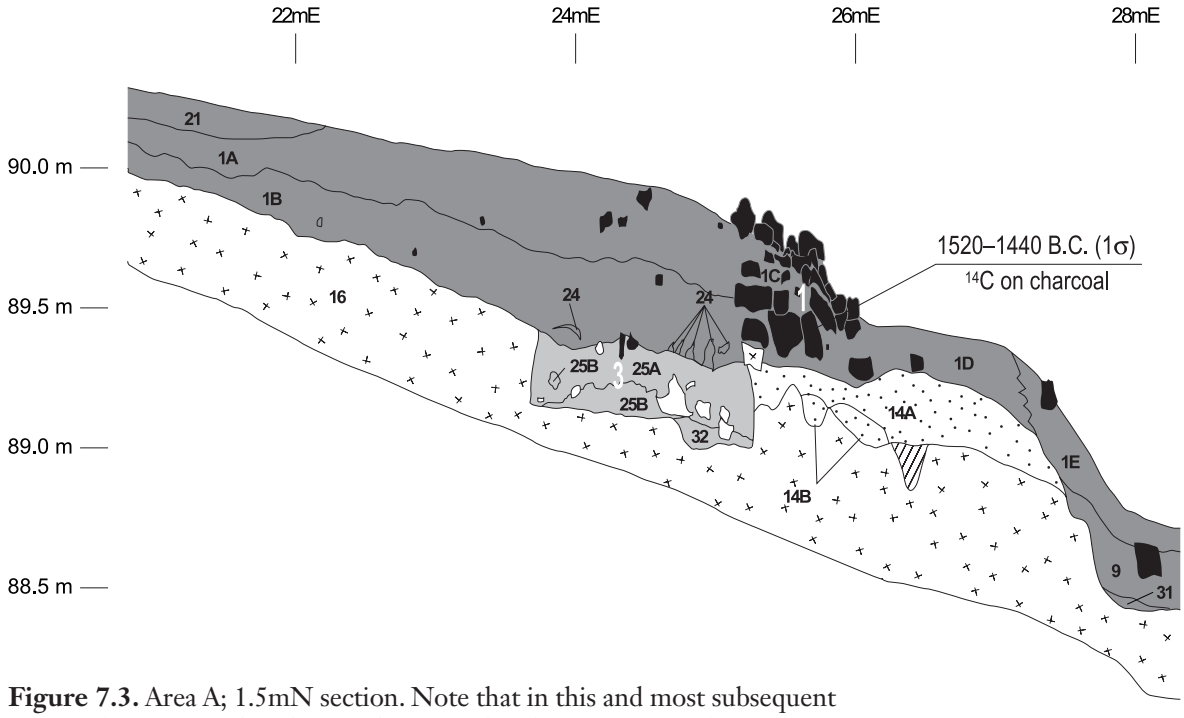

Figure 7.3. Area A; 1.5mN section. Note that in this and most subsequent section drawings in this chapter the vertical scale is exaggerated

being small daub fragments; a white powdery ash-like substance, some of it hardened to nodules; some pebbles; and charcoal. The density of artifacts, mostly sherds, was very high. The sherds were large and unabraded. Several of them were found set on edge in the fill, especially near the pit walls. Some of these sherds were subsequently refitted into an olla. At the eastern edge of the pit we found a serving bowl standing rim up, complete but for a circle that had been purposefully cut or struck out of its base. To one side of the bowl, the floor of the pit displayed a small irregularly shaped depression, filled with Zone 32, a very dark brown loose loamy sand with many ocher-colored lumps of earth and some whitish crusts, perhaps of secondary carbonate dug up from the tepetate. We originally called this depression Feature B15, but we are not sure whether it was created on purpose or through natural processes. The presence of a few Postclassic sherds and the above-average density of roots in the pit fill attest to some bioturbation, though no immediately obvious burrows traversed it. In all, the nature of the fill and its artifactual content indicate that the pit was filled rapidly, probably with a mixture of secondary refuse and locally available earth.

AREA F

Area F is located on the steep south-facing backslope of Cerro Las Palmas, in a topographic position equivalent to that of Area A (Figure 5.1). Area F is traversed by several metepantle berms and associated ditches, dug or redug within living memory. In between the metepantles are several unequally spaced breaks in slope gradient, as well as slope-parallel belts of different types of shrubbery and grass and of partially buried stone rubble. Our excavations have demonstrated that all of these are the surface expression of the superposition of agricultural terraces of different age and morphology. The terraces in Area F are all Colonial or Modern. There is no sign of Postclassic occupation apart from the occasional redeposited sherd. As in other long-farmed and repeatedly terraced landscapes (see Frederick and Krahtopoulou 2000) there is a series of slope-parallel belts in which the older ground surfaces and deposits have either been (1) buried and preserved by terrace-filling operations and colluviation; or (2) removed by terrace-cutting operations and erosion. In our case this means that the preservation of Formative-occupation surfaces and subsurface features varies considerably from one slope-parallel belt to the next. We opened six excavation units of different sizes in Area F (Figure 7.4). In 2005 David Carballo expanded on our excavations at the upslope end of the area. Excavations uncovered many intact Formative features and deposits (figures 7.5 and 7.6). They also revealed a great density of Formative artifacts redeposited in the later terrace fills, with only the occasional glazed sherd or iron object pointing to their true age.

General Stratigraphy

Stratigraphic sections through Area F are shown in figures 7.7, 7.10, 7.11, and 7.16. We discuss the pre-occupation zones underlying the entire area first, then the cultural stratigraphy of different slope-parallel belts, starting with the upper end of Unit F-4 and proceeding downslope.

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All zones whose deposition predates human occupation are identified by numbers greater than or equal to 100. Unconfined zones deposited from the Formative onward are identified by numbers less than 100. Subdivisions of feature fill are identified by composite labels (for example, 56-3), the first member of which is the feature number.

All of Area F is underlain by indurated palaeosol horizons that fit the generic designation of tepetates (Etchevers et al. 2003; Werner 1988). The uppermost of them, Zone 103, was exposed in most excavation units. It is a light yellowish brown deposit of loamy texture. It breaks into cohesive angular peds, which were sometimes used as building blocks in Formative and later walls and other architectural elements. Inadvertently redeposited peds show up frequently in all kinds of feature or platform fills. This or some other tepetate has also been used in preparing earthen floors. The upper contact of Zone 103 is abrupt and extremely irregular, probably as a result of an erosional episode in the distant Pleistocene past. However, as this boundary constitutes the contact of indurated and nonindurated deposits, it is also here that the activity of burrowing animals is most obvious. Zones 102, 101, and 100 belong to the same depositional unit of reworked pyroclastics ("tobas," sensu Heine and Schönhals 1973). What distinguishes them is the content of pedogenic clay. Zone 102 is the parent material hardly modified by soil formation. It is pale yellow, very sandy, and very friable. The clay coats become apparent in Zone 101 and reach their maximum expression in Zone 100 to the extent of having altered its texture to a sandy clay loam and imparted it a yellowish brown color. The high clay content of the latter makes it dry to a very hard consistence and crack in a polygonal pattern reminiscent of tepetates. In contrast to tepetate, however, it reverts to a more friable condition when wetted again. All three zones were dug into in Formative times and contributed large volumes of earth to the fill of many features.

Zones 100, 101, and 102 can be described as the BAt-Bw-C horizons of the same soil profile. It lacks a true A or topsoil horizon, and the addition of organic matter in Zone 100 seems to have taken place after this original Bt horizon was exposed at the ground surface by erosion. The upper boundary of Zone 100 therefore marks an erosional unconformity. As we will demonstrate below, this unconformity was created by anthropogenic slope erosion near the end of the first occupation of La Laguna. Most Formative deposits in Area F can be shown to be cut by the unconformity, and thus they belong to the first occupation. But there are also some Formative features that were built on top of the same unconformity and that belong to the second occupation of the site.

Our best evidence of how much of the original soil profile is missing comes from Unit F-4 and Unit F-1 upslope of 12mS (figures 7.7 and 7.8). The mouths of all pits in this belt (features B42, B43, B45, B46, B56, and B57) coincide with the upper boundary of Zone 100. The pits have characteristic bell-shaped outlines. The constrained mouths are

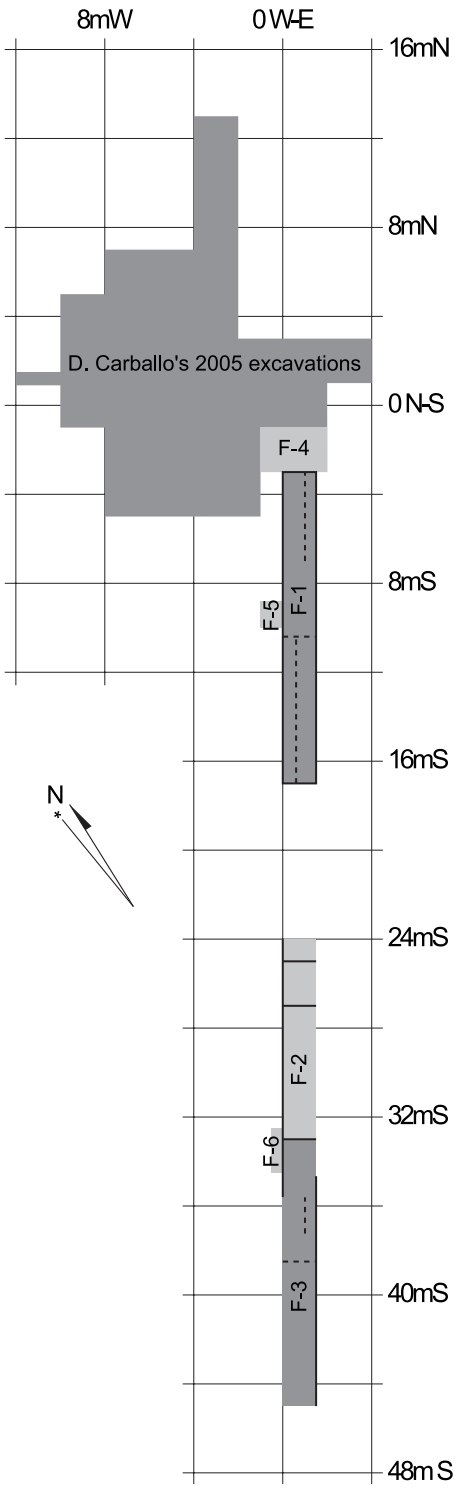

Figure 7.4. Area F; layout of grid and excavation units. Continuous lines mark sections drawn all the way from the modern ground surface to the bottom of excavation units. Dashed lines mark sections drawn of selected levels only, usually placed across significant features. Grid north is oriented upslope.

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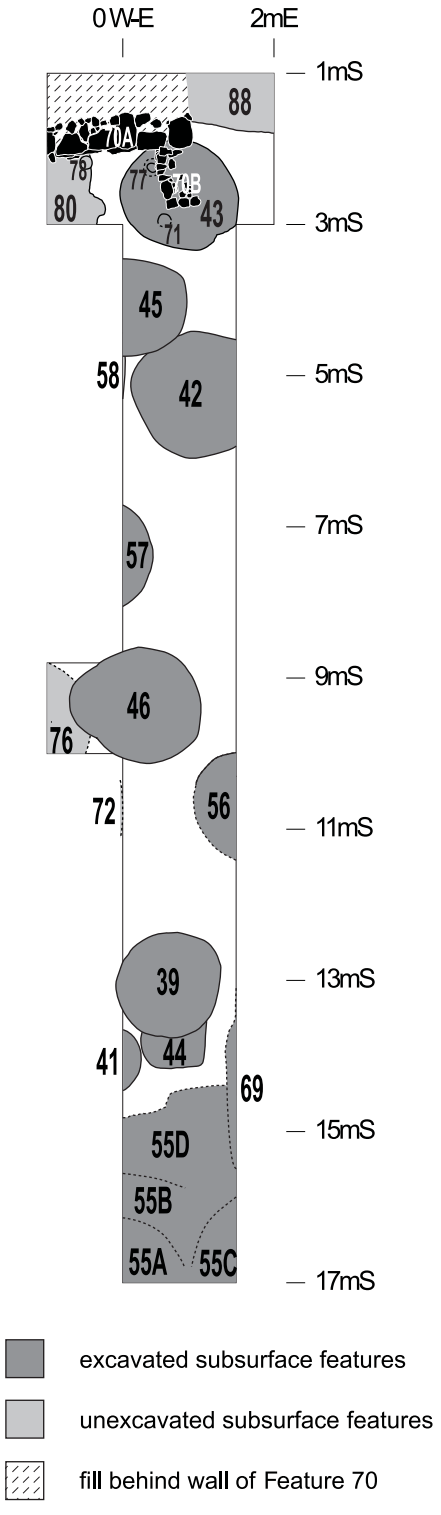

Figure 7.5. Index of Formative features in units F-1, F-4, and F-5. The widest horizontal extent of each feature is shown. Outlines that were difficult to define are dashed.

relatively well preserved, in contrast to Area A, Area H (see previous chapter), or Unit F-3, where the pits have been significantly truncated. The diameter of their mouths, however, is often greater than the 40 cm or so that are necessary to allow the entry of an adult. They also lack the cylindrical neck seen in many intact bell-shaped pits. Despite the great density of features, we have not found any stone foundations, floors, or postholes that could be associated with this particular set of bell-shaped pits. The combination of pedological and cultural clues leads us to conclude that the pits were originally dug from a ground surface that was some 20 cm higher. These 20 cm would roughly correspond to the now missing soil A horizon. The erosion that stripped the topsoil at the same time truncated the necks of the bell-shaped pits and swept away any associated occupation surfaces.

It was in Unit F-4 that the presence of two distinct generations of Formative features became clear (Figure 7.9). We uncovered the remains of a substantial wall (Feature B70A) and an artifact-rich fill retained behind it. A smaller wall segment, Feature B70B, was attached to it at a slightly obtuse angle. Both walls rest directly on top of Zone 100. Inside the corner they form, and right at the base of the stones, there were three large postholes (features B71, B77 and B78). A crucial observation was that the wall segment labeled B70B extended directly onto the in-filled mouth of bell-shaped Pit B43 and that two of the postholes (B71 and B77) penetrated the fill of the same pit. The excavation of this fill proved that the pit flared out beneath wall segment B70A. One can hardly imagine this substantial wall being placed right above an open pit. It must have been constructed after the abandonment of Feature B43 and other bell-shaped pits of its generation, after a lapse of time in which their exact location had been forgotten.

Carballo's 2005 excavations exposed more of Feature B70 (Carballo 2006, 2009). What we had found proved to be one corner of a very large house platform. The platform had retaining walls along only its downslope edge and one of its sides. This apparently leveled the ground enough to support construction on top of the platform (none of which is preserved). Along the upslope edge and the other side, the platform seemed to merge into an unmodified slope. The wall segments uncovered in 2005 buried the mouths of other underground features in the same manner as with pit B43. The association of the two generations of features with the two Formative occupations of La Laguna is brought out by radiocarbon dates. A fragment of wood charcoal from the bottom of bell-shaped Pit B46 was dated to 760 to 540 B.C.[1] (AA63373). The bone from a burial higher up in the same pit was dated to 800 to 570 B.C. (AA94043). Both dates fall on a wide plateau in the calibration curve, which inflates their calibrated ranges at the early end (see Chapter 12). Moreover, all dates on human bone from La Laguna seem too early by some 50 to 100 radiocarbon years. There may thus be some systematic error that affects them. Despite these problems, the dates make

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clear that Pit B46 belongs to the first occupation of the site, between 600 and 400 B.C. The ceramics that it contained belong to the Tezoquipan complex and could hardly have been produced before 500 B.C. (see Chapter 11). The 2σ calibration range of the charcoal date reaches to 420 B.C. and allows placing the pit in the fifth century B.C.

The concentrated charcoal from a maguey roasting oven dug from the top of the house platform was dated to A.D. 20 to 210 (AA87636). A fourth relevant sample came from a lens of charcoal preserved right at the erosional unconformity, sandwiched in between Zone 100 and a heap of pebbles, which may be the remnant of a Formative feature incorporated into the spoil of a Colonial ditch (Feature B66). The charcoal dates to 360 to 210 B.C. (AA63372), which makes it one of the few samples at La Laguna that belong to the proposed occupational hiatus of 400 to 50 B.C.

At a later stage in the use-life of the platform, the mouth of Feature B43 and the in-filled postholes were covered completely by the deposition of Zone 70-1. This consists of yellow and quite sandy sediment, interbedded with discontinuous subhorizontal layers of much finer texture and a dark brown color. Zone 70-1 leaned against Wall Segment B70A and draped over Wall Segment B70B. We are uncertain whether it was produced by the post-abandonment disintegration of structures of perishable materials that stood on top of the platform or whether it is another kind of architectural fill, emplaced in front of the wall as a means of enlarging the platform.

Downslope from 12mS, very little is left of Zone 100 (Figure 7.7). In this part of Unit F-1, Formative pits also seem to be associated with two different ground surfaces. The mouths of features B69 and B55 were difficult to delimit during excavation, and their outlines became clear only at a level where they cut through the sterile Zone 101. The upper portions of their fills seem to have been churned up with later deposits, perhaps at the same time as zones 3 and 2 were deposited. These apparently drape over the top of features B69 and B55. Zones 3 and 2 are replete with Formative artifacts and may represent sediment redeposited locally, either by people or by natural runoff. Zone 3 has a darker tinge to it and perhaps was derived from the A horizon that originally overlay Zone 100 and eroded just a few meters upslope. But it may also have been enriched in organic matter after deposition. Zone 2 is discontinuous and differs from Zone 3 in having more distinct clay coats. It may have been derived in a larger proportion from Zone 100. In contrast to features B69 and B55, features B39, B41, and B44 clearly cut through Zone 3 and therefore must have been dug after its deposition, from a later ground surface. Their outlines were readily seen in plan.

It seems reasonable to correlate the two generations of pits here with the two distinct Formative occupations documented upslope of 12mS, and the deposition of zones 3 and 2 with the erosional episode separating them. The erosional unconformity would thus correspond roughly to the lower boundary of Zone 3. We have some lingering doubts about this reconstruction, however. They stem mostly from considerations regarding the chronological placement of Pit B39, which we expound below in the section devoted to individual features. If we were to assign it to the first occupation of the site, we would have to do likewise with features B41 and B44. Under this scenario the unconformity would follow the upper, not the lower, boundary of

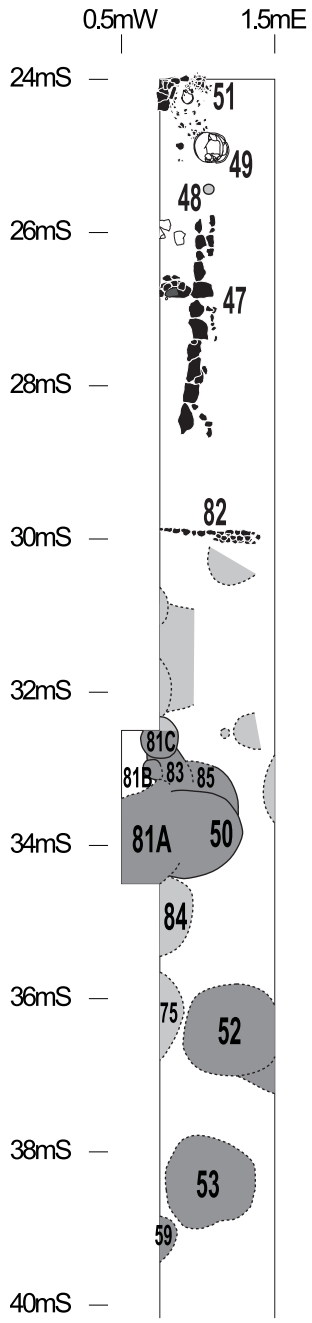

Figure 7.6. Index of Formative features in units F-2, F-3, and F-6; conventions as in Figure 7.5.

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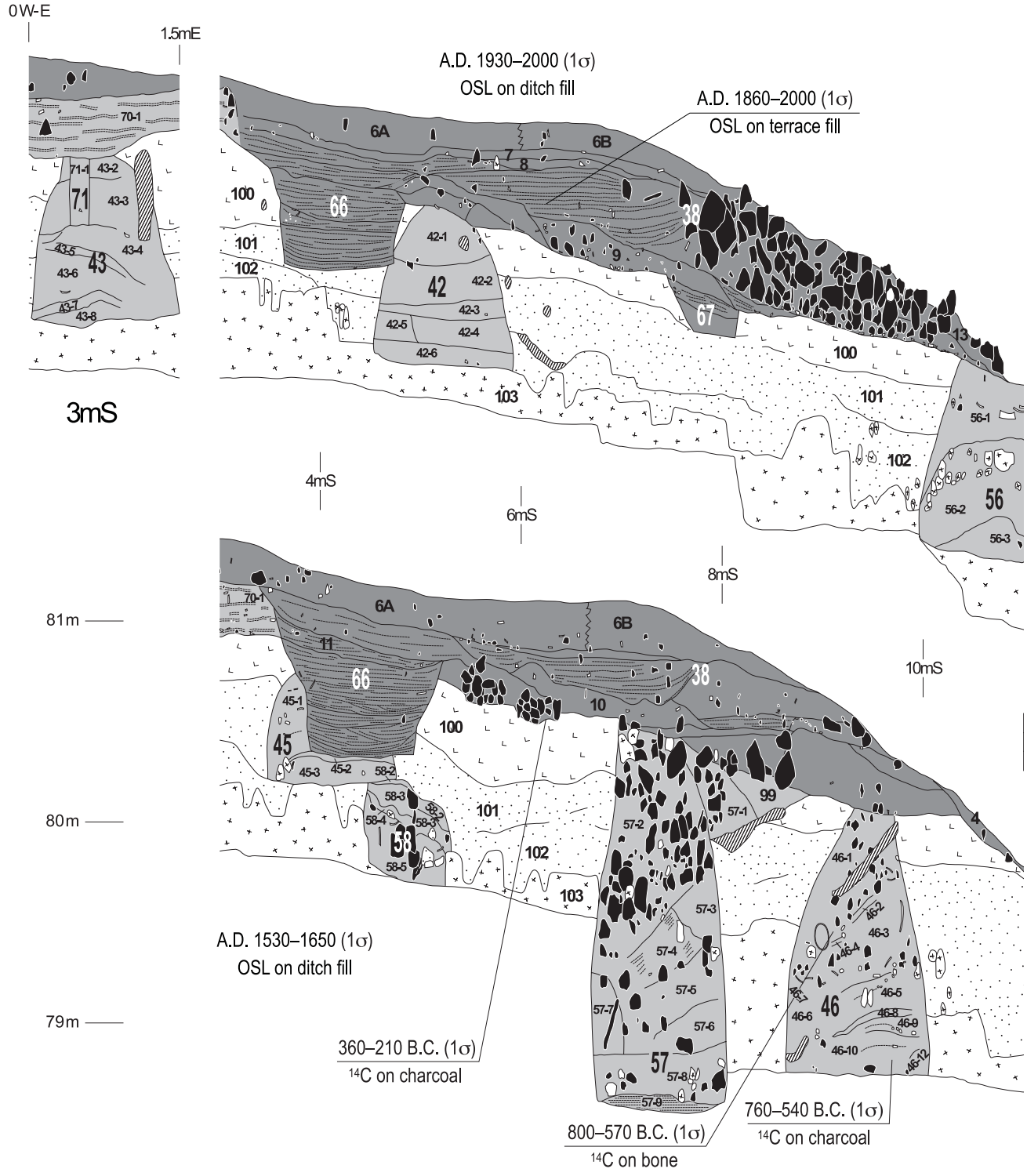

zones 2 and 3. We would have to place the removal of Zone 100 at an earlier date and suppose that it was dug away in the course of human activities in the vicinity. Unfortunately, none of the three features in question yielded a sample of refuse amenable to conclusive ceramic dating.

All Formative contexts in units F-1, F-4, and F-5 are now buried under deposits that accumulated as a result of slope reclamation for agriculture beginning in the Colonial period. The sequence of terracing operations undertaken is described in detail elsewhere (Borejsza 2006; Borejsza et al. 2008). Their effect on the integrity of Formative contexts was mixed. Some were cut out by ditches such as features B66 and B68. Practically all, however, benefited from burial under berms formed with the spoil from the same ditches, as well as under the earth and rubble berms of Feature B38 and the terrace fill trapped behind it.

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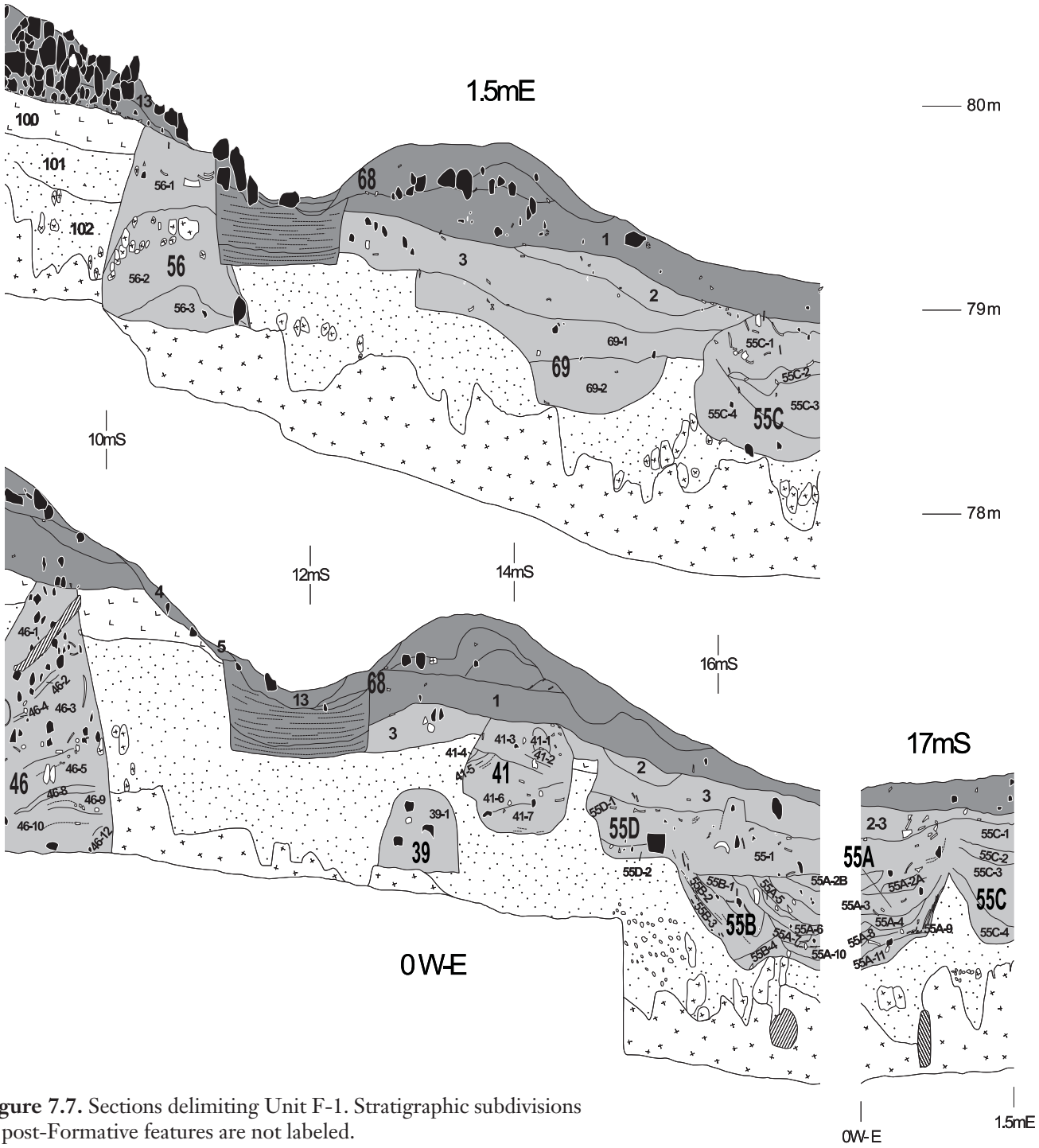

Figure 7.7. Sections delimiting Unit F-1. Stratigraphic subdivisions of post-Formative features are not labeled.

Farther downslope, between 24mS and about 34.5mS, the modern ground surface is gentler (figures 7.10 through 7.13), and there are no obvious indices of buried terrace risers. In this belt we excavated units F-2 and F-6 and the upslope portion of Unit F-3. Excavation was suspended in many parts before reaching the zones unmodified by human activity, so we do not have as complete a view of the stratigraphy as in Unit F-1. The same BAt-Bw-C (zones 100, 101, and 102) soil profile seems to be present, overlying the tepetate (Zone 103). Much of Zone 100, however, seems to have been removed by erosion or reworked into the overlying cultural strata by the digging of pits and other human activity. In several places Zone 100 is overlain by Zone 99, which is almost identical in texture, consistence, and color. What makes it different are inclusions of Formative sherds, daub, and charcoal fragments that attest to

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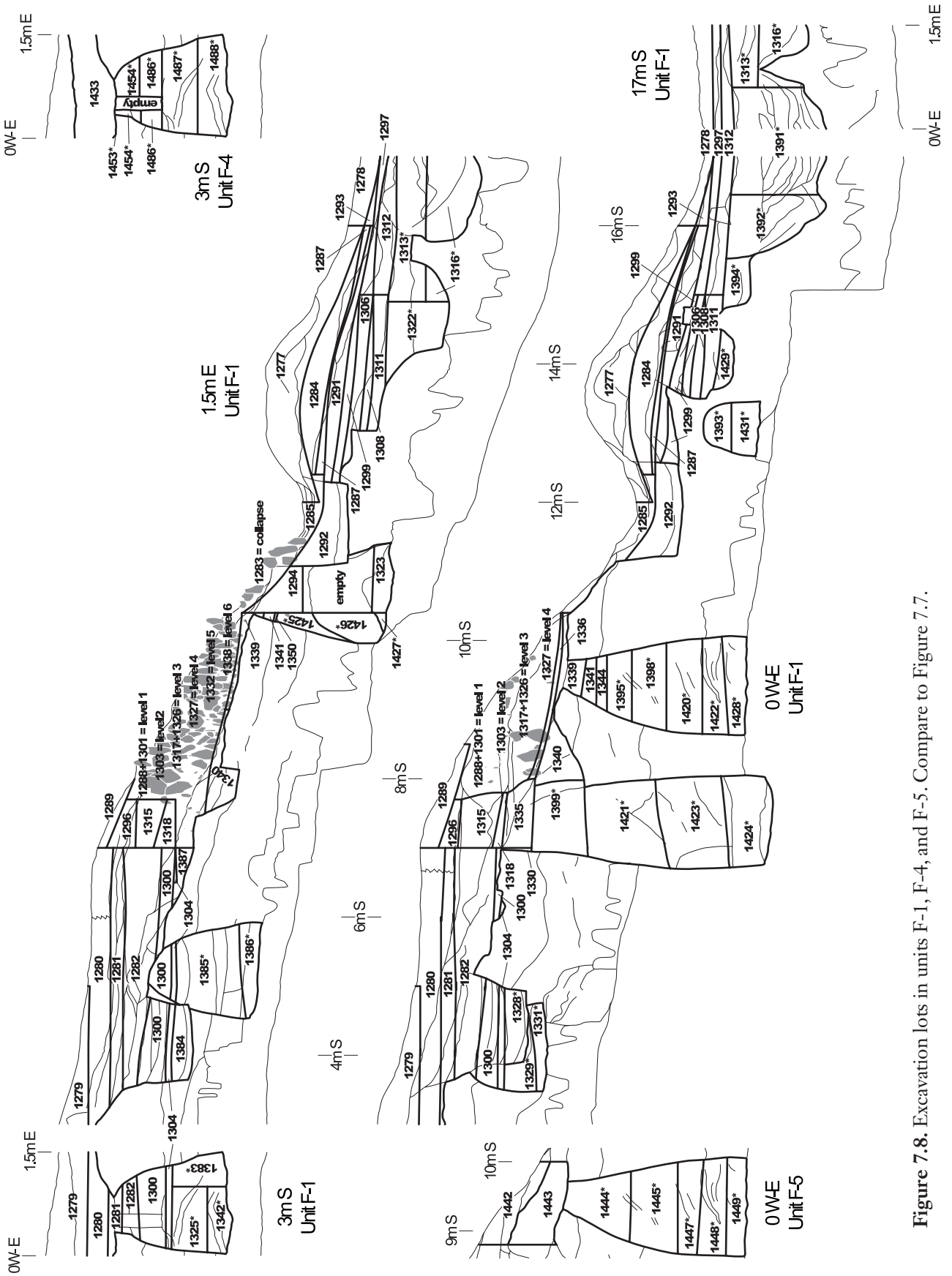

Figure 7.8. Excavation lots in units F-1, F-4, and F-5. Compare to Figure 7.7.

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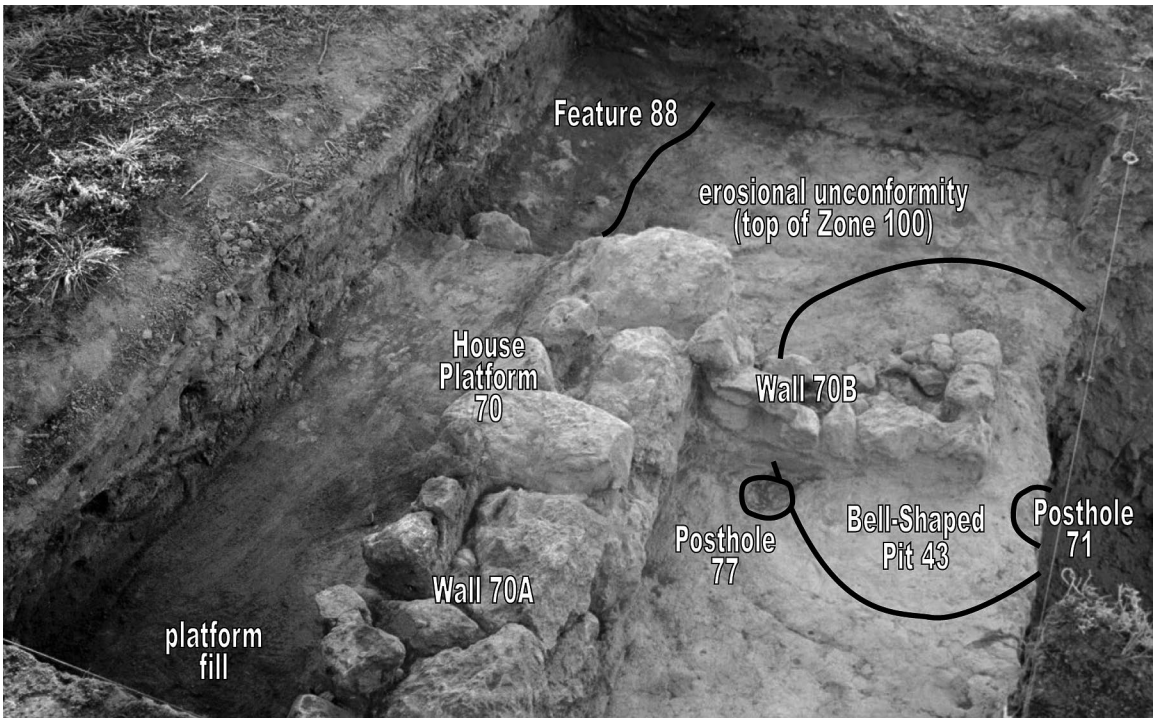

Figure 7.9. Unit F-4. The string is in the plane of 3mS.

its redeposition during the time span of human occupation. Surface runoff could have redeposited a layer of Zone 100 mobilized by tillage, or else the ground surface could have been raised on purpose to make room for construction. A pattern of clay coats in discontinuous subhorizontal bands, observed in parts of Zone 99 (and very similar to that of Zone 70-1, in front of House Platform 70), hints at a gradual addition of slightly different packets of sediment. However, the fact that in the upper part of Unit F-2, Zone 99 covered stone foundations (Feature B47) and a pair of vessels standing next to them (Feature B49) suggests that it was deposited intentionally, in a single event. Only rapid burial would have allowed the preservation of the vessels.

Once again, the stratigraphic relationships of pits and other cultural features hint at the existence of more than one Formative ground surface. Between 32.5mS and 34.5mS, no fewer than six subsurface features cut into each other (Figure 7.14). Pits B50 and B85 were bell shaped. Grave Pit B83 was also constrained toward its mouth. The sections drawn in figures 7.10 and 7.11 cut through the lower, flaring-out part of the three pits. Their tops reached in fact above Zone 101-2 to a level where their fills merged with the bottom parts of the fills of features B81A, B81B, and B81C. There are thus two distinct "generations" of pits dug from different ground surfaces. Pits B50, B83, and B85 were dug from a surface lower in absolute elevation and one that was at least in part removed when pits B81A, B81B, and B81C were dug. The only absolute point of reference is given by the radiocarbon date on the bone of the individual buried in Pit B83. At 770 to 540 B.C. (AA94045), it seems early. The 2σ range, however, extends again all the way to 420 B.C. The only offering associated with this burial was a tripod dish of the Palmas type (see Chapter 9), which attained its highest popularity at the transition from the Texoloc to the Tezoquipan phase circa 500 B.C.

The shape of the features and the lack of more horizontal exposure make it impossible to determine whether the pits of this second generation are preserved in their entirety. The pits are all draped over by Zone 99, whose deposition created a third ground surface. The considerable accumulation of stones, daub, and charcoal near the upper boundary of Zone 99, visible in the 33mS section, suggests that some domestic activity took place on top of that new surface. Farther upslope, Stone Alignment 82 seems to rest on top of the same surface, while pits B93 and B94 would have been dug down from it. However, the pits were exposed only in a slit trench between the planes of 0W-E and 0.5mE, so their recorded limits are to be viewed as tentative.

Upslope of 29mS is a whole set of features that prove beyond doubt that one of the few well-preserved Formative ground surfaces is present here (Figure 7.15). They include the mentioned stone alignments (Feature B47) and an adjacent activity area on which a few large sherds were found lying flat, together with a significant amount of burned daub. Next to them stood the pair of vessels placed against a heap of pebbles (Feature B49). There was also a shallow grave (Feature B51) and an enigmatic circular depression (Feature B48). Zone 99 envelops and buries this whole set of features, which leads us to associate it with the second ground surface. We did not dig any deeper here, consid-

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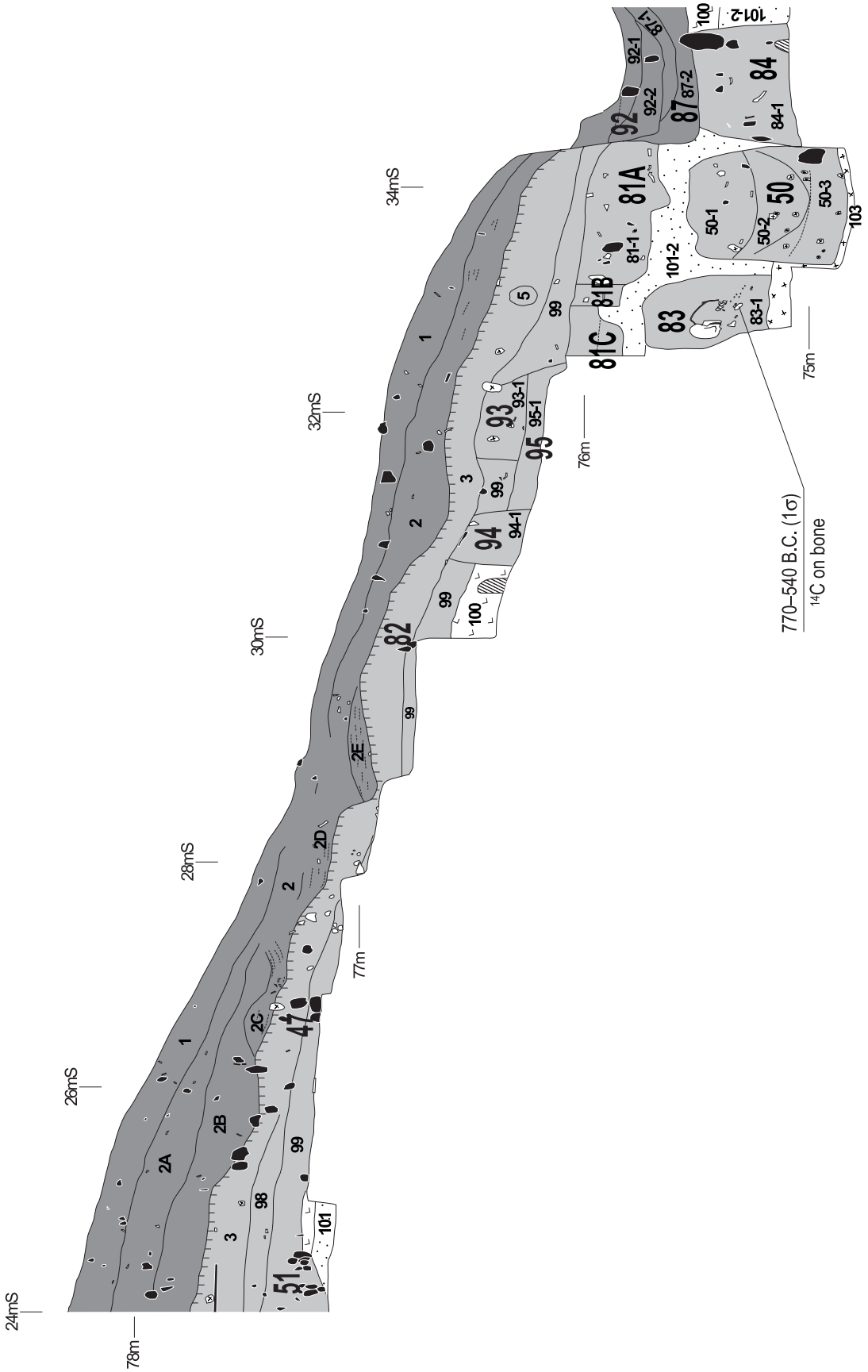

Figure 7.10. 0W-E section of Unit F-2 and upslope portion of Unit F-3.

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ering that the discoveries called for a more extensive excavation, which we did not have the resources to undertake.

Out of the three Formative ground surfaces here, we would associate the oldest one with the first occupation of the site based on the similarity of the bell-shaped pits and their stratigraphic position to the situation recorded in Unit F-1 and the radiocarbon date from Pit B83. The middle one, resting on top of truncated Zone 100, would correspond to the second occupation, a correlation that we feel is reinforced by the form and decoration of the vessels of Feature B49 that were placed on it. The youngest ground surface, created after the deposition of Zone 99 (and perhaps also the similar Zone 98), would represent a later moment within the second occupation.

All Formative deposits upslope of 34.5mS are buried by Zone 3. This is distinguished by its dark color, well-developed pedogenic structure, and prominent clay coats on ped faces. Where Zone 3 is relatively thin, the coats penetrate into underlying deposits. It contains a jumble of reworked artifacts, but we did not identify any post-Formative sherds in it. We think it is a colluvial unit deposited at the close of the second Formative occupation of the site or soon thereafter and modified by a period of renewed soil formation that lasted until circa A.D. 1000. This chronology rests on a correlation with a similar stratigraphic zone in Area H that was radiometrically dated. If correct, it means that the sample of artifacts from Zone 3, though reworked, is still legitimately Formative. Zones 2 and 1, in contrast, were deposited in the Postclassic, Colonial, and Modern periods by colluvial processes or by the intentional accumulation of terrace fill.

Downslope from 34.5mS the modern ground surface turns steeper and displays a series of marked steps overgrown by shrubs. The stratigraphy of Unit F-3 in this belt has been severely affected by the activity of burrowing animals, which has displaced many artifacts from their original depositional context. Nonetheless, the general sequence of events can still be reconstructed (figures 7.16 and 7.17). The zones not modified by human activity are the same as in all of Area F. A considerable thickness of Zone 100 is preserved upslope of circa 40mS. In contrast, downslope of circa 42mS there are only isolated pockets of Zone 102 overlying the tepetate (Zone 103), which comes very close to the modern ground surface.

No above-surface features of Formative age have been uncovered in this belt. There are two bell-shaped pits (features B52 and B84), two pits whose outlines were extremely difficult to make out among the burrows (features B53 and B59), and one pit that was not excavated (Feature B75). They did not contain any post-Formative artifacts outside of obvious burrows that crisscrossed their fills. Looking at their elevation with respect to the zones prior to human occupation, we guess that they are stratigraphic equivalents of the bell-shaped pits found in Unit F-1 upslope of 12mS and of those at the juncture of units F-2, F-3, and F-6, and that thus they belong to the first occupation of the site. With the

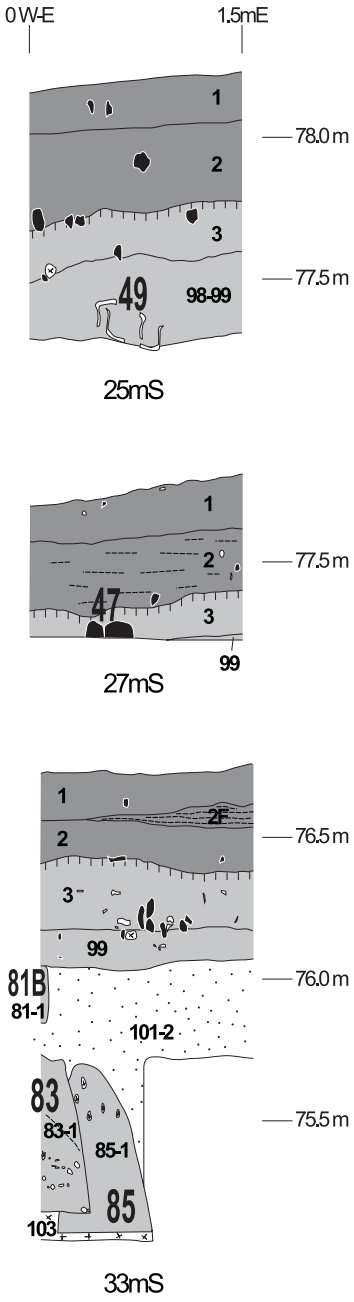

Figure 7.11. Unit F-2; 25mS, 27mS, and 33mS sections.

exception of Pit B84, however, they have all been seriously damaged in more recent times. Pits B52 and B75 were truncated by a ditch (Feature B74), while the upper parts of features B53 and B59 were churned up beyond recognition by burrowing. No trace of any Formative feature whatsoever survives downslope from 40mS. All of them must have been swept away by erosion postdating the first occupation. In the deposits overlying Formative levels, we traced the outlines of a series of ditches, the spoil from which was piled up in metepantle-like berms. The berms were subsequently

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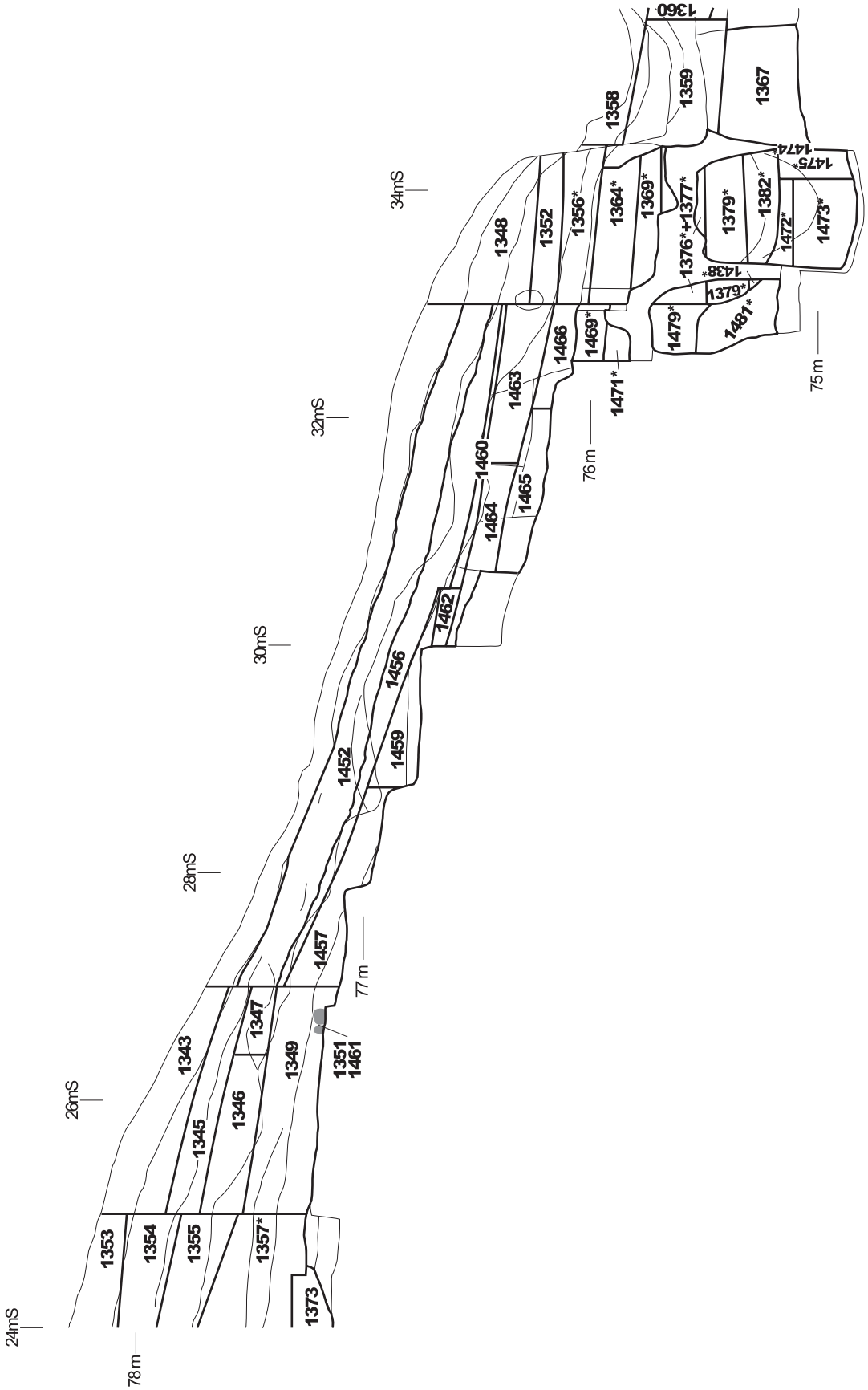

Figure 7.12. Excavation lots in Unit F-2 and upslope portion of Unit F-3. Compare to Figure 7.10.

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flattened by erosion and the ditches silted up. Glazed sherds and the head of a metal pickax prove that the metepantles date no further back than the Colonial period.

Bell-Shaped Pits

We have discovered at least 15 bell-shaped pits in Area F (features B39, B42, B43, B45, B46, B50, B52, B53, B56, B57, B58, B76, B84, B85, and B94), but some of them (B58, B76, and B84) were left unexcavated after we had uncovered enough of their mouths or sides to recognize them as such. The very shape of these pits created logistical problems during excavation, especially where they crosscut one another. The lower flaring-out side of a pit might appear within a unit where one was already digging through the sterile substrate or removing the fill of an adjacent feature. The mouth of the same bell-shaped pit might be well beyond the limits of the area opened up for excavation. For this very reason, the outlines of some pits have a curious tunnel-like appearance in our stratigraphic sections (for example, features B39 and B58 in Figure 7.7). The bell-shaped pits in Area F are all truncated to some degree. There is some variation in size, but few specimens depart much from the average diameter of 1.3 m at the bottom. The average depth must have stood at close to 1.5 m. Mouth diameter is difficult to estimate because of the truncation, but in view of better-preserved specimens at other sites, and of the postulated function, villagers probably tried to keep it below .5 m.

As has been mentioned in previous chapters, bell-shaped pits are an almost universal component of Formative sites in highland Mesoamerica, and virtually all archaeologists assume that their primary function was the storage of food (e.g., Flannery and Marcus 2005; Manzanilla 1985; Reyna Robles 1976; Winter 1976). Maize or whatever was stored in the pits had practically no chance of survival, however. Under most circumstances, the contents would be removed before site abandonment, opportunities for accidental charring were minimal, and even in cases of forced site abandonment, food would fall prey to animals or decay. What draws our attention in Area F is that practically all bell-shaped pits were excavated all the way down to tepetate (Zone 103) and sunk at least a couple of centimeters into it. It seems that it was important to have the indurated substrate form the floor of the pit, even though the walls might traverse much looser and free-draining sediment, such as zones 101 and 102, or the cultural fill of older features. It may be that storage, or simply the fact that people repeatedly lowered themselves into the pit, required having a hard and relatively impermeable floor. Conversely, practically all pits of different shapes (see next section) stop short of the tepetate, which is laborious to break up even with metal pickaxes and crowbars. We are also struck by how similar to one another in shape and size, and how regular in outline most bell-shaped pits are. The only modifications of the conical shape seem to occur where diggers came upon the loose fill of an older pit that threatened to collapse into the new one. We therefore suspect that the "bell-shaped pit" existed as an emic category in Formative life and that there were cultural expectations of what one should look like.

The uniformity of form and primary function contrasts with the almost infinite variety of fills that bell-shaped pits contain. It is this variety that makes excavating them so fascinating—one never knows what's in the box. It is to be emphasized, however, that the archaeological contents have nothing to do with what the pit was dug for in the first instance and instead reflect different trajectories of reuse and abandonment. The secondary uses of the pit may nonetheless reveal a lot about the life that went on in its vicinity. On severely eroded land typical of the Tlaxcalan countryside, where house foundations and occupation surfaces are a scarce commodity, bell-shaped pits with "good" refuse are often all we can ask for. The individual features we describe below are loosely grouped according to the kind of fill they contained. As usual, the discussion also generally proceeds from the up- to the downslope end of Area F.

All bell-shaped pits in Area F share an almost complete lack of evidence of ever having stood open. We find this significant. An in-filled pit is rarely of much use to anyone. Even the most common secondary uses of bell-shaped pits—as middens or tombs—presuppose a pit that can be accessed with relative ease and still has some room available. If a pit was ever abandoned before being full, we would expect it to be flooded during the following rainy season. We have not identified with confidence any layers of fill reworked by water or washed in from outside. With one or two possible exceptions, we have not observed any obviously caved-in walls. We can see three explanations for this pattern. One is that the pits were generally dug in a roofed space— either indoors or under eaves. The second is that whatever cover was drawn over the mouth—a stone lid, a mat, or maguey leaves—was left in place for the duration of the *secondary* as well as the primary use of the feature. The third, and the one we find most appealing in its ordinariness, is that pits that were no longer fit for storage were filled in rapidly on purpose. In patios or other intensively used domestic space, large empty holes were likely seen as a nuisance to get rid of before the onset of the rains. Possible departures from this general pattern are pointed out below.

Feature B56. The stratigraphy of Feature B56 offers probably the best example of the rapid infilling of a pit (Figure 7.7). Its two bottom zones (56-3 and 56-2) are a classic case of inverted natural stratigraphy, being derived from zones 101 through 103. The loose sandy yellow earth of zone 101 and 102 is dominant at the bottom of the pit fill. The density of cohesive peds detached from the tepetate of Zone 103 increases upward throughout Zone 56-2. Zones 56-3 and 56-2 contained only a handful of artifacts, the space in between lots 1294 and 1323 being completely devoid of them (Figure 7.8). The upper boundaries of both zones are markedly convex. This heap-like geometry can best be explained by the dumping of earth through a nar-

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Figure 7.13. Excavation lots in units F-2, F-3, and F-6. Compare to Figure 7.11.

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row centrally placed orifice. It thus seems that more than half of Feature B56 was filled with the spoil from another nearby pit dug through virgin soil. The topmost zone, 56-1, is loamier and slightly richer in sherds and thus may be of different origin. We do not know if the new pit was being dug as a replacement for the old one, but we deem it relevant that Feature B56 was not considered worth *setting aside* as a receptacle for household refuse or mortuary remains.

Features B43, B45, B42. Features B43, B45, and B42 are another set of bell-shaped pits with artifact-poor fill. The sherds are small and are probably to be viewed as tertiary refuse inadvertently redeposited with the fill. The fill itself consists of subangular peds suspended in a loose matrix of very fine sand. Individual zones were distinguished mostly on the basis of ped size, proportion of peds to matrix, and the color of the latter. This was predominantly pale yellow but with some seams (zones 43-5, 43-7, and 45-2) that were grayer (of a lower chroma) and in the field suggested a certain content of hearth ash. Ped dimensions were in the millimeter to centimeter range, with the largest ones rarely exceeding 2 cm in diameter. Some were recognizable as tepetate fragments, a few as peds of a Bt horizon, possibly derived from zones 103 and 100, respectively. In the lower third of pit B43 some peds were fragments of light gray mud with impressions of monocot temper that we have learned to recognize as daub in a state halfway between raw and fired. Most of the peds, however, were none of the above. Our best guess as to their provenience is zones 101 and 102, which could have supplied at the same time most of the volume of the loose matrix.

Even though much of the fill may be ultimately derived from the very zones through which these three pits were dug, we are confident that the primary mode of deposition was not the caving in of their walls. The pit outlines are regular, and the artifacts and other inclusions reveal that the earth in question was moved about on the surface for some time before being dumped in the pits. In the lower part of Feature B42, larger numbers of peds of larger size clustered near the wall of the pit, which suggests that, as in Feature B56, the fill was dumped from a centrally placed mouth and was gravity sorted as it fell onto the accumulating heap. The most common inclusion of patently cultural origin consists of charcoal splinters. They are scattered randomly throughout the fill but are consistently present. Some are fairly large, in the size range one would expect for the twigs of shrubs or small trees.

Feature B43 also produced human skeletal remains. They were found in the southeastern part of the pit and very close to its bottom, though not resting directly on the tepetate floor. There was a complete skull, as well as the four articulated limbs, but no trace of the rib cage or vertebrae. The bone belonged to an adult male. At the same level but closer to the center of the pit was half a deer mandible. According to one of the project osteologists (Couoh 2009:139–141, 198) the human bone showed signs of having been exposed to indirect heat. Alongside the charcoal,

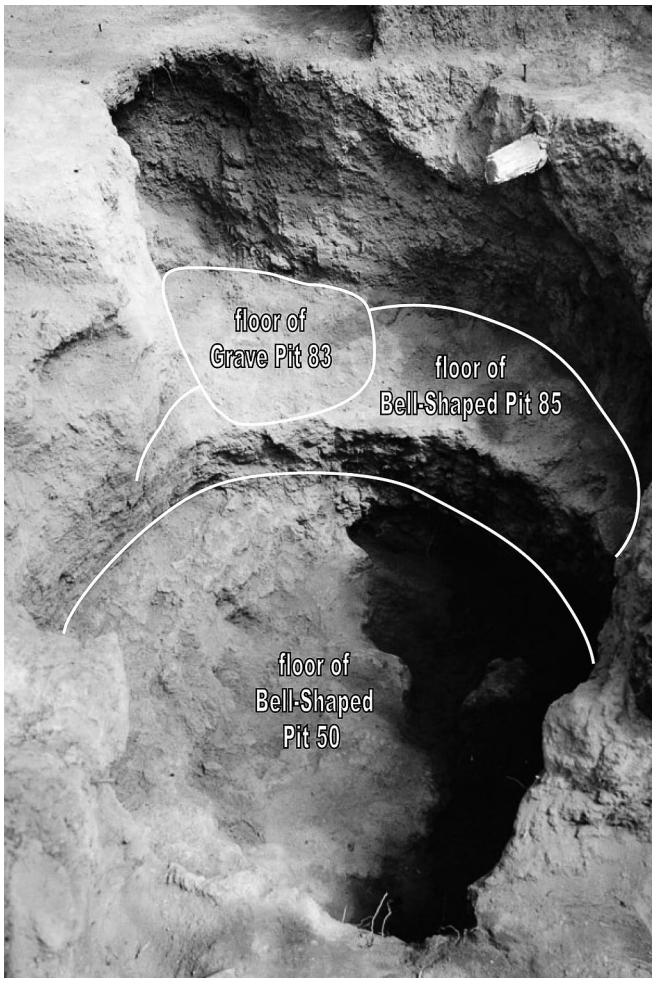

Figure 7.14. Features excavated at the junction of units F-2, F-3, and F-6.

altered daub, and putative ash, this is the fourth hint at activities that involved the exposure of future pit contents to high temperatures. The cursory examination of thin sections of the fill of features B42 and B43, however, has so far failed to confirm the presence of hearth ash. The close similarity of the fill of three adjacent pits suggests the repetition of the same kind of activities in the same spot. Pit B45 cuts a few centimeters into pit B42, which suggests that their digging and primary use was sequential rather than simultaneous.

Features B57, B46, B39. The next set of pits that we group together includes features B57, B46, and B39. What they had in common was a peculiar sequence of fills. In their upper parts we found accumulations of cobble-sized stones embedded in a loose sandy matrix in yellowish brown to yellowish gray tones. The fabric of the fill can be described as clast supported rather than matrix supported, as the stones touched one another, with the finer sediment occupying the interstices. We take this as an indication that the stones were thrown into the pits first and that the finer sediment slid or was washed in between them later. Many

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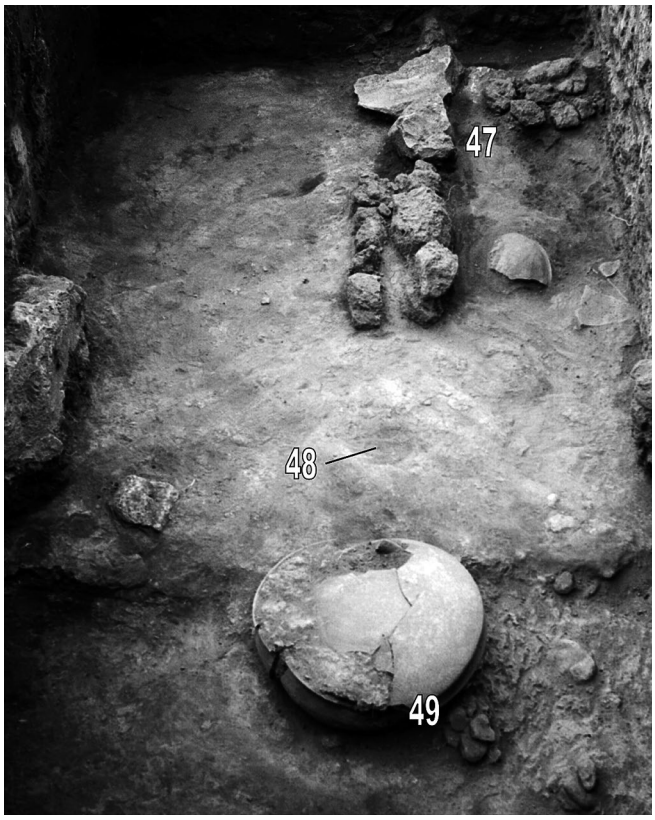

Figure 7.15. Above-surface features at the upslope end of Feature B47.

stones were fragments of volcanic breccia (tezontle), some of basalt, others of lithologies we do not recognize as easily. None were faced, but we are reasonably confident that they came from the foundations of houses made of more perishable materials. In a particularly poignant example from Pit B39, a thick layer of daub had been smeared over and still adhered to a large tezontle fragment (Figure 7.27, Item 351). The daub had one smooth face and was baked hard in a fire. Another piece of burned daub still attached to a stone came from Pit B57, alongside two stones that had been roughly squared off.

In the lower levels of the same pits, the density of stones diminished, to be replaced by ever more frequent pieces of burned and raw daub and a matrix of yellow finer-textured and often compact sediment. Many of the burned daub fragments had one or more smoothed and white-washed faces. Some preserved the impressions of wooden beams. What we term raw daub appears as subangular lumps of yellow earth, usually varying in diameter from 10 to less than 1 cm. They are not very cohesive and were often difficult to delimit during excavation. They came out as such only when the pit fill was picked or pried out rather than troweled. In fresh breaks, the interior of these lumps displays tubular voids a millimeter or so in diameter, with parallel striations along their walls, sometimes coated in white fibrous scraps. These seem to be the impressions and siliceous remnants of decomposed stalks or leaves of some monocotyledonous plant. The same kind of marks and inclusions can be observed in some burned daub fragments and must represent temper added to the mud by the builders. A few of the raw daub fragments still preserved a smoothed face too. This and other parallels with burned daub, observed both macro- and microscopically, have allowed us to establish beyond reasonable doubt that much of the volume of fill in the lower parts of pits B57, B46, and B39, including the yellow matrix, is derived from the decomposition of daub that had never been exposed to fire.

The vertical separation of stone, burned daub, and raw daub was particularly neat in Pit B39, where each in turn dominated successive levels of the fill from the mouth downward. Raw daub would come from those sections of the walls that had collapsed away from the burning wattle or thatch. Burned daub would come from those that stayed attached to the source of fuel longer, whereas the stone foundations would remain in place (see Shaffer 1993). If we imagine an orderly process of dismantling such a ruin, the easily moved smaller fragments of raw daub could be swept into the pit first, followed by the breakup of burned wall sections and finally the dismantling of house foundations. This scenario could perhaps account for most of the stratigraphy of Pit B39, but the sequence of depositional events in pits B57 and B46 is considerably more complex. A major part of their overall volume seems to be derived from the demolition of wattle-and-daub houses too, but we believe that it was swept into the pits in a much more opportunistic and piecemeal fashion, in the course of activities related to mortuary ritual that lasted over a period of months or years. This in turn suggests that a ready source of demolition debris was available in the vicinity toward the end of the secondary use-life of the pits. Similarities among the three pits end here, and an individual description of each is in order.

Feature B57. Our understanding of Pit B57 is hampered by incomplete excavation. About 15 percent of the volume of the pit projected into Unit F-1, and this was the only portion that we explored (Figure 7.18). At 1.9 m, this is the deepest bell-shaped pit discovered at La Laguna to date. It was sunk well into Zone 103 and into older, equally indurated horizons. Its diameter was not augmented proportionally to the depth, however, and at an estimated 1.4 m, its maximum diameter stands close to the average observed at our four Formative sites. The pit contained few artifacts other than house demolition debris. The very bottom was filled with Zone 57-9, which displayed vestiges of horizontal lamination. At the same time it contained abundant impressions and white-colored scraps of a white fibrous substance similar to the temper used in La Laguna daub. In thin section, the zone appears to have been heavily burrowed, though that was not apparent in the field. On top it rests a 25-cm-thick layer (Zone 57-8) dominated by fragments of daub, both raw and burned.

The upper boundary of Zone 57-8 is almost perfectly

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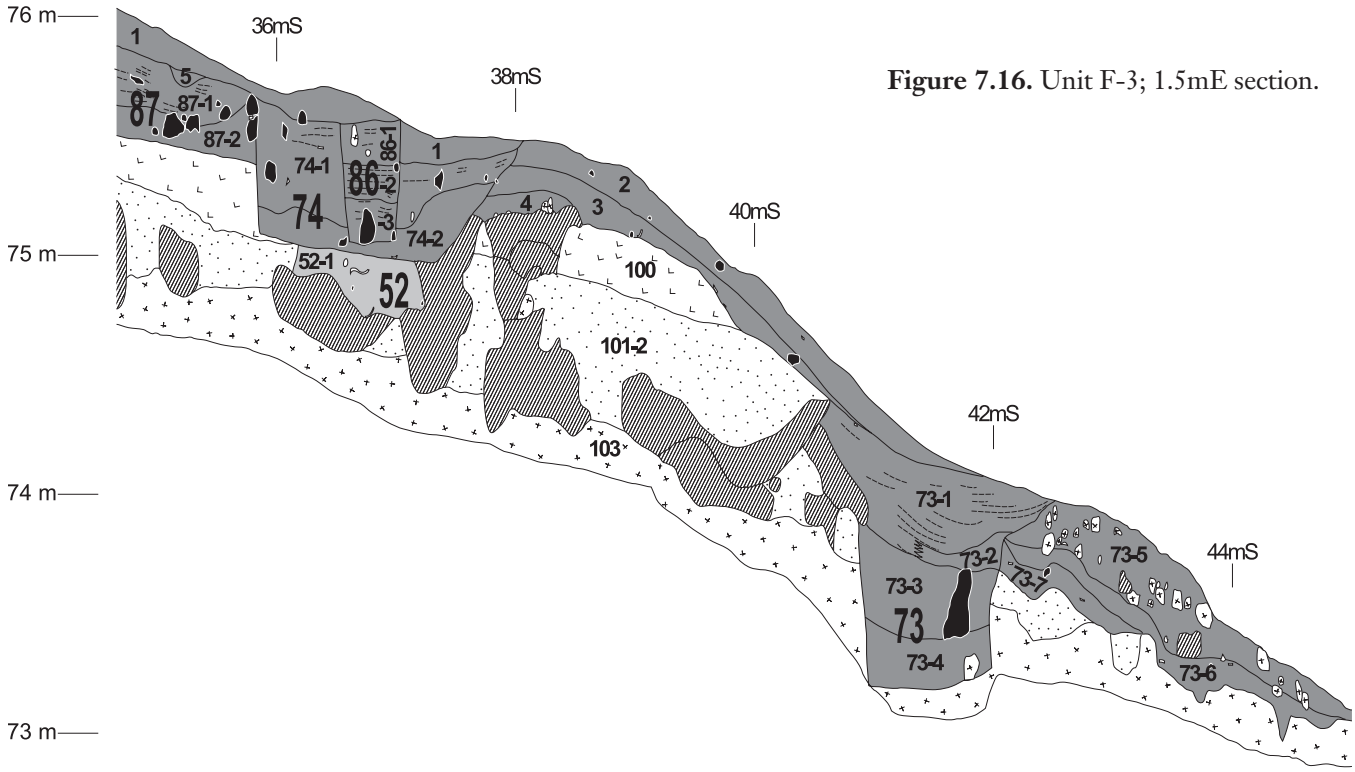

Figure 7.16. Unit F-3; 1.5mE section.

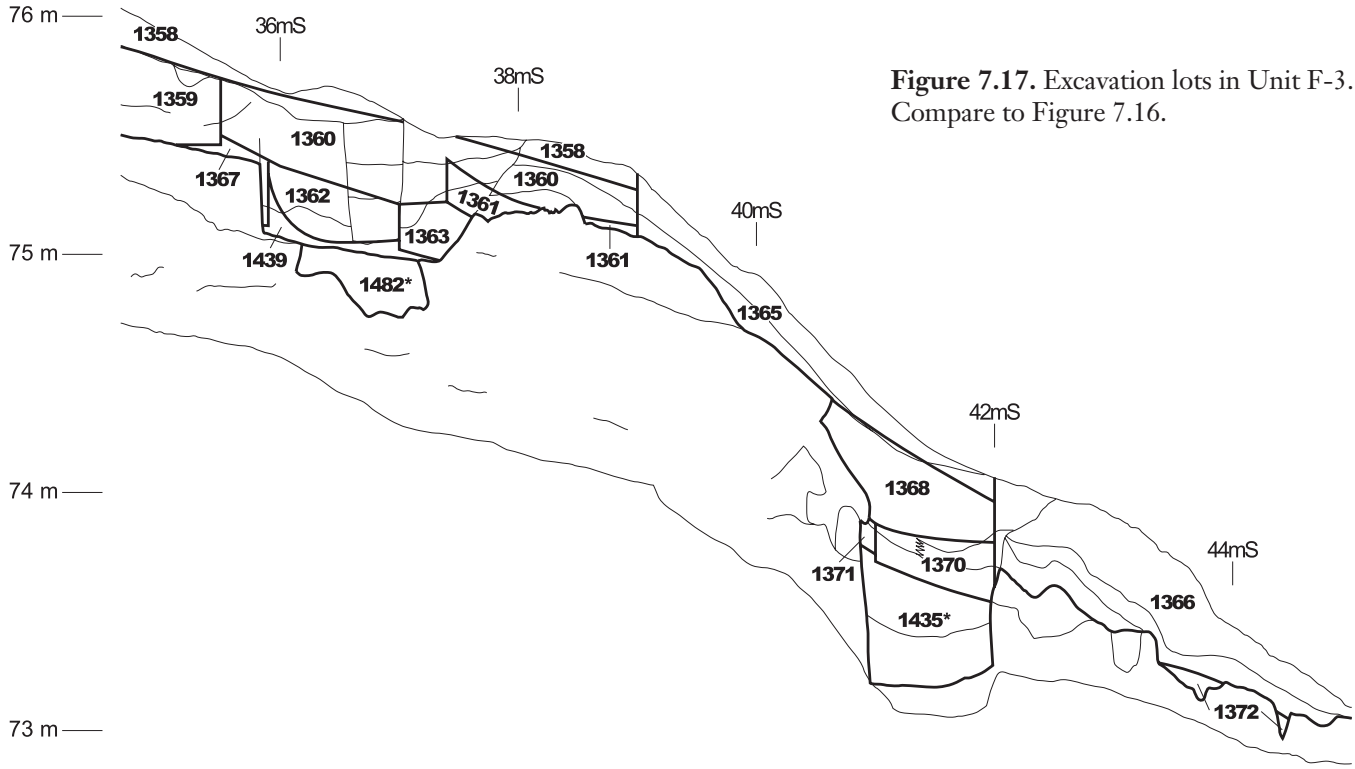

Figure 7.17. Excavation lots in Unit F-3. Compare to Figure 7.16.

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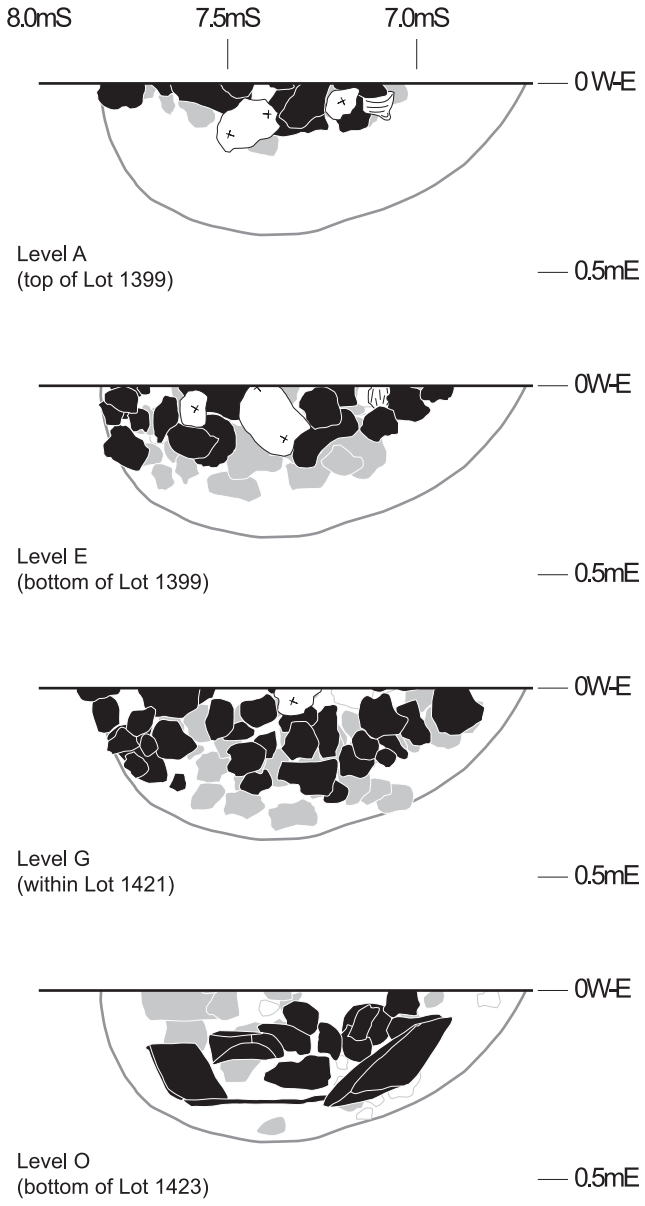

Figure 7.18. Selected levels of Pit B57.

Figure 7.19. Stone slabs in Level O of Pit B57.

horizontal and may have been smoothed out on purpose. Three large slabs of stone had been placed upright on top of that boundary (Figure 7.19), embedded within and supported by the matrix of Zone 57-7, a dark silty loam of low bulk density related to the abundance of macroscopically visible pores. A fourth slab was visible in the 0W-E section at the north end of this polygon. A metate found inside the polygon may have originally prolonged its outline to the south. Alternatively, the feature may have stopped here, as did Zone 57-7, which seemed to be associated with the slabs. Nothing peculiar was found inside the polygon except for an accumulation of very small animal bone resting on the upper boundary of Zone 57-8. The stone box itself recalls some burial cists of Formative age (Couoh and Hernández 2008; Reyna Robles and González Quintero 1998; Uruñuela and Plunket 2001; see also Feature B60 of Area B). The presence of human remains in features B43 and B46 makes plausible a mortuary use of the area in general. We will not know what the stone box contains until the remainder of the pit is explored, however.

Higher up we have a series of zones that must have been deposited in a short lapse of time, in view of their rather low bulk density and of the marked dip of zone boundaries and the bedding planes of Zone 57-4. The texture of these zones is relatively fine, but this seems due to the redeposition of peds of tepetate and Bt horizons rather than the transport of individual grains of clay or silt. The only exception to that pattern would be Zone 4, whose laminations of sand and mud suggest that loose earth slid or was washed in from the S edge of the pit. The upper half of the pit is full of stones (Figure 7.20). The S wall near the mouth may have suffered a cave-in before the pit was completely filled or was disturbed in a different manner at some stage (Figure 7.7). As a result, Zone 57-1, similar in its composition to Zone 57-2, extends beyond the original

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Figure 7.20. Stone-dominated fill of Zone 57-2; excavation at Level G.

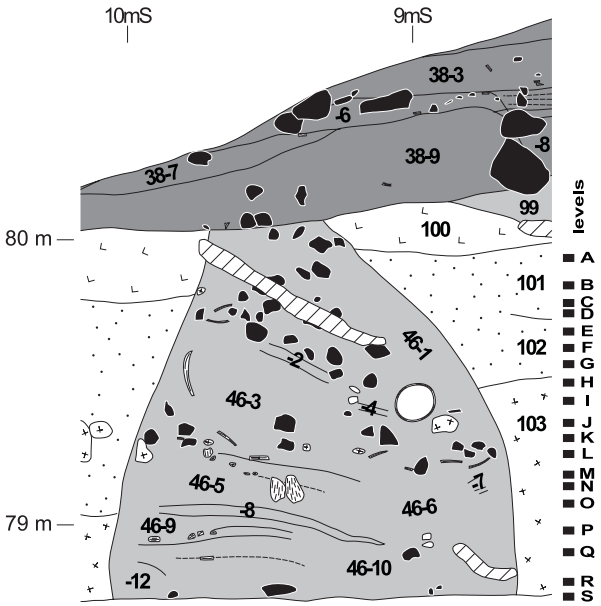

Figure 7.21. 0-WE section through Pit B46 with excavation levels marked.

mouth of the pit, whereas adjacent Zone 99 seems to be a reworked portion of sterile Zone 100.

Feature B46. This is the most complex bell-shaped pit we have ever excavated, at La Laguna or elsewhere. It was apparently used as a tomb or charnel in which a series of human corpses were sequentially placed, then wholly or partially removed. Most of the artifacts in this pit seem to have been originally introduced as burial offerings and included complete vessels and other still usable items. Many were broken up in the course of reentries into the pit. Some more fragmented artifacts, however, may have been introduced with the earth used to fill the pit, especially after its mortuary use came to an end. Below we offer only a brief summary of the findings in Pit B46, in particular those we deem most relevant to the analysis of its artifactual and ecofactual assemblages. We leave the osteological details and an in-depth interpretation for the chapter devoted to human remains and mortuary ritual in Volume 3.

The pit was sectioned along the 0W-E plane (Figure 7.21). The two-thirds or so of the pit contained within Unit F-1 were excavated first. The remaining third was excavated in Unit F-5, opened up specifically for that purpose. As a result, there are two vertical series of excavation lots (Figure 7.8). Lots 1341 and 1339 were excavated before the outline of Pit B46 was properly defined, but we are confident that all the bone and large sherds from these lots that came from Pit B46 were drawn and isolated as individually numbered items. In subsequent lots, a very large number of finds were also assigned individual item numbers, and their provenience was recorded in three dimensions in drawings of different levels of the pit fill. After completing the excavation, we stitched together the drawings of corresponding levels in the eastern and western parts (Figure 7.22). In all, 19 levels were defined. They were labeled A through S, from top to bottom. The correspondence of lots and levels is indicated in Table 7.1. The four crania of adult males found in the pit belong to four individuals whom we identify by Roman numerals I through IV, in the order of their discovery, inverse to that of their placement in the pit.

The mouth of the pit was difficult to delimit. As preserved, it seems to be roughly 40 cm in diameter and slightly displaced to the southwest of the central axis of the pit. The western wall of Pit B46 cut through an older bell-shaped pit, Feature B76. Its mouth must lie largely beyond the western edge of Unit F-5. The fill of Pit B76 was rather loose and therefore had to be cut back a little to avoid its collapse. Lot 1446 was used for that operation. The dark color of the fill of Pit B76, due to a very high charcoal content, allowed distinguishing it easily from the fill of Pit B46. Pit B76 was shallower, and its floor could be seen in the wall of Pit B46. The western wall of pit B46 flared out more than the rest of its circumference, an irregularity that was probably introduced inadvertently when the diggers pen-

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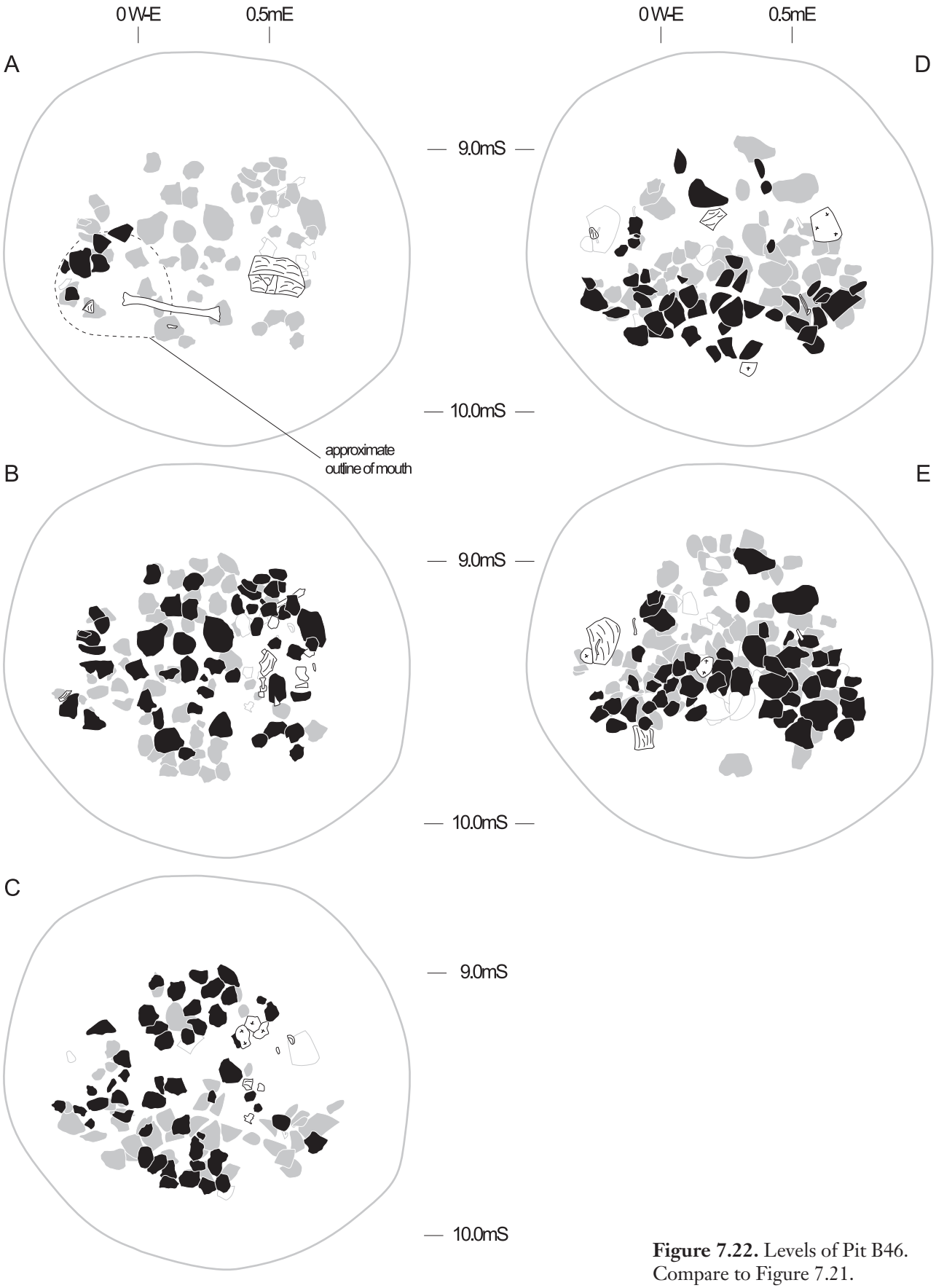

Figure 7.22. Levels of Pit B46. Compare to Figure 7.21.
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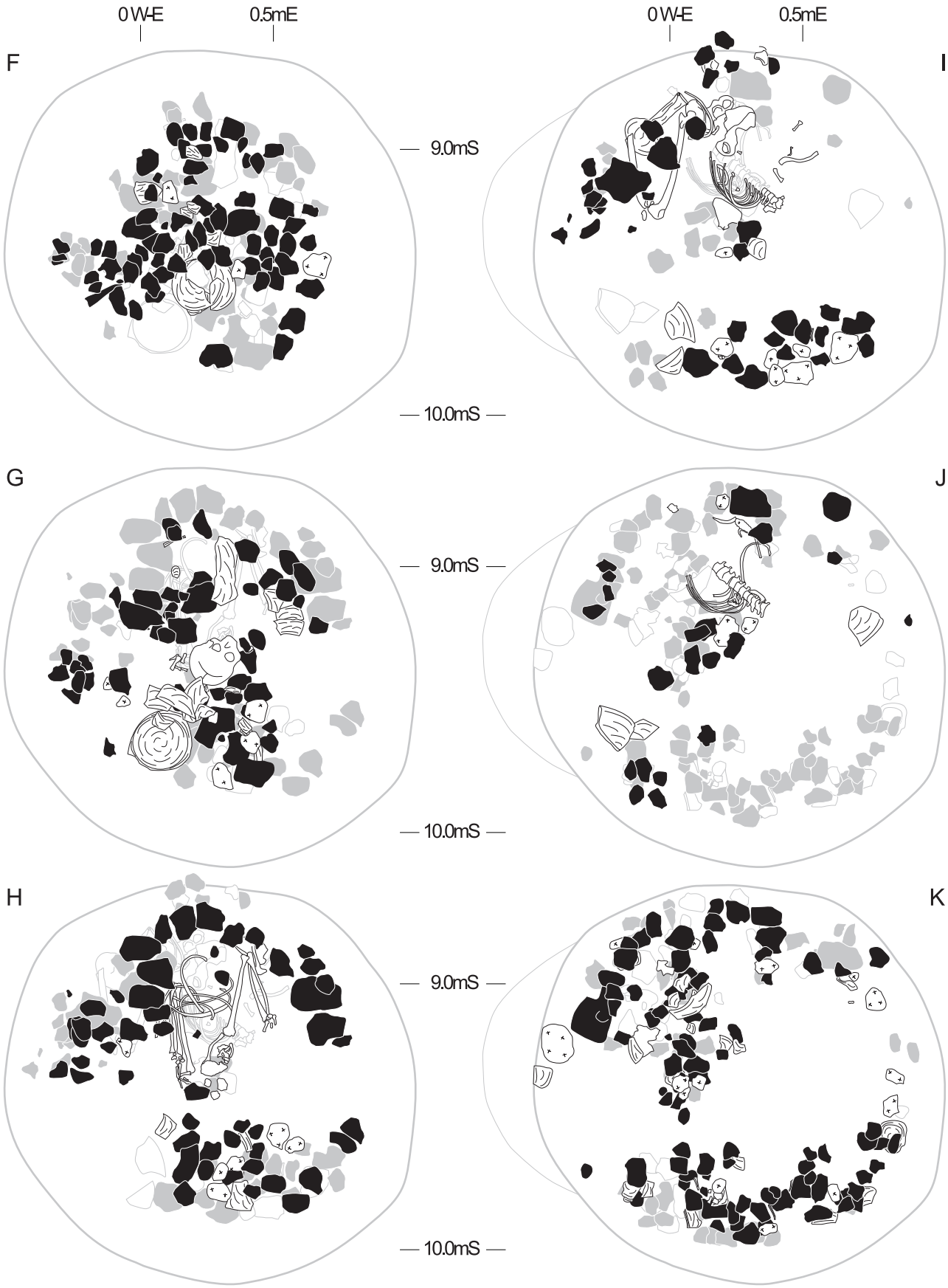

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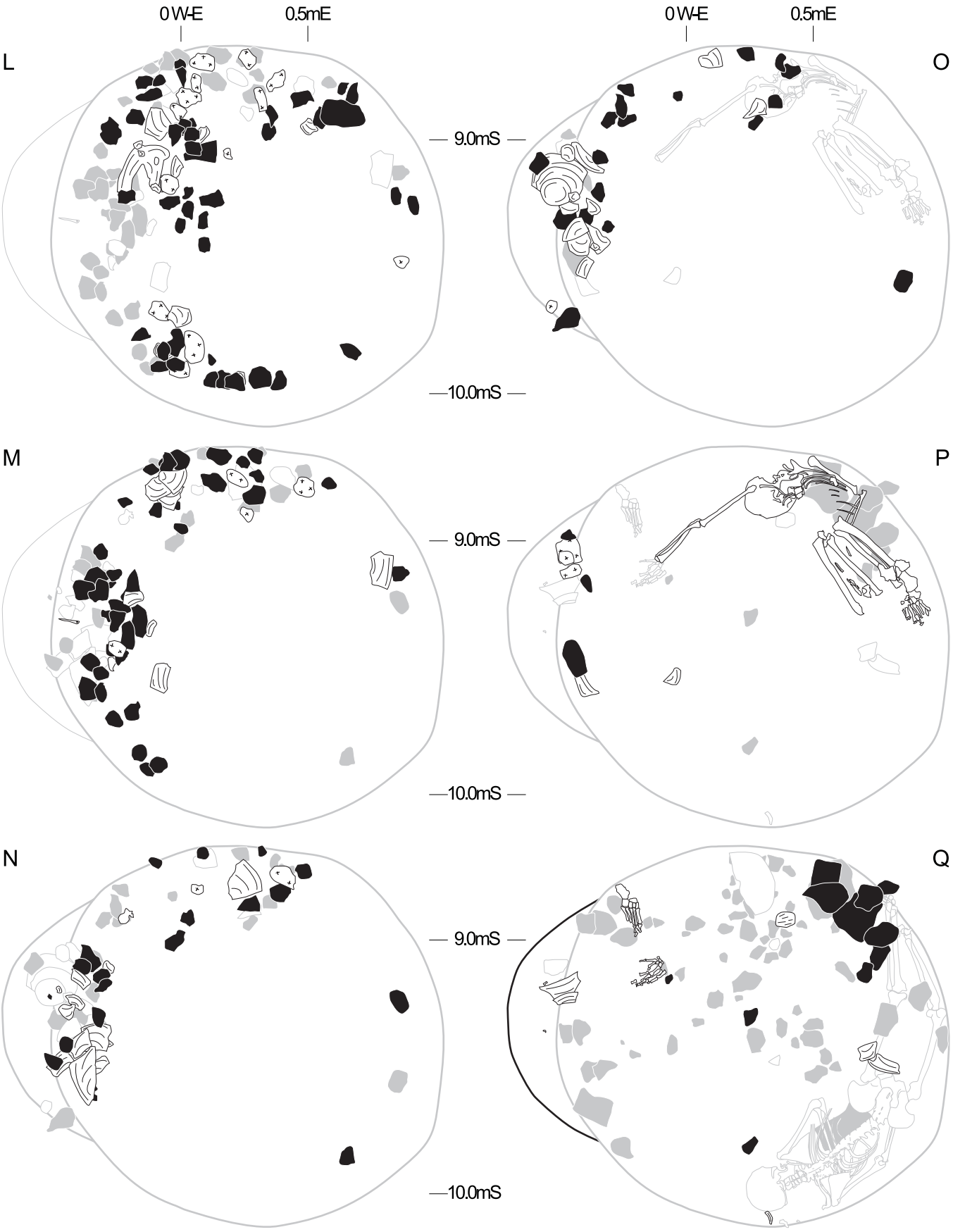

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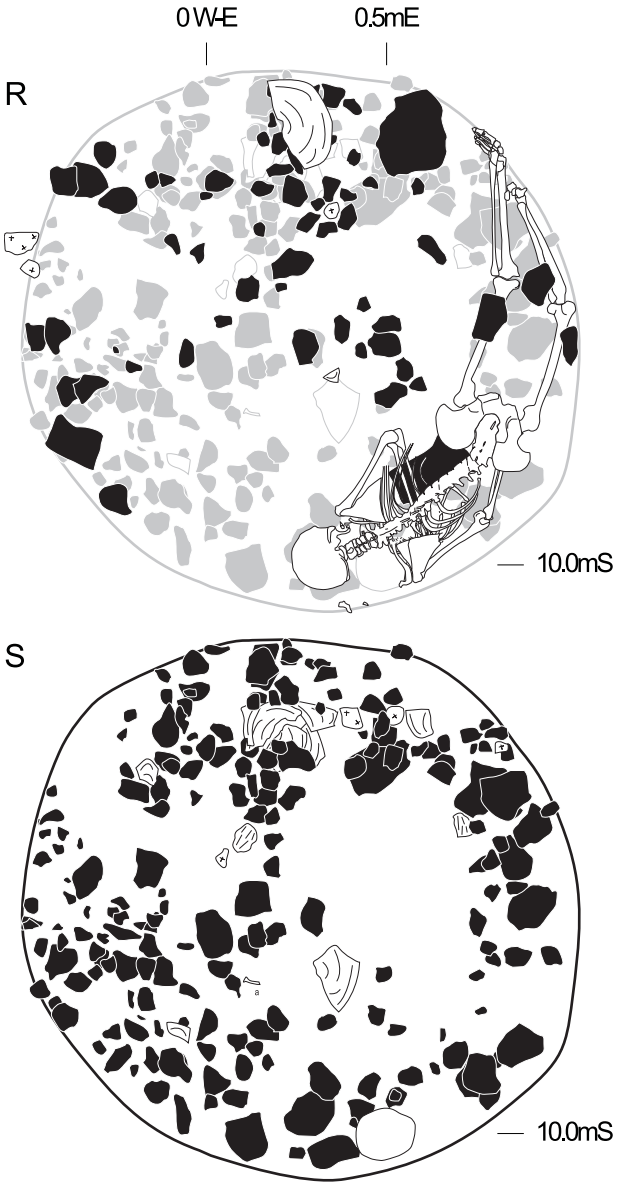

Figure 7.22. *(continued)* Levels of Pit B46.

Table 7.1. Lots Versus Levels in Feature B46.

Level	Lot	
	East of 0W-E	West of 0-WE
A	1339	1444
B	1341	1444
C	1344	1444
D	1395	1444
E	1395	1444
F	1395	1444
G	1398	1444
H	1398	1444
I	1398	1445
J	1398	1445
K	1420	1445
L	1420	1445
M	1420	1447
N	1420	1447
O	1420	1447
P	1422	1448
Q	1422	1448
R	1428	1449
S	1428	1449

Note: Compare to figures 7.8, 7.21, and 7.22.

etrated the loose fill of Pit B76 on that side. This overdug part does not reach all the way down to the level of the bottom of Pit B46 farther to the east. As a result, a low irregular ledge in the floor appears on the western side of the pit.

The main stratigraphic break in Pit B46 is near the boundary of zones 46-3 and 46-5 (Figure 7.21). It corresponds almost exactly to the limit between levels J and K, which is the same as that between lots 1398 and 1420 in the eastern part of the pit (Table 7.1; Figure 7.8). In the western part, it corresponds roughly to the limit between lots 1445 and 1447. Below it, zones 46-12, 46-10, 46-9, 46-8, 46-6, and 46-5 are compact and made up mostly of raw daub fragments and the earth derived from the disintegration of daub into single grains, possibly as a result of repeated treading. The vestiges of bedding in these zones tend to be subhorizontal. Above the break we have zones 46-3 and 46-1, which are of markedly lower density. They are made up of stone in a matrix of loose sandy earth. They display more inclined bedding planes, which suggests that they accumulated more rapidly and that the pit was abandoned soon afterward. Of the minimum four individuals buried in the pit, the bones of three were found in the compact yellow earth below the break.

The floor of the pit (Level S) was strewn with miscellaneous artifacts, including unmodified, heat-fractured, and ground stone; tepetate and daub fragments; isolated sherds; a refittable bowl; and a half of another one. The only near-complete and completely articulated skeleton, that of Individual 46-III, lay right on top of them (Level R), prone and in an arc following the wall of the pit (Figure 7.23). Under his lower trunk lay a large slab of stone, of a kind we find in bell-shaped pits with some frequency and suspect were used as lids to cover up mouths. This one, however, is too small to have served this function by itself. In between the cranium of 46-III and the wall stood the articulated cranium and mandible of Individual 46-IV. Part of the cranial vault had been cut out. On the inside of the foramen magnum we found an almost complete set of bones of a right hand, and on its outside a few more hand bones and parts

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Figure 7.23. Skeleton in Level R of Pit B46.

of the atlas. Lots 1428 and 1449 correspond to these two levels and these two individuals.

In the next two levels, Q and P (lots 1422 and 1448), there were very few artifacts. Most skeletal parts of Individual 46-II were spread through these two levels and along the wall of the pit, with the limbs still articulated. The left foot was missing. An additional, completely articulated right foot was found in Level Q. In levels M through K (lots 1420 and 1447 and a few finds from the bottom of Lot 1445) the density of artifacts, stones, and tepetate blocks is significantly higher. They are all spread along the walls of the pit, leaving its center almost clear. The artifacts include, among others, several partially refittable vessels, parts of two *tejón* censers, a broken metate, and a bone needle. Parts of two human innominates and one lumbar vertebra were present, but they are difficult to assign to any individual in particular. We believe that most of the artifacts found in levels S through K, the vessels in particular, were part of burial offerings placed together with individuals IV, III, and II or with corpses whose bone was subsequently removed from the pit. The fragmented state in which they have reached us is due to the repeated reentries and cleanups of the pit that we surmise took place during the time span represented by these levels.

Above the main stratigraphic break, in levels J through G, were the partially disarticulated bones of individual 46-I (Figure 7.24). The skeletal parts most conspicuous by their absence were the mandible, the right leg, and the left foot. Several bones of a right leg were found close to the mouth of the pit, in levels C through A, and likely belong to the same individual. A worked fragment of a human long bone diaphysis was in Level E and may perhaps have been fashioned from the missing right femur. A long-necked jar with rattlesnake applications accompanied the bones in Level I, but the main concentration of complete or refittable vessels was in levels G and F, which form part of lots 1398, 1395 and 1444. Few artifacts were found in levels J through H and E through A. In general, the provenience of the more fragmented artifacts found in these levels (lots 1398, 1395, 1344, 1445, and 1444) is to be interpreted with more caution, as some of them may have been thrown in together with the earth and stones. From Level J upward, the bone, stone, sherds, and other inclusions are spread rather evenly throughout the pit, which reinforces our impression that they represent the last and relatively rapid depositional event, after which the pit was not entered again until 2004. Ceramic refits among levels O through A, however, suggest that at least some of the fragmented artifacts were detached from intentional offerings in the course of pit cleanup and found their way to higher levels of the fill. Animal bone in Pit B46 is scarce and is probably to be interpreted as tertiary refuse.

Feature B39. The center of this pit was almost perfectly aligned with the central axis of Unit F-1 (Figure 7.5). As a result, a complete section through the pit fill does not appear in Figure 7.7. The mouth of the pit was very wide, and its walls flared out less than those of an average bell-shaped pit. The upper levels of the pit fill were removed over the

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Figure 7.24. Semiarticulated bone and jar in Level I of Pit B46.

whole horizontal surface of the feature. Lower down, the fill of Pit B39 and adjacent features were sectioned along the 0.6mE plane (figures 7.25 and 7.26). The stratigraphic section thus created and further exploration in the vicinity revealed that Pit B39 had cut into and removed part of small Pit B44 to the south. There was also the outline of a previous cut beneath the southern half of Pit B39, backfilled with the same earth of zones 101 and 102 through which it had been dug. This ill-defined feature received the number 96.

The level at which the mouth of Pit B39 was recognized would suggest that it belonged to the second generation of features in this part of Area F and therefore to the second occupation of the site. This seems rare if we consider that bell-shaped pits are practically unknown from the second occupation, Pit B61 in Area B being the only other possible exception at La Laguna. Bell-shaped pits seem to have gone out of fashion by the Terminal Formative at the site of Tetimpa too (Uruñuela and Plunket 2013). There is nothing in the contents of Pit B39 that would require placement in the second occupation either, but the feature is generally poor in sherds, and all of them could be redeposited. It is remotely possible that the very high density of stones in the upper parts of the fill armored it against erosion and that these stones were exposed and reburied largely intact in the course of the transformations that Area F suffered from one occupation to the next. In the absence of absolute dates, the assignment of Feature B39 to one or the other Formative occupation remains uncertain.

There was no clear stratigraphic break within the pit fill, and all of it was recorded as Zone 39-1, a pale yellow loamy sand derived from the decomposition of raw daub, perhaps with some addition of zones 101 and 102. As has already been mentioned, however, there was a clear gradation in the density and nature of artifactual inclusions from mouth to floor, dominated in turn by stone debris from house foundations and burned and raw daub (figures 7.25 and 7.27). In the middle and lower levels, the inclusions tended to cluster away from the pit center, suggesting some gravity sorting of objects dumped through the centrally placed mouth. The most noteworthy artifacts were a few large pieces of ground stone, including part of a stone bowl (Item 802). At a level close to the pit floor were three concentrations of very small bones (items 800, 801, and 951) that may be relevant to the depositional history of the pit. Several thousand bones were present. Most numerous were those of the imbricate alligator lizard (*Barisia imbricata*), rattlesnake (*Crotalus* sp.), different rodents, and frogs. They seem to represent relatively few but almost complete individuals. Since many of the animals are nonburrowing, the concentrations may signal that this pit did stand open for some time, acting as an unintentional trap for small animals. The other possibility is that the bone comes from a few coyote coprolites (Thomas Wake, personal communication 2010) swept into the pit. In contrast to this valuable archaeozoological snapshot of the vicinity of the pit, the sherds it contained can largely be dismissed as tertiary refuse.

Features B50 and B85. Features B85 and B50 were two

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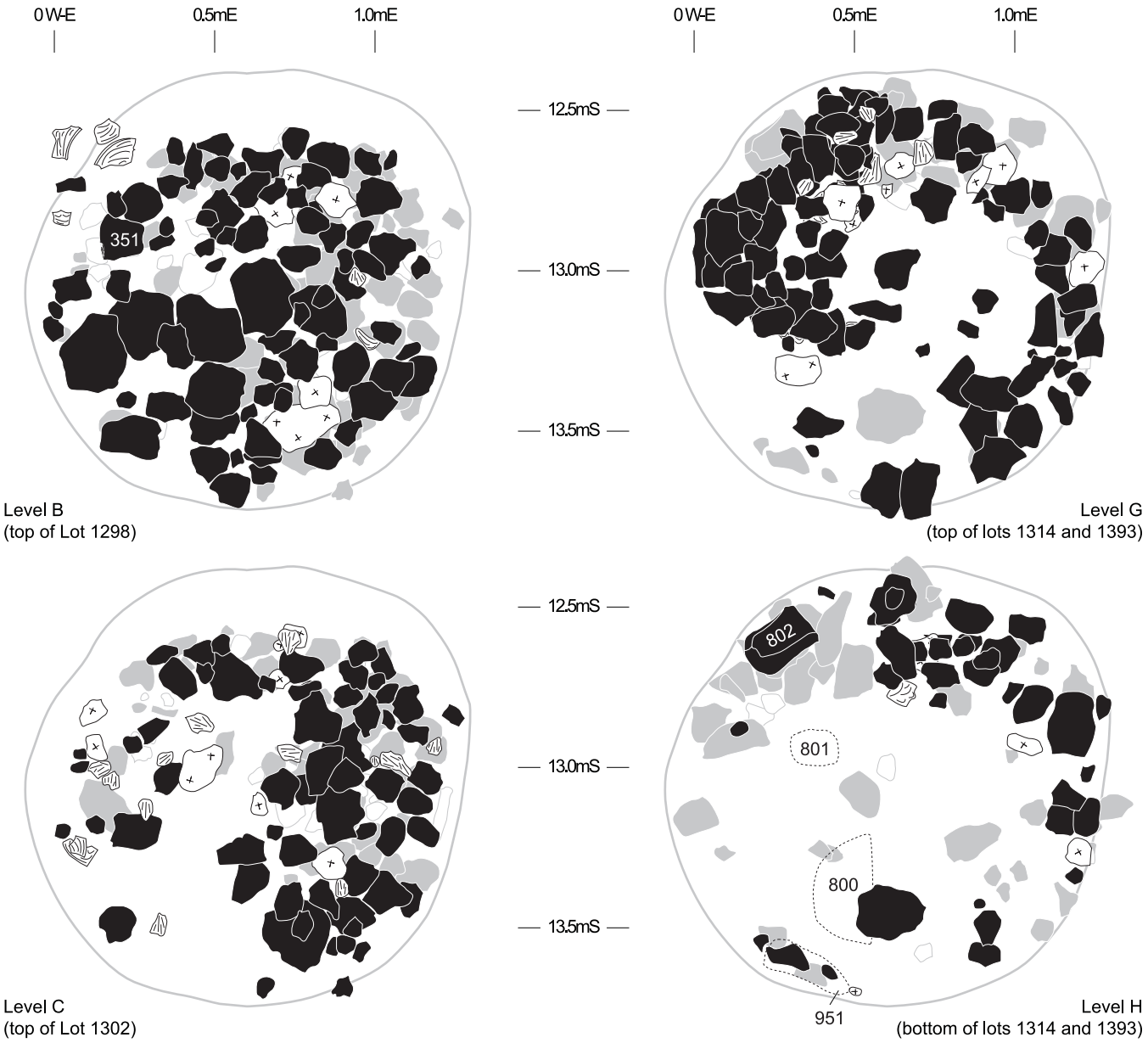

Figure 7.25. Selected levels of Pit B39. Item 351 is shown in Figure 7.27. The dashed lines mark concentrations of small animal bone.

bell-shaped pits dug in sequence by the Formative inhabitants of La Laguna in almost the same spot (Figure 7.14). Pit B50, the more recent one, went much deeper and removed all but a small sliver of Pit B85. The distinction between the two became apparent only after we had exposed the preserved crescent-shaped fragment of the floor of Pit B85. We had not noticed any stratigraphic distinction that would allow us to separate the fills of pits B50 and B85. We therefore suspect that the fill of Pit B85 was removed in its entirety at the time Pit B50 was dug and that during its use-life Pit B50 had a ledge and an irregular wall outline in its northeastern part, inherited from the remnant of Pit B85. When Pit B50 went out of use, the backfill naturally occupied all the volume available, with no regard for what had originally been one pit or the other. For all analytical purposes, the fill of this "double feature" can be treated as one and will be referred to as that of Feature B50.

The attributes of this fill changed rather gradually from top to bottom, even though we separated it into three distinct zones (Figure 7.10). The texture varied from a fine loam near the mouth to almost pure sand at the bottom, where the fill also contained a high concentration of redeposited peds of tepetate. It was variegated, with some patches of gray ash, particularly in its upper half. The density of artifacts and charcoal generally decreased with depth. Per-

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Figure 7.26. Sectioning the lower levels of Pit B39.

haps the most curious feature of the fill was that the limits of the three zones, and some other barely perceptible contacts, tended to follow concave surfaces, in contrast to the more usual convex (heap-like) morphology of bell-shaped pit fills. This may indicate that some of the infilling took place through the caving in of pit walls or through the sweeping or pushing in of debris from an unconstricted mouth or from the ledge left by Pit B85. We were not able to properly delimit the mouth of Pit B50 as it had been obscured by the digging of features B83 and B81A. The cave-in hypothesis finds some support in the textural gradation of the fill, which follows, in stratigraphic order, that of the natural zones (100 to 103) through which the pit had been dug.

Even though part of the fill may be of natural origin, the presence of close to 1,000 sherds and other artifacts attests to the reuse of Pit B50 as a refuse dump. We would tentatively describe the refuse as secondary in view of the fairly large size of the sherds. When almost full, the pit was also used to dispose of the body of a young infant. We found its skeleton in an only partially articulated state but attribute that to the dispersion of bones by a large cacaxtlapa (*Ipomoea stans*) tuber that grew right through it. Other bioturbation was no doubt wrought by burrowing animals, whose traces were most readily apparent in the hard tepetate floor of the pit. However, burrowing was by no means as intense as farther downslope in Unit F-3.

Features B52 and B53. In that last reach we recorded two highly disturbed pits (figures 7.6 and 7.16). Feature B52 was the middle part of a bell-shaped pit. Its upper part had been truncated by erosion while the lower part had been burrowed away to such an extent that no pit floor was

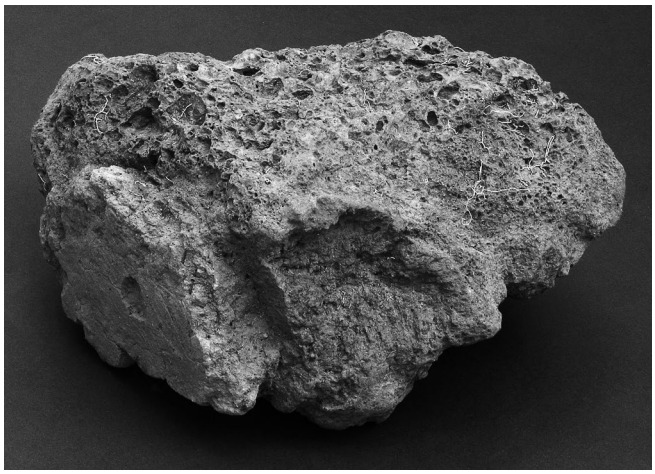

Figure 7.27. Daub attached to tezontle; from Level B of Pit B39.

recognizable. Scraps of a plastic bag showed up where the floor should have been. In its more or less intact portion, the pit contained a fill of yellowish brown loamy sand with many stones in the size categories of cobble or stone. Some stones had apparently been hewn or roughly shaped. They may represent architectural debris similar to that found in pits B39, B46, and B57.

Feature B53, situated a few meters downslope, had a more substantial thickness of fill preserved. It may have been deeper to start with, or it may have escaped severe truncation by erosion. However, it was so heavily burrowed that even its walls were often difficult to trace. Some of them flared out toward the bottom while others

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appeared vertical. The latter may have been produced by the caving in of flaring walls, possibly after they had been undermined by burrowing. What inclines us to think this was originally a bell-shaped pit too is its floor—which is flat, circular, and roughly the diameter one would expect—as well as a large stone slab found in the fill, which might have been used to cover a constricted mouth. The sandy fill could be split into two stratigraphic zones, separated by a slanted boundary about three-quarters of the way down its preserved thickness. The upper zone was yellowish brown and contained a fair amount of artifacts and, near its lower boundary, several pebble- and cobble-sized stones. The lower zone was yellower, almost sterile, and in all likelihood derived from a cave-in of the wall made up of zones 101 and 102. The density and size of sherds point to tertiary rather than secondary refuse.

Patches of laminated mud were observed in both pits, but it is difficult to tell whether they reflect the flooding of the pits before their backfilling or the flooding of burrows in more recent times. The animals that wrought all this havoc may have been cottontail rabbits (*Sylvilagus cunicularius*) or ground squirrels (*Spermophilus mexicanus*), two species whose bones were common in the fill of both pits and the burrows that crisscrossed them.

Other Pits

Feature B55. Other subsurface features are more often than not of very irregular shape, do not penetrate tepetate, and contain varying amounts of Formative refuse. Two of them (B55 and B81A) can be termed middens, as they contain highly concentrated secondary refuse. Feature B55 encompassed four pits cut into one another, distinguished by the letters A through D (Figure 7.7). Unit F-1 allowed us to sample a small portion of Feature B55, but it continued beyond the downslope end of our trench. In stark contrast to bell-shaped pits, the pits of Feature B55 are widest at their mouths and have irregularly concave bottoms. The function of the feature was apparently not compromised by digging each successive pit into the fill of the previous ones. Pit B55D is cut by Pit B55B, which is in turn cut by Pit B55A. Pits B55A and B55C merge laterally into one another, and it proved impossible to determine which was older. The upper 20 cm or so of all four pits have been homogenized into a rather uniform zone of yellowish brown loamy sand, probably by tillage at some point in the Formative or post-Formative history of the site. Below this zone, however, the pits preserve a complex stratigraphy in which one can often recognize individual discard events.

This is most marked in pits B55A and B55B, which are made up of a multitude of thin lenticular zones that are sharply delimited from one another. Many of them dip at high angles toward the center of the pit, despite the friability of the usually sandy sediment matrix. Large sherds follow the inclined bedding planes and are sometimes stacked one on top of another. It is quite clear that each lens represents a single event of tossing refuse from the edge of the pit. The lenses come in different shades of brown, gray, and yellow. A few are almost black due to their high charcoal content. Several are pale gray when dry but dark and soapy when moist due to their high ash content. The ash has in places hardened into nodules that engulf artifacts and other inclusions. Both charcoal and ash likely come from the cleaning of hearths. Broken but partially refittable pots and some bone fragments likely come from other cleanup activities of patios or house interiors. Again in contrast to bell-shaped pits, there is little evidence of redeposited natural zones or house demolition debris. There are some lumps of raw daub, but they are small and largely limited to one of the lenses in Pit B55A. An articulated segment of a human infant skeleton was found in Pit B55A. In the much shallower Pit B55D only one distinct lens was preserved below the topmost zone. The zones of Pit B55C were thicker and may reflect fewer but more substantial discard events. Artifact density and average sherd size in Feature B55 are among the highest at the site as a whole. This, and not the bell-shaped pits, must have been the main refuse dump for one or several households in the vicinity. Since the excavation lots did not follow the fine stratigraphic subdivisions, and the limits between one pit and another were often confused, the whole midden is best treated as a single analytical unit (Figure 7.8).

Features B81A–B81C. Feature B81A is not as well defined. It appeared as a circa 35-cm-thick layer of dark yellowish brown sandy and friable earth filling a shallow depression at the junction of units F-2, F-3, and F-6 (Figure 7.6). To the east it cut into the upper part of bell-shaped Pit B50. To the west it extended beyond the limits of our excavation. It contained a density of large sherds that probably qualifies it as a place of discard of secondary refuse but was nowhere as rich as Feature B55. The upper part of Feature B81A was indistinguishable from the adjoining features B81B and B81C. Farther down it became clear that the latter two had started out as separate pits, with a more regular, circular outline. Feature 81C was 50 cm in diameter. Feature 81B was 25 cm in diameter and could be a very large posthole.

Features B51 and B83. Nearby Feature B83 can safely be categorized as a grave pit, dug exclusively for the purpose of disposing of a body (Figure 7.14). Its horizontal outline was roughly elliptical, 70 cm in the longer axis and 45 cm in the one perpendicular to it. It was at least 65 cm deep and slightly wider at the bottom than at the top but did not flare out in the way of bell-shaped pits. Its walls were somewhat slanted. The floor coincided with the upper contact of tepetate. At this level it was clear that pit B83 had cut into pits B85 and B50. The bottom of the pit had apparently been backfilled a little before the burial took place, creating a surface dipping to the southeast. A tightly flexed, perhaps bundled corpse of an adult male was then inserted. It took up all the space from wall to wall but left

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the upper half of the pit empty. This was backfilled with yellowish earth of zones 101 and 102, in all likelihood the very spoil from the digging of the grave. No nonperishable artifacts were left behind except for a black-and-white dish placed upside down over the body. Feature B51, the other possibly purpose-dug grave pit in Area F, was at the upslope end of Unit F-2. It was a shallow depression dug into the Bt horizon (Zone 100) in which we found the skull, cervical vertebrae, and a few ribs of a juvenile skeleton. The feature and the skeleton probably extend farther to the north, but exploration was not pursued as the bone disintegrated to tiny splinters and powder when lifted.

Features B41, B44, and B69. The remaining pits were of limited interest, either because they were only fragmentarily preserved or because only a small portion of them penetrated into our excavation units. Feature B44 was a small squarish pit, 80 cm to a side, much of which had been removed by bell-shaped Pit B39 (figures 7.5 and 7.26). The loose yellowish brown fill contained a stone apparently spalled by heat and few other ordinary artifacts. Just to the west of it, Feature B41 was an irregularly shaped pit with a concave bottom, with a sequence of artifact-poor sandy fills. Nothing of consequence was found in the sliver that was excavated within Unit F-1. Feature B69 seemed to be an elongate pit, markedly deeper at one end than the other, with sandy fills and some redeposited tepetate fragments. It barely penetrated into Unit F-1, where it merged with Pit 55D. The function of all these pits remains unknown.

Above-Surface Features

Feature B70. Our excavations in Area F uncovered two slope-parallel belts in which above-surface features of Formative age are preserved. One is at the upslope end of the area, in Unit F-4, the other in Unit F-2. Each contains a set of features belonging to a house built and used during the second occupation of the site, after circa 50 B.C. Both have already been briefly described in the section on general stratigraphy. Feature B70 was the corner of a large house platform (figures 7.5 and 7.9), more fully explored in subsequent years by Carballo (2006, 2009) and designated Structure 15M-1. Our limited excavations produced an insignificant sample of artifacts, mostly from the yellow clayey platform fill retained by wall B70A, which we lowered only some 20 cm. An infant skull and a few vertebrae appeared in this operation. The skull was broken and compressed, and we suspect it had been inadvertently redeposited when the platform fill was emplaced. The area inside the L formed by walls B70A and B70B was of some interest. The upper contact of Zone 100, as well as the mouth of unexcavated Feature B80, felt rather compact in this area. There were some very small sherds, obsidian splinters, and charcoal fragments embedded in this surface. We think they may have been trodden into it by the repeated transit of people. Three large postholes (features B71, B77, and B78) stood out in the same area by virtue of their gray friable fill. Holes B71 and B77 were excavated, the latter yielding two pebbles that may have served to steady the post. The position of the posts suggests that they may have supported the long eaves of a house that stood on the platform. The wall segment referred to as Feature B70B had to be dismantled in the end to get access to the mouth of bell-shaped Pit B43. This operation revealed that its fabric was very different from that of Wall B70A. Much smaller stones were used and were apparently set in a mortar made of mud, white fibrous scraps (perhaps an organic temper), and pulverized sandy tepetate of a variety that crops out in some parts of the site but is distinct from Zone 103.

Feature B47. The other set of house remains is in the vicinity of the stone alignments referred to as Feature B47 (figures 7.6 and 7.15). In this case we have no absolute dates to rely on, but the stratigraphic position and the typological affinities of the vessels of adjacent Feature B49 point to the last centuries of the Formative. The burned daub found near and above Feature B47 raises the possibility that its stones were the foundations of a wattle-and-daub house. The long north–south line of stones was the one that was best defined. The stones, though unfaced, had been carefully placed with their flattest faces to the west, so that an almost straight line would form on that side. On the opposite, east side they were more jagged and accompanied by three shorter lines of smaller stones. Two of them were straight, one curved to describe a quarter of a circle. A perpendicular alignment of large stones abutted the west side of the north–south line. The burned daub was very clearly concentrated in the narrow strip exposed to the west of the north–south line. It continued along this strip to the north, beyond the point where Feature B47 ends, and extended over the mouth of Pit B51. We do not know for sure the structural significance of any of the stone alignments, but we guess that the west side represents the outdoor area of the patio. Under this scenario, the house wall would have collapsed outward. The three shorter alignments could have served to wedge in some of the upright poles of the wattle framework on the inside of the house. We did not excavate deep enough on the east side to determine whether a stamped earth floor was present there.

Feature B82. About 1 m to the south of Feature B47, a different kind of stone alignment, Feature B82, ran perpendicular to the north–south line of Feature B47 (figures 7.6 and 7.28). It was made up of small cobbles of quite uniform size. There are two courses. The lower longer one was surmounted by a shorter upper one. The upper course, however, did not rest exactly on top of the lower one but was set off to the south and was supported by earth on that side. The cobbles seemed too small to be of any structural significance, and the only function we can imagine for them is that of formally delimiting a patio area.

Features B48 and B49. At the northern extreme of Unit F-2, features B48 and B49 were aligned with the main axis of Feature B47, suggesting that they were contemporaneous. In view of its size and alignment, Feature B48 could

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perhaps be the hole left by a large post. We did not scoop it out, but near its top we recovered a few nodules of an unidentified substance. Feature B49 consisted of a pair of very large red-slipped composite-silhouette bowls, one placed upside down over the other (Figure 7.15). They had been fractured by roots or the weight of the overlying earth but were otherwise intact. The lower vessel was propped up on one side by ovoid, apparently water-worn pebbles. A scatter of similar pebbles extended farther to the northwest, toward the strip rich in burned daub and over the mouth of Pit B51. The only other spot at La Laguna where we found similar pebbles was the heap at the edge of Feature B66 in Unit F-1 (see above). Inside the vessels we found the very fragmentary remains of an infant cranium, teeth, and a few long bones.

AREA B

Area B is located on the northeastern side of the pass between Cerro Las Ardillas and Cerro La Gazca, in a small valley confined by the coalescing footslopes of both hills (Figure 5.1). At the time of excavation, the valley was overgrown with tall grass and a thicket of juniper trees. It is said to have been valued for its fertile soil and to have formed part of the *tejales*, the name former hacienda laborers call the plots they were allowed to farm for their own benefit. Metepantles cross the valley, following the wedge-shaped contours. They are very widely spaced, in keeping with the very gentle slope. Practically no pre-Hispanic artifacts are visible on the ground surface, except where they have been thrown up onto the metepantle berms with the ditch spoil. Just across the boundary fence of Rancho Xalmonto, however, on the footslope of Cerro Las Ardillas, are two mounds, 10M-1 and 10M-2 in the current site nomenclature. They are smaller than the mounds at the center of the site, but Mound 10M-1 seems particularly well preserved (Figure 7.29).

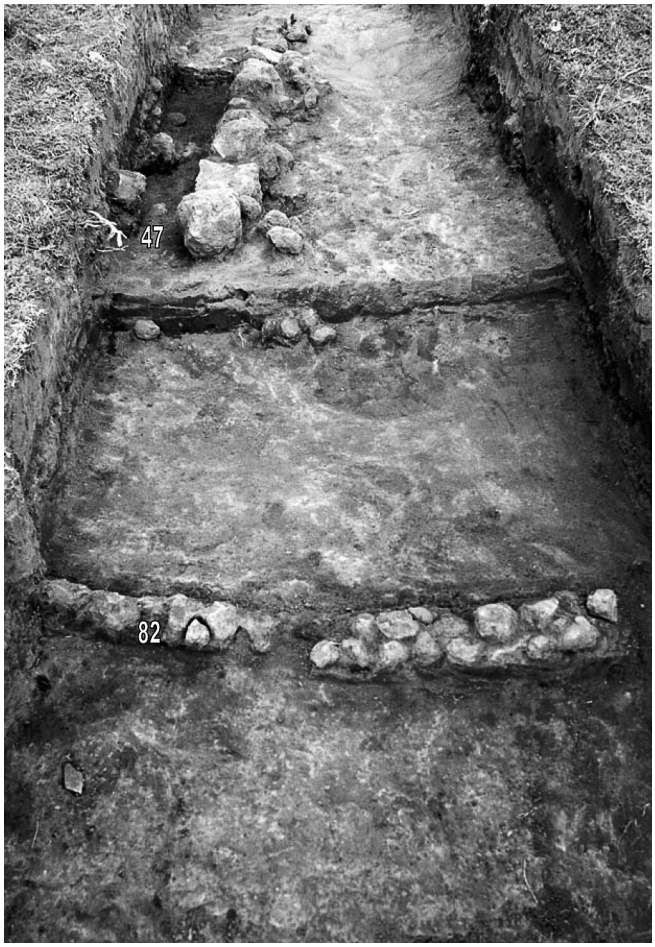

Figure 7.28. Feature B82 and downslope end of Feature B47.

The excavation units were laid out along a transect that ran from the valley axis toward Mound 10M-1 (Figure 7.30). In a general sense, excavation was motivated by the desire to explore an area that was, by virtue of its topographic position, conducive to sediment deposition rather than erosion. More specific reasons guided the layout of units B-4 and B-1. In B-4 we noticed a buried stone wall (Feature B7), about 15 m downslope from Mound 10M-1. Three courses of it jutted out above the ground, at the upslope edge of a recent metepantle ditch. The ground behind the wall was almost flat. We thought it was likely a very wide tread of an agricultural terrace on the footslope of Cerro Las Ardillas and wanted to investigate its age and morphology.

Unit B-1 was laid out so that it would straddle the very axis of the valley. No archaeological remains were visible on its surface, and we expected to uncover a stratigraphic sequence devoid of human-made features, which would reflect the history of colluviation from the two hills. There is no channelized flow of water in the valley nowadays, but if there ever were, this was where we expected to find traces of it, as well as any remnants of cross-channel terraces (see Whitmore and Turner 2001:154–161). Unit B-2 was dug in an attempt to correlate the deposits of units B-4 and B-1. The remaining units (B-3, B-5, B-6, and B-7) were added on to explore particular features. In 2010 more extensive excavations were undertaken in the vicinity of Unit B-1, but their results are not reported here. In the end, excavations in Area B yielded few agricultural features, none of them associated with the Formative occupation of the site. Instead, we found an extraordinary density of well-preserved Formative architecture, midden, and mortuary deposits (figures 7.31 and 7.32).

General Stratigraphy

Stratigraphic sections through Area B are shown in figures 7.33, 7.34, 7.37–7.40, 7.46, and 7.50. We discuss the stratigraphy proceeding roughly in the downslope direction. Closest to the mound, units B-4 and B-5 were dominated by architectural debris and other human-made deposits.

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The more general pedostratigraphy of the area was easier to make out in units B-1, B-2, B-3, B-6, and B-7, dominated by pits dug through a series of soils developed in colluvial deposits transported by gravity down the slope of Cerro La Gazca. Some of these can be described as anthropogenic but were not intentionally emplaced. A simplified Harris matrix (Figure 7.41) summarizes the stratigraphic relations of the most important zones and features.

Excavation of Feature B7 revealed not one but two superimposed walls of very different fabric (figures 7.33 through 7.35). Feature B7D is the inner and older one. Its foundations rested against a ledge cut in the tepetate (Figure 7.36). Its inclination makes it clear that it was never a freestanding wall but rather a retaining wall. The younger wall, Feature B7A, was placed right in front of it at some later point in time, perhaps to give it extra strength. The foundations of the outer wall rest on a surface that had been raised by some 40 cm since the building of the inner wall, through the addition of Zone 34. From the outset, the inner wall retained a great volume of fill (Zone 10), 1 m thick and extending in the upslope direction beyond the limits of the excavation. The contact of the fill with the tepetate is abrupt, which means that the tepetate was exposed at the ground surface at the moment the fill was brought in. The fill lacks any internal stratification, which suggests that it was emplaced all at once, simultaneously with the raising of the inner wall.

A few meters behind the retaining wall, the fill buries a house foundation wall, Feature B33 (figures 7.33 and 7.37). The stamped earth floor that abuts it and the floor preparation layers underneath (zones 24 and 21) stop abruptly some 40 cm away from the wall. A vertical cut separates them from the fill accumulated behind Wall 7D. It is to be concluded, therefore, that most of the floor and the structure it belonged to had been stripped away before the emplacement of the fill, exposing the tepetate. The fact that the wall of Feature B33 also rests directly on top of tepetate, however, indicates that tepetate must have already been exposed here on a prior occasion by an erosional event of unknown cause and age.

All the layers upslope of Wall B7 and below the lower boundary of Zone 5 contain exclusively Formative artifacts. The sherds are rather large, and there is nothing that would make us suspect redeposition after the Formative. All these layers are buried by a layer of sandy and friable earth (Zone 5) with fine gravel-sized inclusions of tepetate and tezontle. It displays the poor sorting typical of colluvial layers. Its age is difficult to estimate. The surface soil forming in it is only moderately developed, which suggests that the colluvium is relatively recent and was not deposited immediately after the abandonment of the Formative settlement. As we will see, this colluvial layer extends over all of Area B.

Downslope from Wall 7 the upper boundary of the tepetate is equally abrupt and irregular, which confirms that it marks an erosional unconformity. All zones on top of the tepetate contain artifacts and have been modified to a large extent by human activity. Nonetheless, downslope from about 15mW, one can still make out a buried soil profile, consisting of an A and a Bt horizon (zones 29B and 37D). The A horizon is very dark and has a well-developed subangular to granular structure. It gradually gives way to the underlying Bt horizon, which is distinguished by a yellower color, prismatic peds, and prominent clay coats. The clay enrichment is very advanced, as this horizon has a field texture of clay loam. These marked pedogenic attributes would have required a long period of landscape stability to develop, and we think that these two zones are a remnant of the soil that draped Area B prior to human occupation. The erosional unconformity at the upper boundary of the tepetate would then belong to still earlier times and have nothing to do with human activity at the site.

On top of Zone 29B rests Zone 28, which is also a buried A horizon. It is very similar to Zone 29B but can be distinguished from it by a slightly less developed structure and a slightly paler color of the organic-rich coating of ped faces. Zone 28 was deposited by colluvial processes. We think this occurred near the end of the first Formative oc-

Figure 7.29. Unit B-4 and the adjacent mound.

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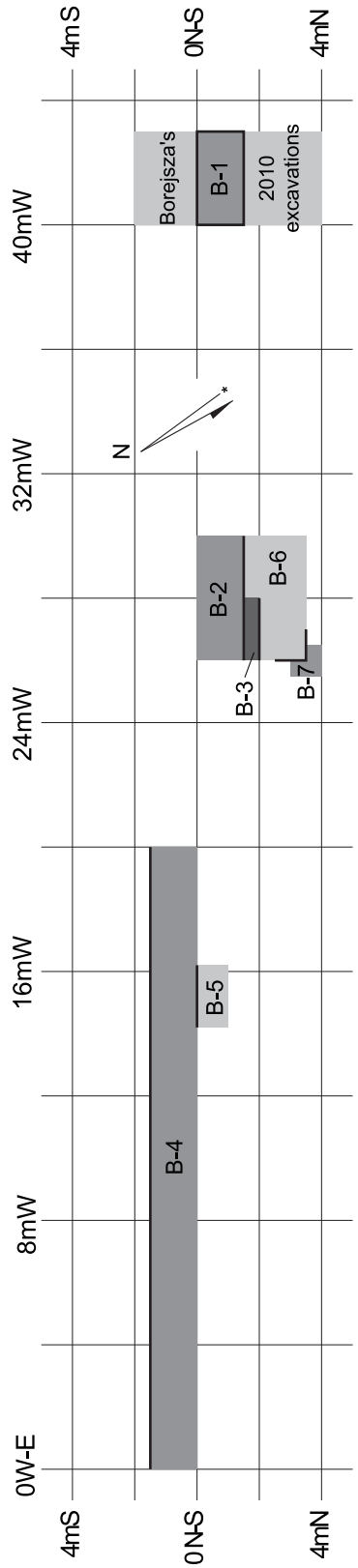

Figure 7.30. Area B; layout of grid and excavation units. Continuous lines mark sections drawn. Grid east is oriented up the slope of Cerro Las Ardillas and toward Mound 10M-1.

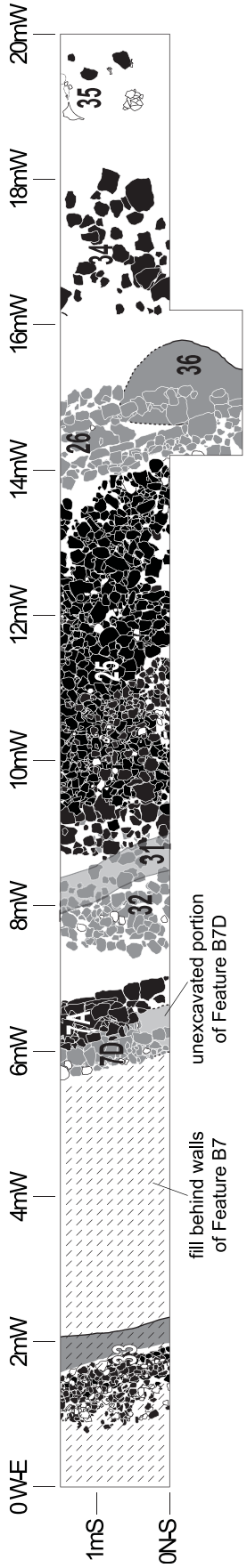

Figure 7.31. Index of Formative features excavated in units B-4 and B-5. Feature B31 is probably post-Formative.

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cupation of the site, though this age assignment rests primarily on correlations with the better dated stratigraphy of excavation units farther downslope. Zone 28 must have itself been derived from Zone 29B and thus have inherited a substantial amount of organic matter. It raised the ground surface by some 10 to 15 cm. It was modified again by soil formation but did not quite reach the degree of development of Zone 29B before it was buried by the more recent colluvial Zone 5.

Upslope from 15mW, the pre-occupation soil profile is ever more difficult to make out, as most of the earth seems to have been churned up by the digging of pits, construction work, perhaps tillage, and other cultural activity during the Formative. The Bt horizon is preserved only in the form of isolated pockets (zones 36, 37A, 37B, and 37C) in which the original peds are broken up and mixed with artifactual inclusions. Zone 29A is the most organically enriched in that part of the trench and merges laterally into Zone 29B, the A horizon of the pre-occupation soil. We therefore think that the top of zones 29A and 29B corresponds roughly to the ground surface occupied by people at the outset of the first occupation of La Laguna. However, the concave upper boundary of Zone 29A may signal that it was dug out or scoured before being buried. Zone 29A is also distinguished from Zone 29B by its lower bulk density, which may be the result of redeposition or tillage.

Upslope of about 13mW, Zone 29 was buried by deposits much thicker than any part of Zone 28. These seem to represent debris from the demolition of some large Formative structure. Zone 26 is full of burned daub and plaster fragments, whereas Feature B25 is an enormous heap of clast-supported stones and large fragments of charred wood. This is prolonged upslope by Zone 8 and draped over by Zone 9, both friable but loamy and with a weak to moderate subangular structure. All three must have been dumped intentionally rather than washed in. By the time they were in place, the face of Wall 7 had been almost completely obstructed. Therefore, the deposition of the demolition debris must have taken place at a stage when Wall B7 and the structure it retained went out of use or at least were substantially remodeled.

It would be tempting to correlate the demolition with the deposition of Zone 28 farther downslope, as this would give us a neat picture of two continuous ground surfaces corresponding to the two Formative occupations of the site. Distinct ground surfaces, however, are difficult to trace between 13mW and 15mW, where the stratigraphy is complicated by subsurface features, in particular a double line of stones that crossed our trench (Feature B26; Figure 7.52). Variants of the organic-rich earth of Zone 29 were found both on the outside and inside of the trough formed by the stones.

As suggested above, the second colluvium (Zone 5), the one that buried the last Formative ground surface, was not deposited immediately after the Formative settlement was abandoned. As a result, the development of the second A horizon, from the top of zones 28 and 29, likely continued for a long time afterward. Before Zone 5 was washed in, a ditch (Feature B31) was dug into the Formative deposits. It is smaller and more V shaped than the metepantle ditches we have excavated but could have fulfilled a similar role. It silted up with an organic-rich mud indicative of a slope that supported plant growth. It did not contain any datable inclusions. The two other ditches in Unit B-4 are much later, as they cut into the colluvium that buries Ditch B31. They were both visible on the surface, and their berms contained glazed sherds. The upper one is less silted up than the lower one, presumably because of the protec-

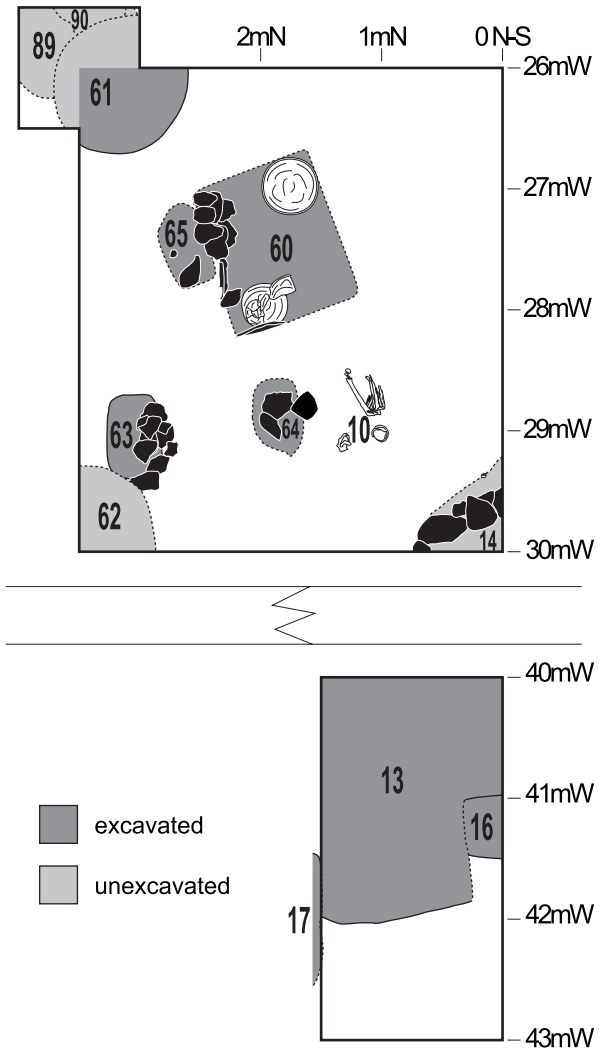

Figure 7.32. Index of Formative features in units B-1, B-2, B-3, B-6, and B-7. The widest horizontal extent of each feature is shown. Outlines that were difficult to define are dashed.

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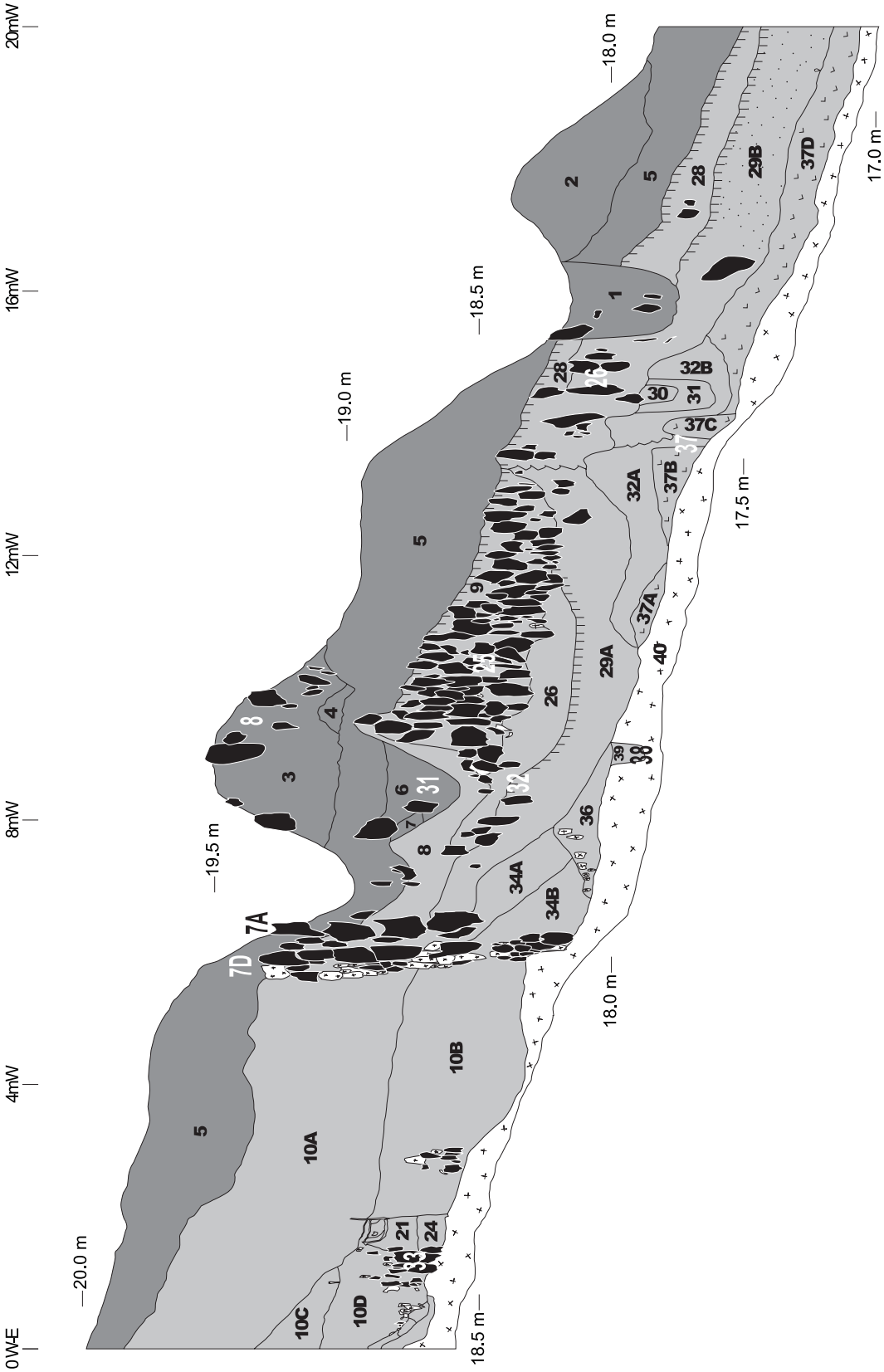

Figure 7.33. Unit B-4; 1.5mS section.

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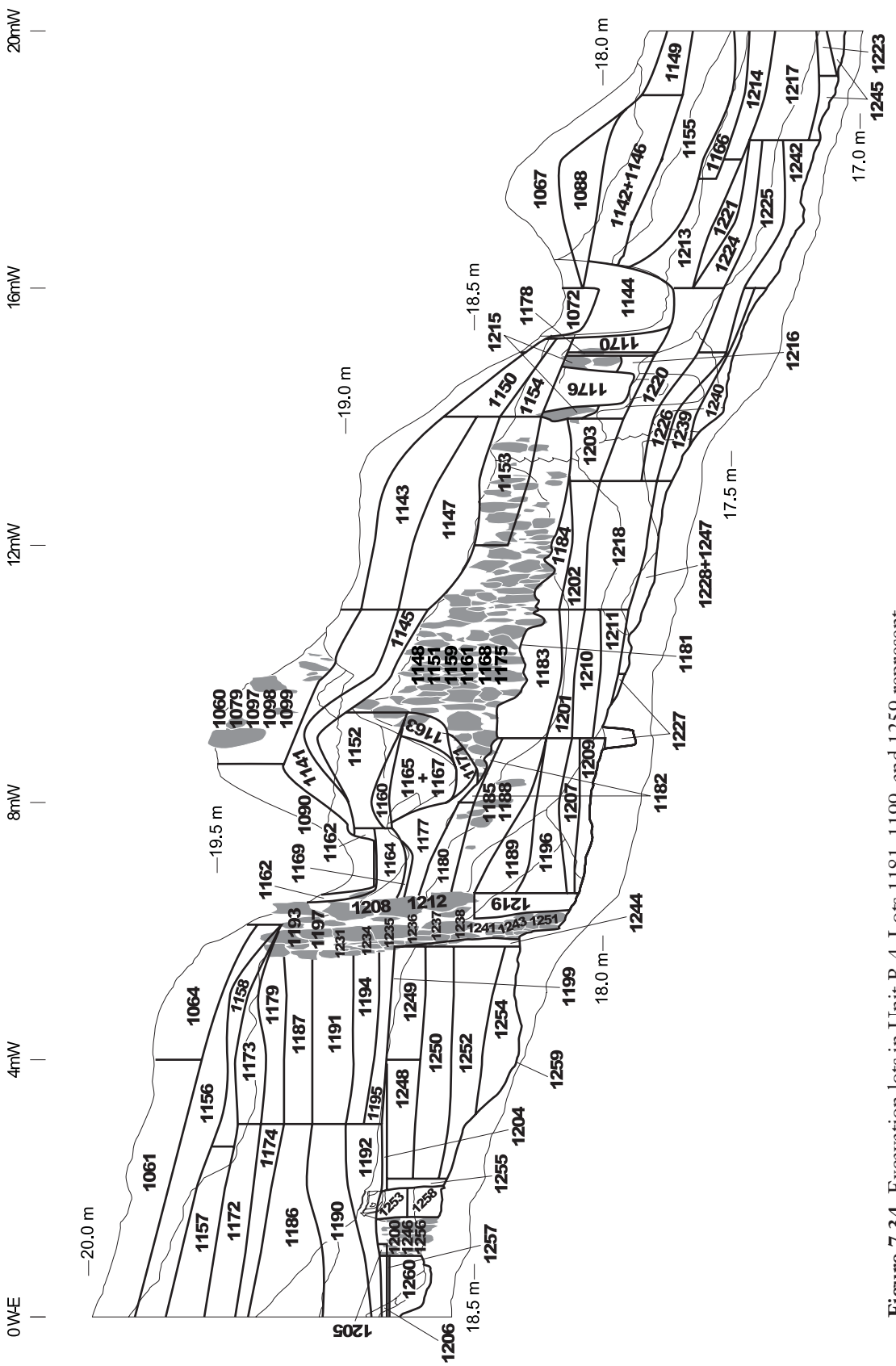

Figure 7.34. Excavation lots in Unit B-4. Lots 1181, 1199, and 1259 represent the troweling of contacts of other lots. Compare to Figure 7.33.

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tion afforded by Wall B7. Both ditches are part of the most recent metepantle system.

The stratigraphy recorded in the central part of Area B (units B-2, B-3, B-6, and B-7) is unique in that it displays no obvious traces of any erosional unconformity. The sequence recorded along the plane of 1.5mN (Figure 7.38) is recognizable in all four units. Zone 4, even though hard, is different from the tepetate uncovered in Unit B-4. It has a very strongly developed prismatic structure, prominent dark clay coats on ped faces, slickensides, bluish mottles (presumably manganese in redox concentrations), and some carbonate filaments. It could well represent the surface horizon of a Pleistocene soil. Slickensides would have developed as the peds swelled and shrank in response to seasonal changes in the moisture content of the soil. The redox concentrations reveal that the soil had been subject to seasonal waterlogging, something to be expected in this topographic low. The upper boundary of Zone 4 is not an unconformity but rather a gradual transition to Zone 3. Nonetheless, we interpret zones 3 and 4 as belonging to two different sedimentary units, as they are quite different and the dark coating of ped faces is more pronounced in the lower zone, the opposite of what one would expect if they were part of the same soil profile.

The next sedimentary unit is made up of zones 3 and 2B. The transition between them is completely diffuse, so that the line that separates them in the section drawing is a somewhat arbitrary imposition. These two zones are the thickest noncumulic soil profile we have ever described in Tlaxcala. Zone 2B is a black A horizon, and Zone 3 is the underlying B horizon. No unmodified parent material is identifiable, as pedogenic alteration reached all the way to the lower boundary of Zone 3 and likely obscured a once clearer boundary to Zone 4. Soil formation in general must have been relatively rapid in Area B as the amount of rainwater percolating through the profile is enhanced by its topographic position. Nonetheless, the advanced pedogenic alteration of zones 2B and 3 must have required a considerable amount of time, and we would place it in the millennia preceding the Formative occupation of the site. Indeed, the first artifacts in this stratigraphic sequence do not appear until the top of Zone 2B, and even there they are extremely scarce and can usually be related to some subsurface feature dug into it.

Figure 7.35. Platform walls B7A and B7D during excavation.

To the eye, Zone 2A is virtually identical to Zone 2B. It is only by touch that one can sense a textural difference between the two. Zone 2A is finer but at the same time con-

Figure 7.36. Foundations of platform wall B7D anchored in tepetate.

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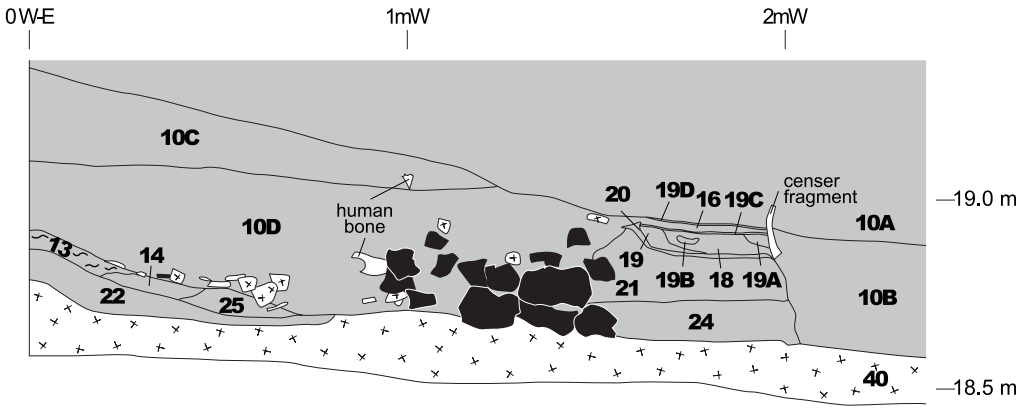

Figure 7.37. Unit B-4; 1.5mS section in the vicinity of Feature B33 house remains.

tains coarse-sand- and fine-gravel-sized inclusions of what appears to be weathered tezontle. It is thus probably more poorly sorted than Zone 2B. This difference is difficult to explain by pedogenic processes acting on the same parent material. More likely, Zone 2A represents a later colluvial unit burying an older ground surface. The matrix of Zone 2A contains a low density of Formative sherds, which indicate that it must have been deposited during or after that period.

The topmost Zone 1 is a sandy colluvial layer. It is enriched in organic matter by soil formation but not to the same extent as zones 2A and 2B, which again makes us think it was deposited in relatively recent times. Its weak pedogenic structure may be due to both the short time span available for soil formation and the breaking up of peds by plowing. A horse-drawn plow, however, could not penetrate to the bottom of this 30-cm-thick zone and into Zone 2A. Zone 1 contains a very high density of Formative sherds, but all of them are extremely rolled and fragmented. Postclassic sherds also make an occasional appearance. Their small size makes us think they were brought here by colluvial processes rather than being discarded in the area and mixed in by the plow. This would mean that the colluvium is Postclassic or later.

Zones 2A and 2B have been disturbed by several Formative features (Figure 7.32), and it is their presence and differential preservation that allow us to clarify the chronology of the sequence of colluviation in Area B. With the exception of one bell-shaped pit (Feature B61), dug from the top of Zone 2A, all of them turned out to be associated with the disposal of human remains. The only well-preserved skeleton came from Pit B63, which was also the deepest one. Its outline was not noticed until excavation reached Zone 2B. It therefore seems that the pit was dug from its top, before Zone 2A was deposited.

In contrast, features B10, B64, and B65 were concentrations of very fragmented human bone, representing only selected skeletal parts. Features B64 and B65 were each marked with a few large stones placed on top of the bones. Feature B10 had no such marker, but not far from it was Feature B60, which consisted of stones set vertically into the earth, in two alignments forming an L and enclosing vessels placed as offerings (figures 7.32 and 7.49). The outlines of features B10, B64, and B65 could not be made out at all, and that of Feature B60 only along the two sides marked by stones. The depths at which the finds were made, however, suggest that all four sets of mortuary remains had originally been placed in pits dug into and backfilled with Zone 2A. Possible pre-Hispanic tillage, and above all the intense illuviation of clay and organic matter, would have completely obliterated the pit outlines. In the sections that separate units B-6 and B-7 we could clearly observe how these pedogenic processes had blurred the outline of the mouth of bell-shaped Pit B61, perceptible only because of its much greater depth and the more contrasting attributes of its fill (figures 7.50 and 7.51).

We can thus set apart Pit B63, apparently dug from the top of Zone 2B, from all other pits, dug from the top of Zone 2A (Figure 7.41). Pit contents leave little doubt that they are all Formative. The preservation of Pit B63 is better because it was protected by the deposition of Zone 2A during the Formative. The preservation of the other pits is poorer because they remained close to the ground surface until Zone 1 was deposited—that is at least until the Postclassic. Correlations with the overall erosional history of La Laguna, as well as more specific correlations with Unit B-1 (see below), allow us to equate the two sets of features and the two ground surfaces with the two Formative occupations of the site. Radiocarbon dates on bone from features B63 and B10 confirm their chronological disparity, even though both seem a little too early. Bone from B63 was dated to 790–550 B.C. (AA94042), which leaves no doubt that the burial belongs to the first occupation of the site. Bone from B10 was dated to 410–240 B.C. (AA94044). Even if we pushed this date forward by a century to account for the proposed systematic error of dates on bone, we would not quite reach the beginning of the second occupation at 50 B.C. Feature B10 may thus represent isolated mortuary activity at the site during the hiatus in occupation.

If our correlations are correct, then zones 1, 2A, and

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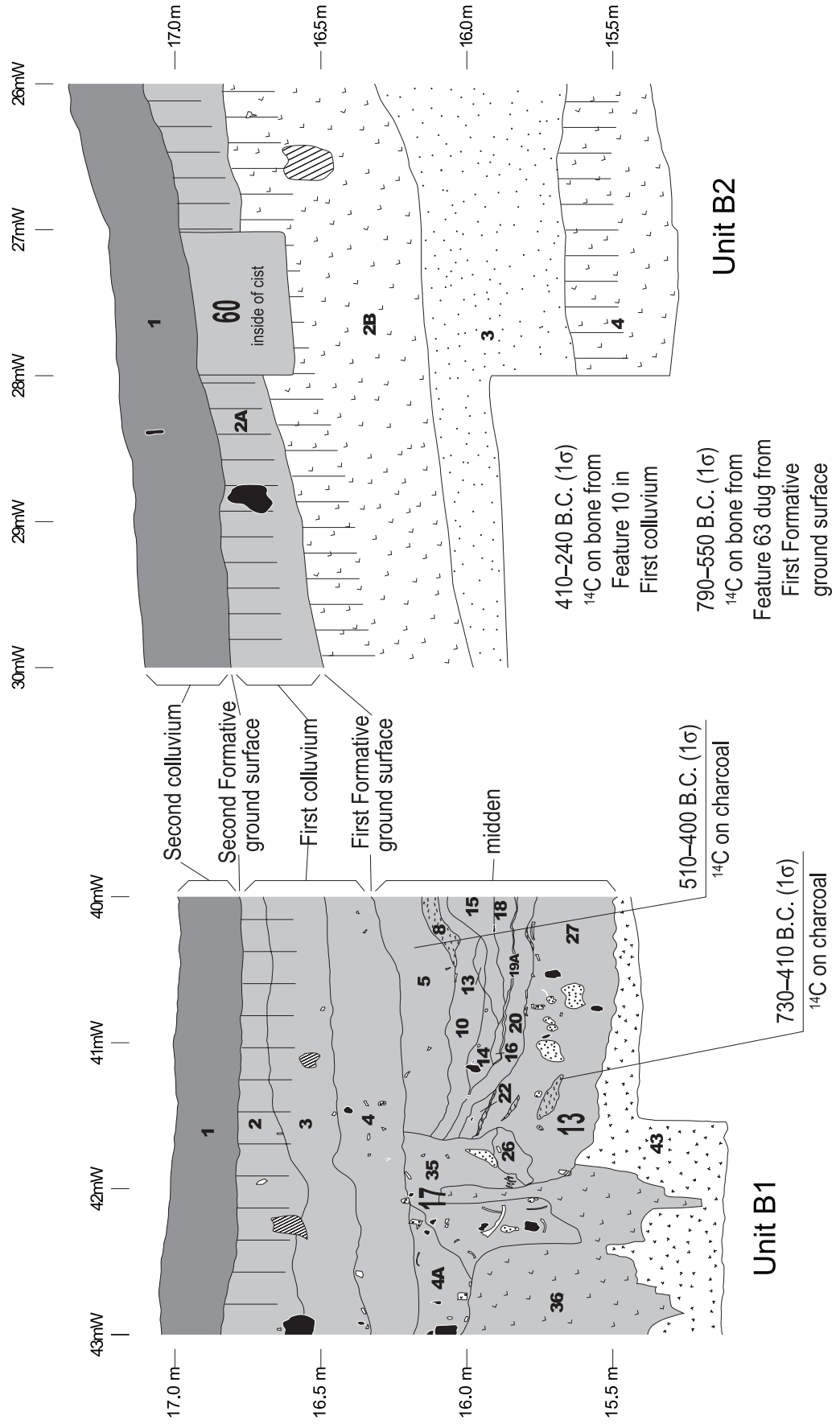

Figure 7.38. Correlations between 1.5mN sections of units B-2 and B-1.
The outline of Feature B60 has been reconstructed from the distribution of its contents.

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2B are, in pedostratigraphic terms, the same as respectively zones 5, 28, and 29A of Unit B-4 (Figure 7.41). There is, however, a textural gradient between the two. Those of Unit B-4, being closer to the valley margin, tend to be coarser. Having recognized two Formative ground surfaces in Unit B-2, we are in a better position to interpret the complex stratigraphy of Unit B-1 (figures 7.38 through 7.40). The tepetate underlying the whole unit (Zone 43) is roughly similar to that of Unit B-4 (Zone 40), and its upper boundary is also an irregularly shaped erosional unconformity. Several features were dug in Formative times down to or below this boundary, so that most natural deposits that overlay the tepetate have been removed. The southwest corner of the unit is a possible exception. Here, Zone 38—firm, with a moderately developed structure and devoid of any artifacts—seems to be the remnant of a B horizon, roughly equivalent to lower Zone 2B and Zone 3 of Unit B-2.

A series of at least four different features crosscut each other within and extend beyond the limits of Unit B-1 (figures 7.32 and 7.39). Feature B18, filled with Zone 36, is rather enigmatic and not necessarily cultural. It seems to reflect the cutting and backfilling of Zone 38, from which it is distinguished by the near absence of any structure. It seems texturally graded, from coarser at the bottom to finer at the top. It is devoid of artifacts too. At the bottom of Feature B18 there seem to be a few large peds detached from the tepetate and other natural horizons (see zones 37 and 41). Features B13, B16, and B17 contain Formative refuse. Feature B13 dwarfs the other two. It is an enormous midden that was not exposed in its entirety even by the more extensive excavations of 2010. Its own complex depositional history is dealt with below. Though different in size and contents, these four features originate from the same ground surface. As we argue below, the ground surface corresponds to the first Formative occupation. Zones 4 and 4A are a deposit of yellowish loamy sand that was spread over the mouths of all the pits after they had gone out of use and that filled any remaining hollows. Some churning of the pit mouths may have accompanied the deposition, as they contain a considerable amount of Formative artifacts, including large sherds and stones, the latter more common in Zone 4A. Whether the deposition was intentional or not is unclear. Zone 4 may be at least in part colluvial. Its upper boundary did not serve as a new ground surface for any length of time, as it is hardly affected by soil formation.

Zones 3 and 2 are continuous over the entire unit and separated from Zone 4 by a clear boundary. They contain exclusively Formative artifacts, substantial in quantity but more fragmented than in the deposits underneath. They are almost certainly of colluvial origin. They resemble Zone 2A of Unit B-2 and Zone 28 of Unit B-4 and were likely produced by the same Formative-age event. Combined, they are thicker than either of their equivalents. This may be the result of sediment input from Cerro La Gazca, to which this unit is closer, in contrast to the other units, which are closer to the much smaller Las Ardillas. The truncation of bell-shaped Pit B3 documented higher up on La Gazca, in Area A, likely occurred during the same erosional event that produced this colluvium.

Zones 3 and 2 are very organic rich and in places display a granular structure that is normally the result of intense faunal activity. Some levels are practically pitch black when moist and may have incorporated not only decayed but also burned plant matter. As with Zone 28 in Unit B-4, the high organic content results from the combination of two processes: the redeposition of A horizons from further upslope, and soil formation in situ following the deposition of Zone 2. The dark coloration of zones 2 and 3 can be observed to be closely associated with the relatively well-developed granular peds, but these seem suspended in a matrix of much paler, sandier, structureless sediment. This points to the colluvial origin of much of the organic matter. Soil formation from the top of Zone 2 started in the Formative and continued after it, until the deposition of the next higher colluvial unit, Zone 1, which is the same surface deposit as almost everywhere else in Area B.

Two radiocarbon dates were obtained in Unit B-1. They allow us to confirm the absolute chronology of the sequence of colluviation. They were both on fragments of charred conifer wood and came from different levels of the large midden, Feature B13. At 730–410 B.C. (Beta 210313) and 510–400 B.C. (Beta 210312) they are almost indistinguishable, but they prove beyond doubt that the oldest ground surface in Area B is associated with the first Formative occupation of La Laguna (see Table 11.10). The second ground surface would be associated with the second Formative occupation, though it persisted for over a millennium after the site was abandoned. The modern ground surface in Area B is the third one trodden and cultivated by people and is probably no older than the Postclassic. The Harris matrix (Figure 7.41) makes it clear that the relationship between the deposits on either side of circa 14mW is difficult to establish on stratigraphic grounds alone. On the basis of their artifactual content, the Formative deposits upslope of that plane seem to belong mostly to the first occupation, but this should be confirmed by radiocarbon.

Architecture and Demolition Debris

The architectural remains discovered in Area B are modest, and, as has been explained, the excavation strategy was not designed to recover complete floor plans. In view of the general dearth of preserved ground surfaces of Formative age in Tlaxcala, however, they acquire some relevance. Moreover, the architectural remains exposed elsewhere at La Laguna seem to belong almost exclusively to the second occupation of the site. Those of Unit B-4, though not dated directly, are associated with artifact assemblages that

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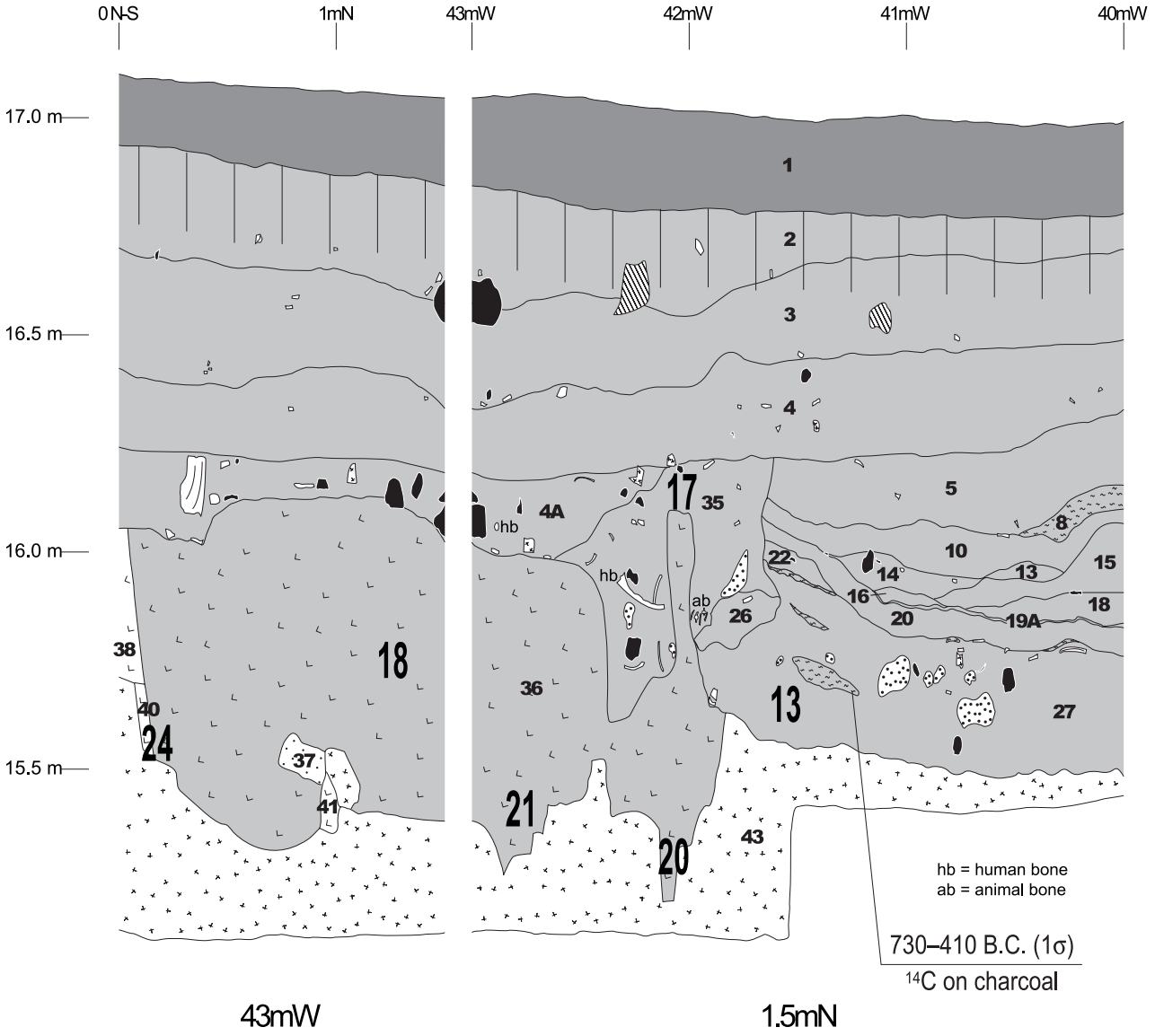

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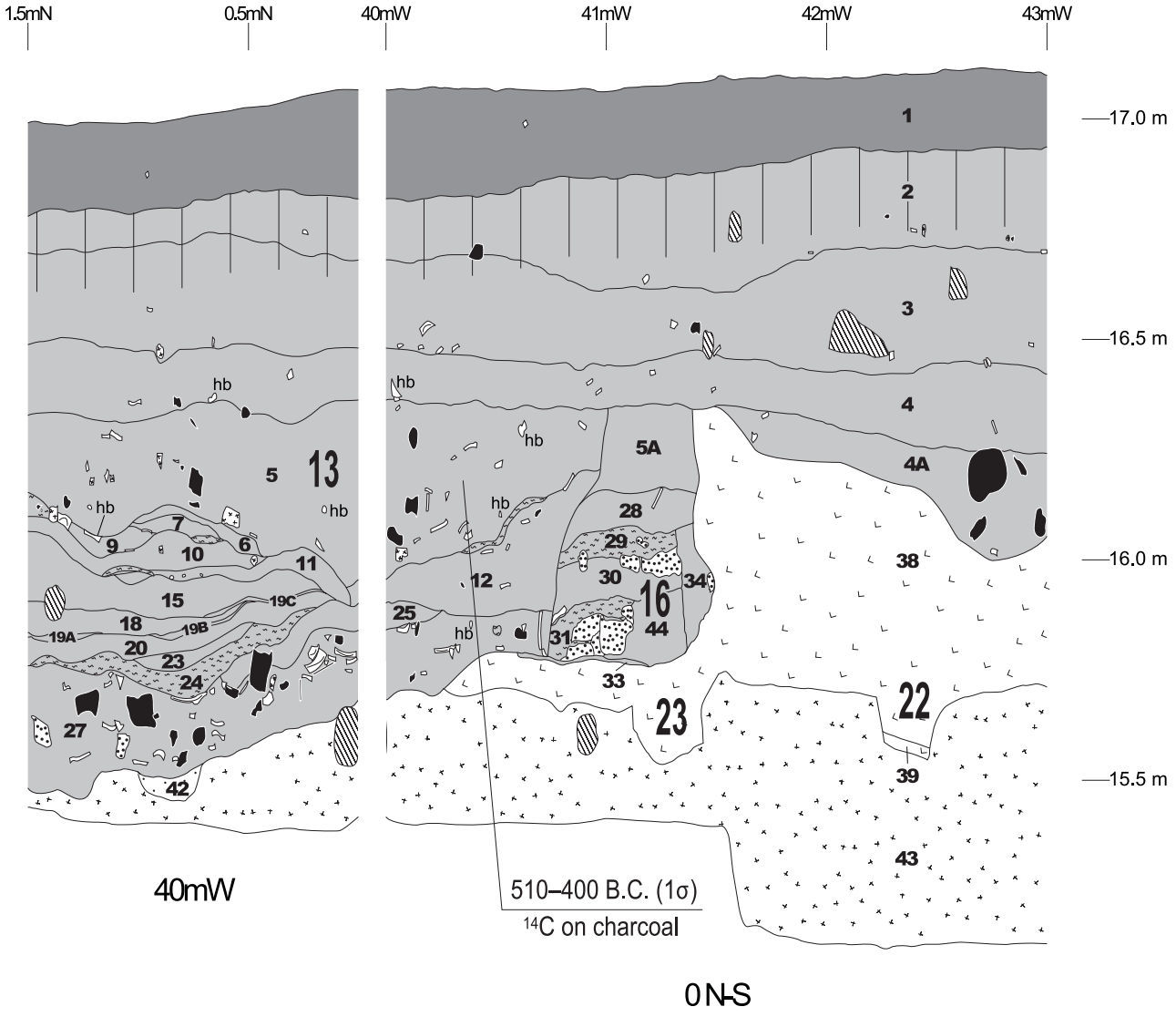

Figure 7.39. Sections delimiting Unit B-1.

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typologically belong to the first occupation. Area B is thus one of the few spots at La Laguna where we can hope to learn something about how houses and other structures were built, used, and demolished in the time span of 600 to 400 B.C.

Feature B7. This feature is a retaining wall that probably dates to the first occupation of the site. It may have been part of the architectural layout of Mound 10M-1. The course of the wall deviates some 15 degrees from the north–south axis of the grid we laid out. This is equal to a north-northeast/south-southwest direction in astronomical terms. The segment of Wall B7 that traversed our excavation unit was obviously very short, but since its topmost courses crop out at the edge of a metepantle ditch, it can be followed some 25 m to the south-southwest, up to a point where the ditch swerves toward the valley axis. The wall may follow the same straight line farther on but has no clear surface expression beyond that point. Several other features in Unit B-4 are similarly oriented. This is the case with Feature B33, Feature B31, the downslope edge of Feature B25, Feature B26, and the skeleton deposited in Feature B36. In this area of gentle slope, this orientation is by no means imposed by the topography. This suggests that these features, though not necessarily contemporaneous, were laid out with respect to one another and that most belong to a single uninterrupted occupation. It remains to be seen whether Mound 10M-1 is aligned on the same grid, but its contours have been rounded off and its masonry concealed by erosion. If that were the case, this mound would be the first to belong to the first occupation of the site, in contrast to the public architecture near the site center.

The inner wall, Feature B7D, was revealed by excavation to have originally stood at least 1.25 m high. Stones heaped up in the metepantle berm, however, could have been picked up after they had toppled into the ditch or robbed directly from the upper courses of Wall 7. The wall was dismantled between 1.5mS and 0.5mS so we could observe its fabric. Separate excavation lots were reserved for the artifacts recovered in this operation. The face of the inner wall was made up of relatively small stones, carefully chosen according to size and shape and fitted together so that practically no interstices were left between them, even though none had been cut to shape. The wall was reinforced by tepetate blocks and smaller stones wedged in between the facing stones and the fill. In contrast to the neat masonry of the inner wall, the outer one, Feature B7A, is made up of very large stones, 20 to 40 cm long, which seem to have been stacked on top of one another rather hastily, perhaps to avert an imminent failure of the inner wall under the weight of the fill. Large interstices were left between one stone and the next and must have been filled with earth during construction.

The fill behind Wall 7D is sandy, rather pale in color, very friable, and almost structureless. It contains a medley of sherds, bones, tepetate blocks, charcoal fragments, and other inclusions. Its thickness and lack of internal stratification made us subdivide it into a number of arbitrary near horizontal excavation lots (Figure 7.34). Given the considerable amount of refuse in these lots, the fill may have been quarried in some abandoned domestic area of the settlement. The large size and good preservation of the sherds suggest that they were brought in directly from a deposit of secondary refuse.

Wall 7D and the fill accumulated behind it are clearly not an agricultural terrace. The height of the wall and the care and amount of earthmoving that went into the construction are completely out of proportion to the gentle inclination of the slope. Also, there is no cultivation surface—no A horizon enriched in organic matter—associated with the top of the fill. The flat surface created behind the wall may have sustained structures that are not preserved, or may have been kept bare of vegetation by the transit of people, so that no soil ever developed. Wall 7D is probably to be viewed as part of the architectural layout of Mound 10M-1. We suspect it was meant to retain a large platform abutting the elevated core of whatever structure the mound conceals.

Feature B33. The fragmentary wall and floor buried under the platform fill, collectively designated Feature B33, are more modest in scale (figures 7.37, 7.42–7.44). They bring to mind the archetypical "early Mesoamerican house" (Flannery 1976b; Flannery and Marcus 2005) and hint at plain domestic use of the area prior to mound construction. The exposed wall segment crosses the whole width of Unit B-4 in a straight line. The indoors would have been on its western, downslope side, where only a strip 30 cm wide remains of the floors and the deposits underlying them. The wall was made of unfaced field stones. The upper courses had collapsed to the other side—that is, outdoors—forming a scatter of rubble. The lowermost two courses, however, were still largely in situ. Three parallel rows of stone made up the foundation that rested on tepetate. The stones measured 15 to 20 cm in their longest axis. The second course was made up of an exterior line of similarly sized stones, some of them dislodged and fallen to the outside, and a better-preserved interior line of smaller stones, some 10 cm in length. The interstices between stones were filled with a compact yellowish sediment. The color seems to be imparted by crushed tepetate fragments, but there are also some faint impressions of monocotyledonous leaves or stems, possibly remnants of a temper added to daub or mudbrick. This sediment was very different from the more friable and darker earth used to fill the interstices of the retaining wall 7D. We suppose that in this case, a purpose-made mortar was used to cement the stones. If the stones supported a wattle framework, the mortar might have helped anchor it in between the two lines of stone too.

Abutting the inside of the wall were two floor preparation layers, zones 24 and 21, made up of loamy sediment mixed with crushed tepetate. They are preserved in only a

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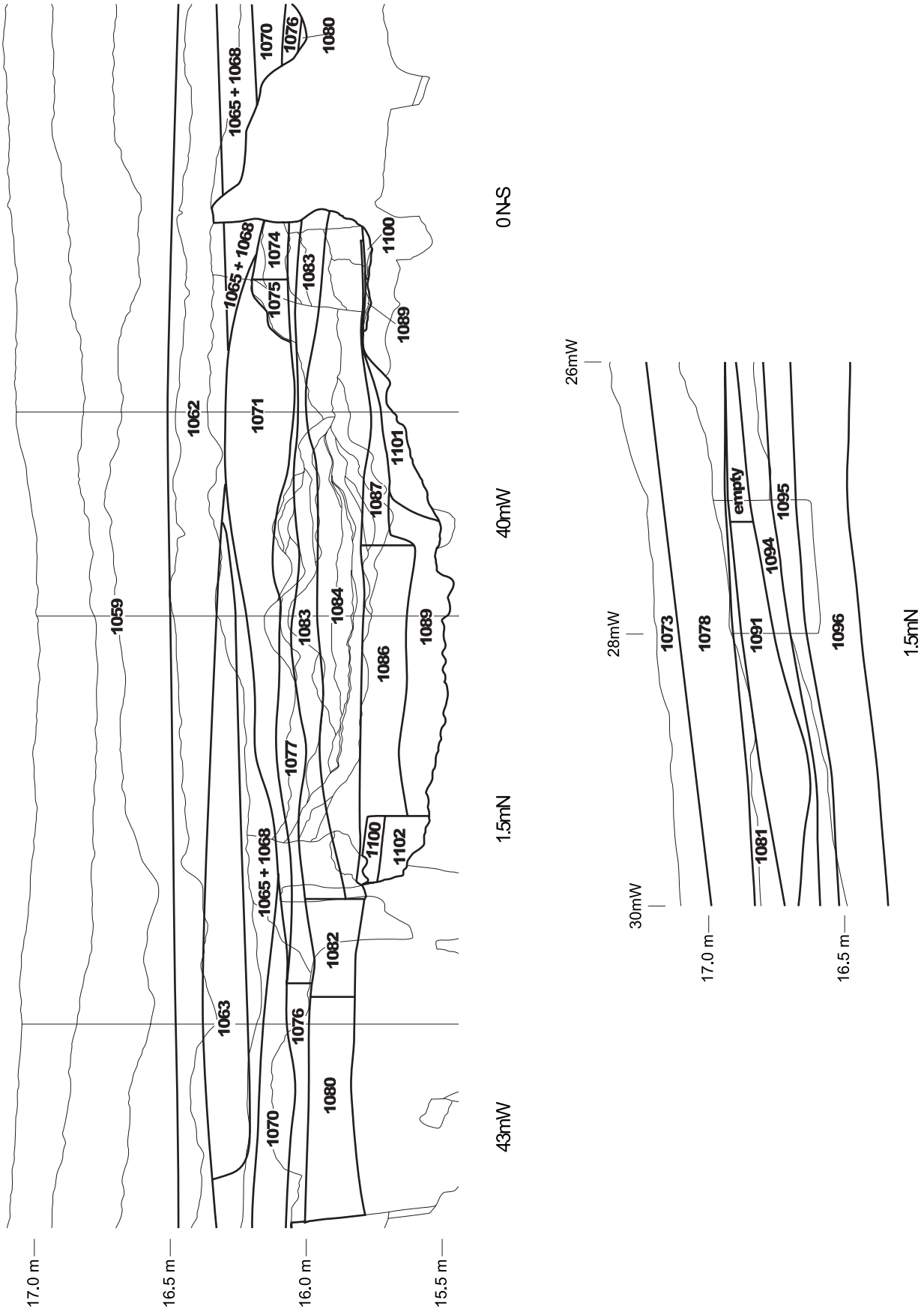

Figure 7.40. Excavation lots in units B-1 and B-2. Compare to figures 7.38 and 7.39.

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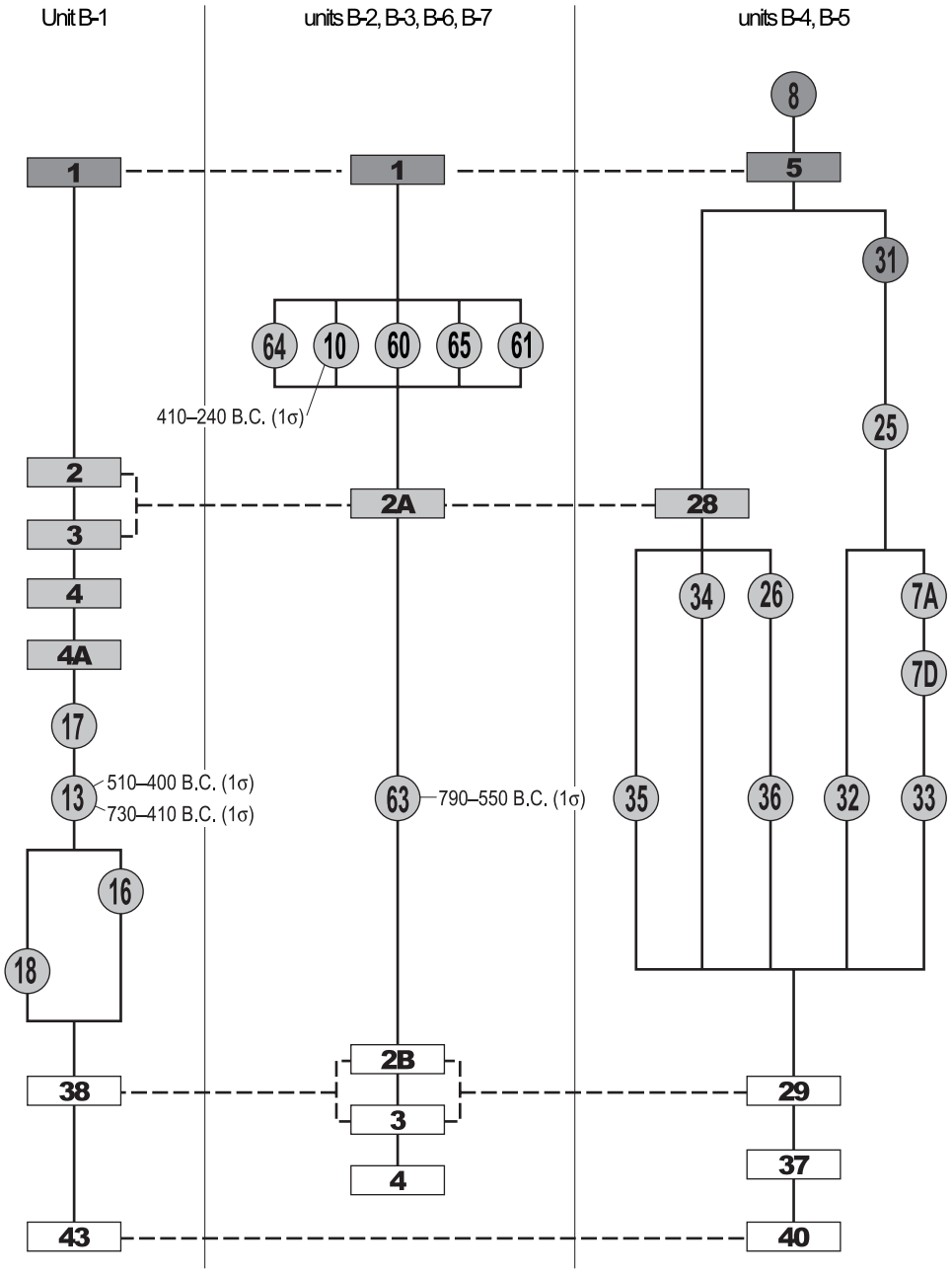

Figure 7.41. Harris matrix of the most widespread stratigraphic zones and most important features in Area B. Dashed lines mark correlations across noncontiguous units. The strength of the stratigraphic relations used to produce the matrix is to be judged from section drawings and the text. Note that the branch contained between Feature 31 and Zone 29 is not constrained to either the first or second Formative occupation by either stratigraphy or radiocarbon.

30-cm strip, which is all that remained after the rest of the house was cut away along a sharp vertical plane, probably at the time the platform fill behind Wall 7 was brought in. The upper preparation layer was distinguished by the presence of more and larger tepetate fragments. Both layers had some charcoal mixed in. Their purpose may have been to elevate the floor and isolate it from the upper contact of the almost impermeable tepetate, where water might have collected after seeping in from the sides. The floor layer preserved over the whole 30-cm-wide strip was labeled Zone 20. It was made of stamped earth and flaked away in laminae a few millimeters thick. Where it approached the wall, it curved up gradually, until it turned into an almost vertical layer lapping against the foundation stones.

Near the 1.5mS section were traces of the resurfacing of the floor (figures 7.37, 7.42–7.43). Zone 19 leans

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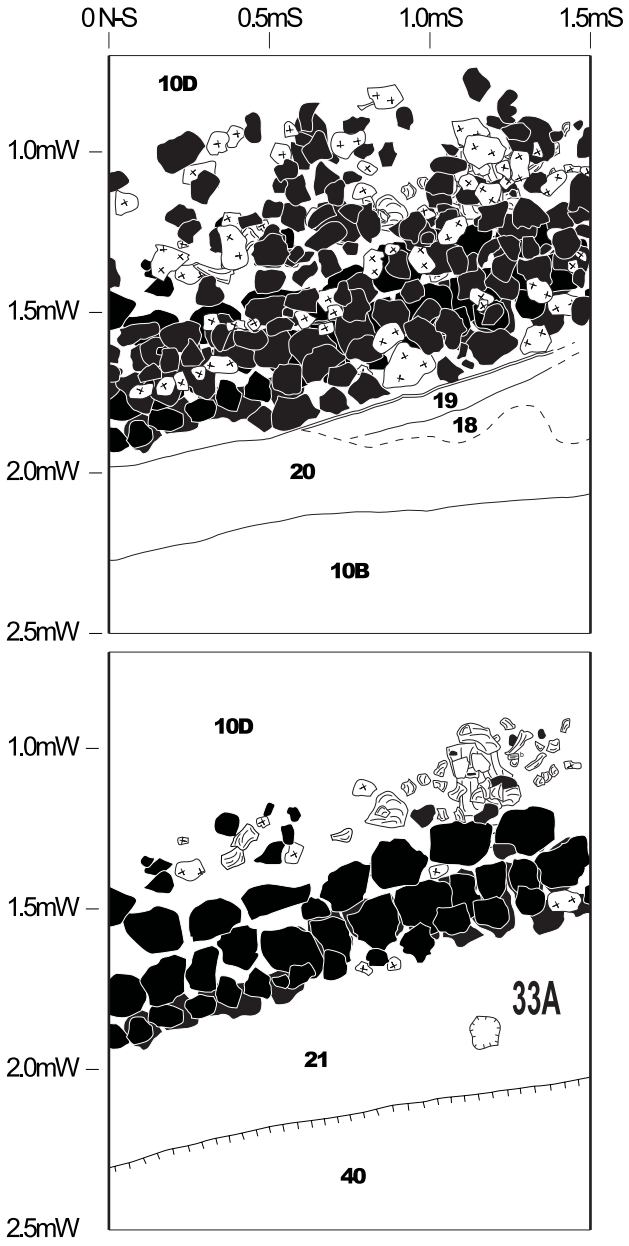

Figure 7.42. Feature B33 at two different stages of excavation.

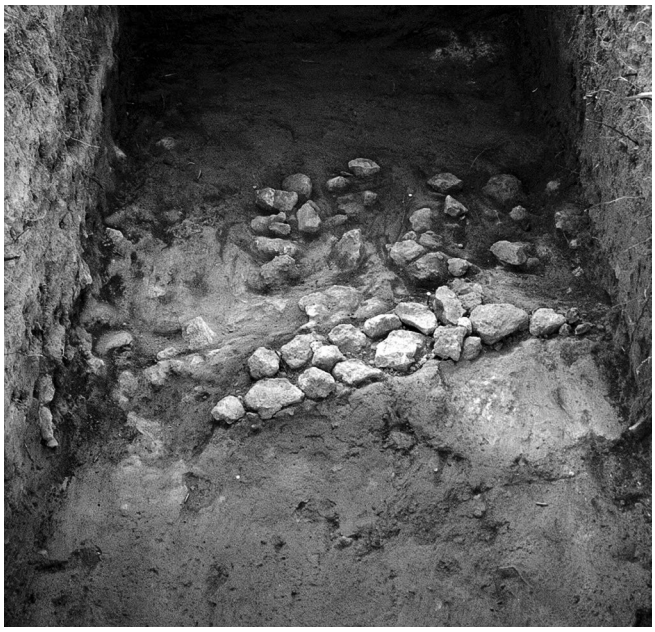

Figure 7.43. Feature B33; house foundations and floor of stamped earth.

Figure 7.44. Feature B33; lowermost course of stone foundations. The floor has been removed to reveal a layer of crushed tepetate (Zone 21) and the orifice of an infant burial (Feature B33A).

against the vertical part of Zone 20 near the wall. It dips and pinches away from it. It is covered by Zone 18. A small fleck on top it, Zone 19A, makes us guess that it was in turn covered by another layer similar to Zone 19. Zones 19 and 18 are both silty and distinguished by very peculiar colors, not observed in any natural deposits at the site. Zone 19 is a greenish gray, while Zone 18 is brick red. Both contain impressions of monocotyledonous leaves or stems. They are sharply delimited and uniform throughout their extent. Therefore we view them as intentional additions to the top of the floor and not discarded substances swept toward the wall. In the 1.5-m section they can be seen to be overlaid by three more laminae of sediment, zones 19C, 16, and 19D. Several of these layers may have originally extended much farther to the north, covering all of Zone 20. After we removed Zone 20, a tiny orifice in the underlying

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floor preparation layers appeared; it was filled with much looser sediment (Figure 7.44). It led to a neonatal human skeleton accompanied by a single obsidian blade, Feature B33A. The orifice, however, seemed too small for insertion of the corpse, and there was no trace of the floor having been broken. We conclude that the burial was deposited at the same time as the floor preparation and before the floor itself was laid.

The rubble that had collapsed to the outside of the wall had buried some large sherds, bones, and other artifacts (Figure 7.42). These are probably among the few deposits of primary or de facto refuse at La Laguna and are included in excavation Lot 1260 (Figure 7.34). Also on this side of the wall we noticed some grayish patches, a few centimeters thick, as well as a more substantial accumulation of ash in the corner of the excavation unit, Zone 13. Zones 13, 14, 25, and 22 contained broken vessels, bones, and ash. They dip markedly to the west, indicating that they had been dumped or washed down from beyond the extreme east of the excavation unit. It is not clear whether they are part of the refuse associated with the house or were dumped here after it had been abandoned.

Feature B32. Downslope of Wall 7, architecture comes mostly in the form of redeposited demolition debris. There is some circumstantial evidence, however, of a house once having stood here. In the 1.5mS section (Figure 7.33), we have noticed a shallow depression, some 5 m long, cut into the otherwise smooth upper boundary of Zone 29A; we think it corresponds to one of the Formative ground surfaces. If the depression was made on purpose, it could have been to accommodate the sunken floor of a house, though it is to be stressed that no layer of stamped earth was ever noted here. What hints at the presence of a house is debris found at the edge of the depression and filling it. Feature B32 is a heap of stones at the upslope edge of the depression. The stones do not form any obvious alignments but are in the same size category as those of Feature B33. Around Feature B32, on top of it, and above all in the matrix of Zone 26 that fills the depression, there was a very high density of burned daub, much of it with smoothed faces and clear wattle impressions. There is also a lot of charred wood, in fragments that reach various centimeters in diameter and could represent the wattle itself. If B32 and B33 were contemporaneous, the houses would have stood a very short distance from one another, perhaps as little as 4 m.

Feature B25. Zone 26 is in turn buried by Feature B25, an enormous accumulation of stone rubble (Figure 7.45). The stones are heaped up on top of one another. As with Feature B32, the stones are too big to have been transported here by any natural agency. They could not have toppled from Wall B7 even if we imagine it originally being double its height. There are too many of them, and they are too far from the wall. Feature B25 is at its thickest near 9mW and where it disappears into the 1.5mS section. It becomes much thinner to the west and to the north, where part of a circle almost free of rubble, about 1.5 m in diameter, was exposed and recorded as Feature B25A. The western edge of the feature is quite clearly defined and parallel to Wall B7. At the eastern edge it is somewhat difficult to separate the stones of Feature B25 from those of Feature B32. The stones of Feature B25 were apparently dumped as relatively clean rubble because between and under several of them we found localized laminae of sediment, as if sediment-laden water had been slowly percolating the interstices. The interstices do contain many artifacts and large charcoal fragments, however. The amount of debris suggests that it was the

Figure 7.45.
Rubble of Feature B25 in 1.5mS section.

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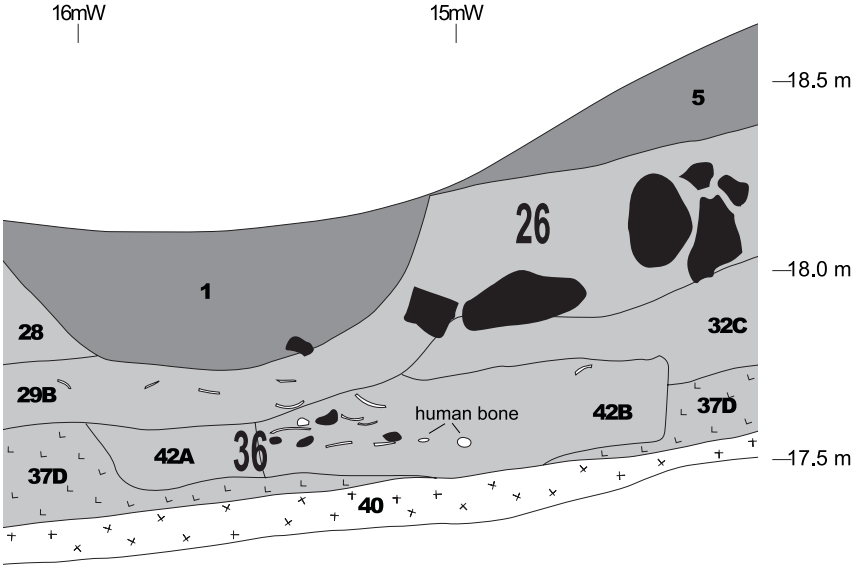

Figure 7.46.
0N-S section separating units B-4 and B-5.

product of the demolition of some major structure nearby, perhaps part of a public precinct around Mound 10M-1. Apart from demolition itself, it is difficult to guess the purpose of this operation, as the jagged rubble would not have offered a stable surface for new construction.

Mortuary Contexts

The number of burials excavated at La Laguna is still small, and any quantification of different types thereof is premature. However, the site as a whole, and Area B in particular, has provided us with a glimpse of the great variety of mortuary practices of the Formative. Human bone, much of it intentionally modified, was found in significant amounts in Unit B-1 (see below), but there it was discarded in a general-purpose midden that was not created or specially rearranged to receive human remains. Specifically mortuary contexts were identified in units B-4 and B-5, where they seem to belong to the first occupation, and, in greatest density, in units B-2, B-3, and B-6, where most seem to belong to the second. The latter may in fact define an area that had been set apart for the interment of the dead. Grave offerings, if any, are very scarce, so these contexts yielded very few artifacts. We signal their existence and general nature but leave detailed analysis for Volume 3.

Feature B36. The neonatal skeleton found under the floor of Feature B33 has already been mentioned. Another immature skeleton, this time of a child some seven years old, was discovered at the junction of units B-4 and B-5, in Feature B36 (figures 7.46–7.48). It was the removal of the skeleton that required the opening up of the small Unit B-5. It rested in a shallow pit dug into the Bt horizon (Zone 37D), probably from the surface of Zone 29 or an equivalent thereof, but its mouth was not easy to define. Along the western wall of the pit, the sediment (Zone 42A) was slightly less friable and poorer in artifacts than that in the vicinity of the skeleton (Zone 42B). If the pit had previously been used for a different purpose, Zone 42A may represent a remnant of its original fill, the rest of which would have been dug out to make room for the burial. The corpse had been laid out supine and extended but for the slightly flexed legs. The head and upper torso were propped up on a bed made of the almost flat body sherds of a large red-slipped olla. A mano for grinding maize was placed over the right forearm. Other noteworthy items almost certainly meant to accompany the child were a ceramic cylinder and lumps of an unidentified red substance. The lots used for the excavation of Feature B36 (1230, 1232, 1233, and 1266–1273)—as well as lots 1220 and 1226, excavated just before we realized its existence (Figure 7.34)—produced many sherds, including a few partially reconstructible vessels. We cannot be entirely certain, however, if these were part of the offerings, or refuse discarded in the pit before the burial, or objects from the ill-defined layers near its mouth.

Feature B35. At the downslope extreme of Unit B-4, at the contact of the Bt and older A horizons (zones 37D and 29B, respectively), we uncovered several large sherds, some of them from the same vessel; a metate fragment; a few large stones; and several human bones (Figure 7.31). They were dispersed over roughly 1 m^2, but the human bone formed two nonrandom concentrations, one with fragments of long bones, the other with those of a cranium. This set of finds was called Feature B35. It may represent the very deteriorated remains of a burial, but no pit outline was observed, neither in plan nor in the 1.5mS section, next to which some of the bone had appeared.

Features 10, 64, and 65. Several more badly damaged burials were identified in the central block of excavation units, about 10 m away from Feature B35, but this time apparently associated with the upper A horizon, here designated as Zone 2A (Figure 7.32). The general pattern, if

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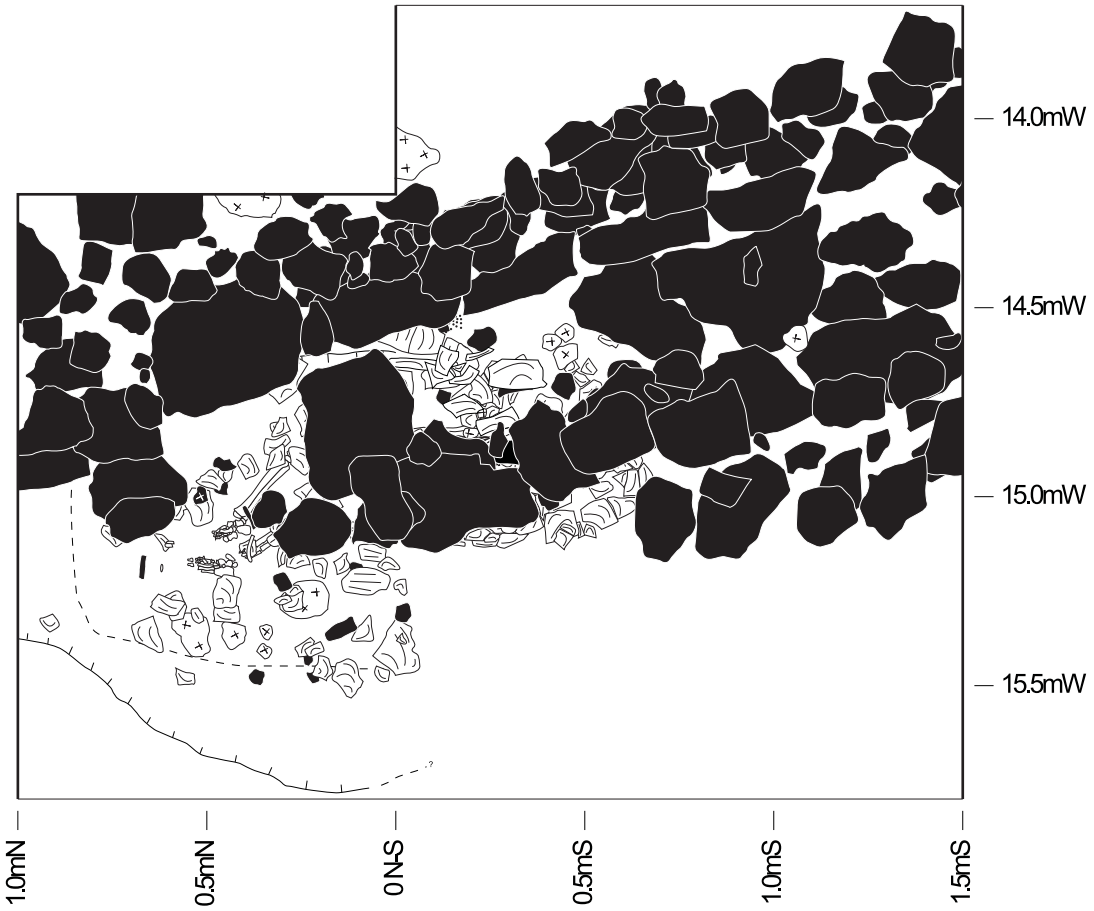

Figure 7.47. Superimposed plans of features B26 and B36.

any can be discerned with so few burials, seems to be of marking the spot with large stones placed to one side of the skeletal remains. Features B64 and B65 were no more than concentrations of heavily fragmented bone, each marked with a few stones. The bone bore gnaw marks. The features did not contain artifacts except for a few small sherds that did not seem to have been intentionally deposited. Feature B14 seemed to be part of a small single-course ring of stones. Splinters of human bone projected from below it, but given its location in the very corner of Unit B-2, we left this feature for future exploration and never lifted the stones. Feature B10 contained a jar placed next to a badly damaged cranium and an incomplete set of leg bones belonging to an adult. These were less fragmented than in features B64 and B65 but were still poorly preserved.

Feature B60. This was the most "formal" of all mortuary contexts in these units, but strangely it did not contain any human bone (Figure 7.49). The feature consisted of an L-shaped enclosure of placed stones. Most noteworthy was a large slab forming the short arm of the L and an almost complete metate forming part of the long arm. Both had been stuck vertically in the earth. None of the stones could have stood upright for any length of time had they not been swiftly buried. On the inside of the L stood two sets of complete vessels. One was a pair of large bowls—one of them turned upside down and fitted tightly within the other. They were similar in size, shape, and slip to the pair of vessels found in Feature B49 of Area F (see above). Chance finds of other such pairs are recalled by former laborers of the hacienda. The other set in Feature B60 consisted of a large bowl covered by two smaller vessels. Both sets contained only very organic-rich earth. Our classification of Feature B60 as mortuary rests on the similarity of the vessel sets to those found in burials elsewhere, as well as the arrangement of the stone itself. We imagine that it was originally a cist (see references under Feature B57 in Area F), with stones lining the walls of a dug-out rectangular depression. The bone and jar of Feature B10 may have been dragged out at some point from Feature B60 by dogs, coyotes, or tillage. The missing half of the putative cist could have been destroyed at that moment.

Feature B63. This was the only burial for which we had no trouble delimiting a pit. It is the only feature probably dug from the older Formative ground surface. Even so, stones were heaped up at the edge of the pit, just as with

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features we have postulated to belong to the second occupation. The pit contained a heavily flexed adult skeleton with no offerings.

The Midden

The intersecting pits discovered in and around Unit B-1 have produced the single largest sample of secondary refuse from La Laguna. They originate from the older Formative ground surface, buried now at a depth of about 70 cm. They extend to a depth of 1.5 m below the modern ground surface. None of the refuse—sherds, obsidian debitage, human and animal bone, ash, and so on—would be out of place in a domestic setting. However, the refuse is so concentrated, and the volume of the pits (as uncovered in 2010) so great, that we doubt the midden was ever attached to any particular household. Instead, we imagine the refuse from several households being brought to this spot. Perhaps the bottom of the valley between Cerros La Gazca and Las Ardillas was considered too wet for human habitation. Perhaps there was some natural ravine here that encouraged the dumping of trash. In any case, we are certain that the refuse was carried down here not too long after it was first discarded, and was not moved with large volumes of earthen fill as seemed the case with Feature B7. We base this inference on the almost pristine conditions in which many artifacts are preserved and on the consistent presence of meaningful clusters of refuse within the midden—for example, sherds from the same vessel or bones of the same animal.

Features B16 and B17. Within the confines of Unit B-1 were three pits that contained refuse, but only Feature B13 was a major contributor to the midden in terms of the volume of both fill and refuse (Figure 7.39). It had cut into and removed most of Pit B16, next to the 0N-S section. It was cut in turn by Pit B17, but this hardly reached into the unit, most of it being beyond its 1.5mN section. The contents of Pit B16 point to activities that consistently involved the use of fire. They may represent the cleaning of hearths or the dumping of ash in which maize kernels were soaked. The thin layer along its floor, Zone 33, has an orange color that is likely the effect of exposure to heat. Among the layers that overlie it, several are dominated by weakly cemented

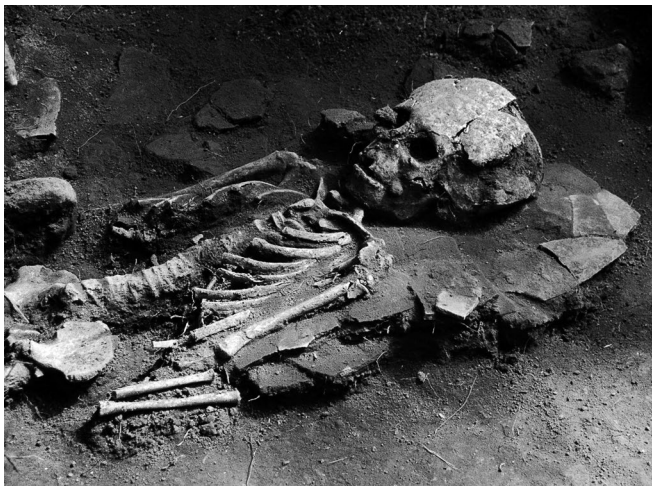

Figure 7.48. Feature B36 in Unit B-4.

nodules or peds of a dark brown color. Despite their rather coarse texture of sandy loam, they do not fail easily when immersed in water, though they can be rubbed between the fingers into smaller gritty lumps. Zone 32 is almost exclusively made up of such nodules, while in others the nodules are suspended in a matrix of pale gray ash (zones 31 and 29) or light brown earth (zones 30 and 28). The density of artifacts in Pit B16 is rather modest, especially in comparison with Pit B13. The stratigraphy of Pit B17, as exposed in the 1.5mN section, is much simpler. In one of its corners we found Zone 26, a deposit made up of gray ash and an unidentified substance that had been tinged orange, probably by exposure to heat. The rest of its fill, Zone 35, is yellowish, sandy, and very friable. It contains quite a few bones. In both respects it is similar to the last fill of Feature B13, Zone 5. The density of artifacts in Pit B17 is intermediate between that of pits B16 and B13.

Feature B13. The complex internal stratigraphy of Feature B13 is a testimony to its use for discarding different kinds of refuse, as well as to changes in the frequency of discard. The deepest exposed part of the feature is at the intersection of the 40mW and 1.5mN planes. It may reach deeper farther to the east. At its bottom rests Zone 27, circa 25 cm thick. It is full of sherds, lithics, charcoal, and ash. Near the deepest part of the pit the density of artifacts is

Figure 7.49. Feature B60 in Unit B-6. The part contained in Unit B-3 has been removed.

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such that the sherds often rest on top of one another, without much intervening matrix. We suspect that some kind of organic refuse was discarded in this zone too, as many lumps of earth display impressions of leaves or stems. The artifacts or particles of different sizes are not sorted in any way by gravity, which suggests that they were tossed directly into an open pit from different directions. The same zone contains many of the dark brown peds or nodules described for Feature B16. Here they are quite similar to the sediment in which they are embedded, which is also a dark brown sandy loam. The weak cementation we mentioned here affects not only the peds but also the charcoal and ash present and makes these and the sediment adhere strongly to the surface of many artifacts. This suggests some postdepositional process of cementation, possibly by carbonates mobilized from calcite-rich ash layers.

The more localized zones 25 and 24, deposited after Zone 27, bear evidence of burning in the form of ash, charcoal, and the orange tinge of Zone 25. After their deposition, a hiatus in the use of the pit as a midden seems to have intervened. In contrast to Zone 27, zones 23, 22, 20, 19, 18, 16, 15, 14, 13, 11, 10, 9, 8, 7, and 6, despite being made up of the most varied substances, all convey the impression of having been deposited or at least reworked by water. They are often reduced to localized sediment lenses with wavy boundaries, each made up of fairly well-sorted particles. Some even preserve traces of internal lamination. They contain fewer artifacts but continue to be rich in ash and charcoal, whose finer particles may have been easier to entrain from refuse previously dumped in the pit. The geometry of several layers suggests that water was washing them in from some point to the northeast of Unit B-1. This was the direction from which the pit was being flooded by surface runoff, or in that direction the refuse had originally been piled higher and was now being spread out. The cementation described for Zone 27 is also present in some of the zones of this set.

Zone 12 may have been deposited immediately after Zone 27 or simultaneously with the set described in the previous paragraph. Variegated and rich in artifacts, charcoal, and ash, it also contains plant impressions and unidentified substances. It seems to represent direct discard, from the western or southwestern edge of the pit, to judge by the way it pinches out. The topmost layer in Pit B13, Zone 5, is similar to Zone 27 in that it is of rather uniform thickness and fills all the space available from wall to wall. The sedimentary matrix, however, is very different, being yellowish, sandy, and friable. It is rich in artifacts and human bone, much of it bearing cut marks and traces of exposure to heat.

The contents of Pit B13 can thus be subdivided, for analytical purposes, in three: those predating the hiatus, those that mark it, and those that postdate it. For most artifact analyses, the first and second are grouped together (as context B13-2S; see Chapter 8). The two charcoal samples we submitted for dating came from the first and last. Though the results are in correct stratigraphic order, the calibrated ages are virtually indistinguishable within the limits of radiocarbon dating. The ceramics from the lower and upper parts of the pit are also typologically indistinguishable. It thus seems likely that the hiatus was a matter of decades at the most. It is not to be confused with the centuries-long hiatus that separates the two occupations of the site.

Other Features

Feature B61. The only bell-shaped pit excavated in Area B, Feature B61, was located in the northeast corner of Unit B-6 (figures 7.50 and 7.51). It seems to have been filled rapidly with earth and rubble, though perhaps not at once, as discrete depositional events are evident in its stratigraphy. It contains relatively few artifacts, most of which should probably be classified as tertiary refuse, brought in inadvertently with the earth. The floor of the pit is not flat but dips toward the center. The heap-like geometry of Zone 21, resting right on top it, is typical of bell-shaped pits that were filled by emptying a load of sediment or trash through the restricted orifice. The zone is made up of firm angular peds with dark clay coatings and must represent redeposited soil, perhaps dug up from the very A horizon near the mouth of the pit. Embedded in this zone was a very large but thin stone slab and several other large stones. The slab may have been used as a lid to cover the mouth of the pit. More friable earth—zones 20 to 13—then filled the space left between the central heap and the walls of the pit. Most of these zones contain some ash, and many display subhorizontal laminations. Zone 20 seems part of the same deposit as Zone 18 and probably wraps around Zone 21. The same can be said of zones 14 and 13. Zones 17, 16, and 15 are also very similar to one another, particularly in that they contain alternating laminae of sand and silt. All these zones probably fell onto the highest point of Zone 21 and slid or were washed down from there radially toward the walls, allowing for some limited sorting of their constituent particles.

When they reached the same height as Zone 21, the whole process was repeated on a smaller scale. Zones 12 through 10 and 9 through 6 each represent a heap, perhaps a basket-load, of earth dumped into the pit. Their separation into convex zones of slightly different composition is probably the result of loading a basket with earth dug up in sequence from a variable source, such as a preexisting heap of hearth cleanout or mud and organic refuse that had accumulated against the wall of a house. Zones 12 and 11 contain small reddish lumps that may be the result of exposure of earth to fire, while Zone 10 has some grayish lumps of what seems to be very lightly burned daub. Tepetate blocks and lumps of clay-coated sandy loam rest near the bottom of the other heap, in Zone 8. Zones 9, 7, and 6 are made up of small multicolored lumps of tepetate and other substances. The ashy and bedded Zone 4 then

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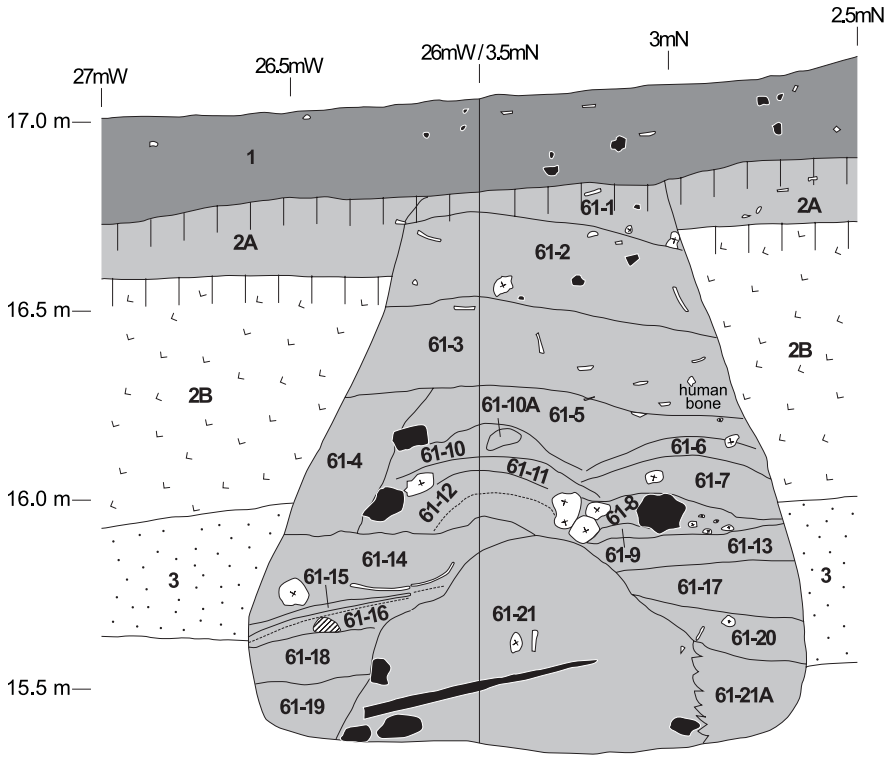

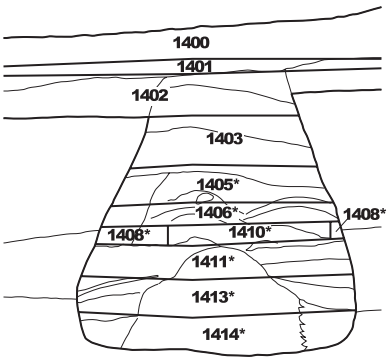

Figure 7.50. Unit B-6; 3.5mN and 26mW sections through bell-shaped Pit B61; lots excavated.

filled the space left between the two heaps and the pit wall. Zones 3 through 1 display a less marked convexity. They were all originally made up of friable sandy loam of a yellowish brown color, but the illuviation of clay and organic matter has darkened zones 2 and 1 and changed their texture to sandy clay loam.

Pit B61 was first excavated within the confines of Unit B-6. This removed a slice of it that accounted for more than half the volume of fill. To expose the whole mouth of the pit and excavate the rest of its volume, we opened up the tiny Unit B-7. However, it quickly turned out that in this direction, Pit B61 was intersected by two other subsurface features, numbers 90 and 91, which were full of large unabraded sherds typical of secondary refuse. Since it would have been impractical to try to define stratigraphic relationships in such a small unit, we suspended work at that stage.

Feature B26. The remaining features are more difficult to interpret. Feature B26 was exposed in units B-4 and B-5 (figures 7.46, 7.47, and 7.52). It was right above Feature B36, and its central axis was aligned with that of the skeleton of Feature B36. We think the two are not related, however, as they are vertically separated from one another by Zone 32C. Also, Feature B26 is linear, whereas Feature B36 is an ovoid pit. If not a mere coincidence, the alignment may simply be the result of preexisting axes that most features in this area tended to respect (see above). Feature B26 is made up of two parallel alignments of stones. The western one was truncated, in Unit B-5, when a metepantle ditch (see Zone 1, figures 7.33 and 7.46) was dug here in recent times, at an angle of about 15 degrees to Feature B26. Despite this damage and a lot of obvious rubble collapse, the parallel rows of stone of Feature B26 are clearly visible. Many though not all of the stones are flattish slabs. They were set into the earth at an angle, leaning outward, forming a trough with a trapezoidal cross section. The feature has the appearance of a stone-lined canal, but its bottom was lined by neither stone nor clay, so it would not have been very appropriate for carrying water. Moreover, there was little difference between the earth on the outside and the inside of the trough, and certainly no laminations indicative of running water. Neither was it an effective barrier against the downslope movement of soil, as the top of the feature could never have protruded much above the ground surface. We could perhaps conceive of it as a very rudimentary drain placed between two structures or activity areas that are no longer recognizable, and one that was filled in on purpose at some stage rather than being allowed to silt up. As Feature B26 seems to be buried by Zone 28, we would place it in the first occupation.

Feature B34. A little farther downslope, on the other side of the metepantle ditch, we uncovered an accumulation of stones, Feature B34 (Figure 7.31). They are too large to have been transported by natural processes. Some exceed 40 cm in length. However, in contrast to Feature B25 and other accumulations of architectural rubble, the stones do not support one another but are embedded in

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Figure 7.51. Feature B61 in northeastern corner of Unit B-6; a rare instance of a fully preserved bell-shaped pit.

the matrix of the older A horizon Zone 29B. Feature B26, perhaps in a reach to the south of Unit B-4, is one possible source of the stone.

Features B19-24, *B37*, *B38*. Finally we should mention a series of trapezoidal notches in the tepetate of units B-4 and B-1, noticed during the drawing of their sections. Their greatest density is in Unit B-1, where they were numbered features B19 through B24 (Figure 7.39). In Unit B-4 there are two, features B37 and B38 (Figure 7.33). We were not able to observe them in three dimensions. Feature B20 was the only one with a shape suggestive of a large posthole, but this interpretation was dismissed by the 2010 excavations. Most notches are filled with sediment similar to that of the immediately overlying zone. They contain neither artifacts nor charcoal. They may simply be part of the erosional unconformity along the upper boundary of the tepetate. Their more or less regular shape could be the result of the breaking away of angular or prismatic peds of the tepetate itself.

SUMMARY OF EVIDENCE

It is difficult to establish how far from the site center the Formative settlements at La Laguna actually extended. Large-scale sediment transfers during and after the Formative have removed archaeological deposits from some parts of the three hills and have buried in situ deposits in others. Intensive surface collections focused on patches with high artifact visibility, such as recent metepantle berms, tepetate outcrops, or worn cattle tracks, may give us a better approximation of the total extent of Formative occupation. To distinguish between the 600 to 400 B.C. and 50 B.C. to A.D. 150 occupations, however, one would probably need a program of systematic test pitting supported by radiocarbon, as ceramic styles seem to become extremely conservative after 500 B.C. and even sherds from excavated contexts are not easy to assign to one occupation or the other. Based on what little we have excavated so far, we can affirm that houses of the first oc-

Figure 7.52. Feature B26 in Unit B-4.

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cupation extended high up the slopes of both Cerro Las Palmas and Cerro La Gazca and were present at least at the foot of Cerro Las Ardillas. In many places, however, all that remains of the first occupation are the deeper parts of bell-shaped pits. The second occupation reached as high up Las Palmas as the first. If the large-scale and presumably public architecture in Area B is assigned to the first occupation, the second occupation of this area is reduced almost exclusively to activities related to mortuary ritual. So far we have no direct evidence that the second occupation extended high up Cerro La Gazca. The erosion on its slopes during and after the first occupation was particularly severe, and it may have become impossible to farm and unattractive even to build houses on. The nature of human activities beyond the three hills in question can only be speculated about on the basis of site catchment analyses of the artifacts and ecofacts uncovered. Geoarchaeological work to the east of the site (Borejsza 2006:271–298) indicates that the stream network was not heavily incised at the time of the Formative occupations of La Laguna; the stream floodplains may have offered more opportunities for cultivation than exist today. Formative surfaces near the streams, however, are buried at depths beyond the reach of the plow, so little surface evidence of Formative activity is to be expected.

Different aspects of Formative lifeways can be gleaned in different places away from the site center. The plans of houses of the first occupation and artifact assemblages directly associated with them can be recovered only in Area B, and even there this will require the removal of at least .5 m of later overburden. Houses and house platforms of the second occupation are preserved in isolated slope-perpendicular belts in Area F, generally those that today display a moderate gradient. A small cluster of public architecture may be present in Area B, and the finds from the platform in front of Mound 10M-1 raise the intriguing possibility that, in contrast to the site center, it may belong to the first occupation. The domestic architecture seems to have relied heavily on the use of wattle and daub in the walls and of mixtures of mud and crushed tepetate in floors and mortars. During the second occupation, some houses were raised on platforms similar to those of Tetimpa (Plunket and Uruñuela 1998). There is so far no direct evidence of the use of mudbrick. Bell-shaped pits were dug with great frequency around the houses during the first occupation. By the time of the second occupation they had become uncommon. The excavators of Tetimpa suggest that in the Terminal Formative, main storage facilities were moved from bell-shaped pits to above-surface bins known as *cuexcomates* (Uruñuela and Plunket 2013), but we have so far no evidence of the latter at La Laguna.

Mortuary behavior can be documented by a great variety of finds in both Area B and Area F. During the first occupation it involved, among other things, the direct burial of tightly flexed, possibly bundled adult corpses, complex sequences of corpse disposal and bone removal in bell-shaped pits, and behavior that involved either cannibalism or dismemberment and defleshing of corpses for reasons unrelated to the consumption of human flesh. The burial of pairs of large vessels, to contain either the remains of infants or offerings, seems to be one of the mortuary rituals characteristic of the second occupation.

Agriculture must have been practiced on the slopes of all three hills during the Formative and is responsible for the two pulses of accelerated soil erosion documented at the site, each associated with one of its occupations. We have failed to uncover any hint of Formative agricultural terracing. Absence of evidence is not evidence of absence, but after having inspected more than 150 m of trenches parallel to slope at La Laguna and having explored the issue at other sites in Tlaxcala, the most parsimonious interpretation we can offer is that Formative farmers did not terrace their sloping fields at La Laguna. The retaining walls of Formative age at the site are probably of small house platforms, on which there would have not been enough space for crops, and any attempts to reduce the slope gradient were likely aimed at making room for construction rather than creating level surfaces to be planted.

Artifact assemblages of the two Formative occupations are difficult to compare because of the different nature of the contexts preserved and excavated for each. Our best and most numerous samples of refuse come either from pits of the first occupation or from architectural fill that, even if of the second occupation, contains mostly redeposited artifacts of the first. The second occupation may have been significantly shorter than the first so that comparatively little refuse was generated. There may also have been changes in the management of waste streams between one occupation and the other that make the discovery of good secondary refuse of the second occupation difficult.

Even by the first occupation, La Laguna had become a settlement much larger than the villages of Amomoloc, Tetel, or Mesitas. Waste streams become longer as settlements grow in size and population density (Schiffer 1987), and we have direct evidence thereof at La Laguna at 600 to 400 B.C. The same bell-shaped pits that at the other three sites tend to be full of secondary refuse at La Laguna contain tertiary refuse at best and almost artifact-free fill at worst. Instead of going directly from household to adjacent feature, the refuse was carried away farther and concentrated in features such as the Area B midden or Feature B55 in Area F. Direct associations between a refuse pit and a particular household will be nearly impossible to establish, and any comparisons of artifact or ecofact assemblages with those of Amomoloc, Tetel, or Mesitas will have to take account of this fact.

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[1] Radiocarbon dates in this chapter are referred to by their complete range after calibration at 1σ using CALIB 6.1.1 (Stuiver and Reimer 1993). For full details of samples and calibrations see chapter 12.

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CHAPTER 8

Contexts

Richard G. Lesure, Aleksander Borejsza, Jennifer Carballo,
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THIS CHAPTER IS A compendium of the culturally significant contexts recovered in the excavations described in chapters 2 through 7. Also included here are 13 contexts that were excavated by David Carballo in 2005–2006 and that have been incorporated into the analyses of chapters 9, 10, and 11. The present chapter is intended for use as a reference guide for analysts or readers researching project materials. Although exposition is kept to a minimum, there is discussion of three alternative samples of materials for diachronic analysis. Those samples will be referred to as the Chronological Sample, the Expanded Refuse Sample, and the Maximal Refuse Sample; they are discussed following the listing of primary contexts, burials, and refuse contexts.

Context is defined here as any analytically interesting cultural unit. The distinction between the terms *feature* and *context* is discussed in Chapter 1, but to reiterate briefly, the idea is that a single feature may include multiple entities of analytical interest. For instance, a bell-shaped pit is of interest for its original function as a storage facility. In some cases, there also appear to be abandonment assemblages of large rocks on the floors of pits; these may relate to their original storage function. Most pit contents, however, relate to reuse of the pit for purposes other than storage. Usually these pits were used as dumping locations for secondary refuse or architectural debris. Sometimes they served as locations for burials. In a few cases, bell-shaped pits stood open to the elements, to become traps for small animals.

The basic nomenclature for labeling contexts is: (feature series A, B, or C) (feature number)-(unique number within that feature) (letter designating whether the context is primary [P], secondary [S], or burial [B]). Thus A54-1P is the primary context of Feature A54 at Amomoloc, a bell-shaped storage pit, while A54-2S is a secondary context consisting of the refuse with which the pit was filled. In the presentation of refuse contexts, an alternative nomenclature is introduced for sheet middens on buried ground surfaces—the standard notation cannot be used in those cases because no feature numbers were assigned to those contexts. As noted in Chapter 1, in assessing the analytical potential of refuse contexts, we have considered the degree to which they approach the ideal of secondary as opposed to tertiary refuse (e.g. Rosenswig 2009:16). The state of mixing of a particular deposit can be difficult to assess. We therefore treat the secondary/tertiary distinction as a matter of degree. In the case of secondary refuse, sherds are large, refits are common, and there are usually a few large vessel fragments or even completely reconstructable vessels (virtually always accompanied by sweeping debris of small sherds). In tertiary refuse, sherds are small, refits are rare, and there are no large fragments of vessels.

Primary contexts are analytically interesting entities discovered in their original locations of use or creation. Burials are separated here from other primary contexts. The term *burial* is applied very broadly in this chapter since the goal at this point is simply to catalog relevant deposits: it covers primary inhumations, secondary burials, and any other deposit of human bone that appears of interest for understanding the complex local mortuary program of the first millennium B.C. Some "burials" listed here are concentrations of human bone, disarticulated to different degrees and deposited among refuse unrelated to mortuary behavior. However, some associated objects appear to be redeposited or disturbed burial offerings. In such complex cases, we often define two or more contexts within the same feature.

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Phases are assigned to contexts wherever possible. For units of the Chronological Sample and the Expanded Refuse Sample (discussed at the end of the chapter), those assignments are quite secure. For other contexts, these assignments represent our best judgment given available evidence. For La Laguna, units are sometimes identified merely as "first occupation" or "second occupation" in cases where evidence is insufficient to allow assignment to a specific phase.

For detailed discussion of the contexts listed here, the reader should consult chapters 2, 3, 4, 6, and 7. (Contexts from David Carballo's excavations included here but not described further in this volume are Lag-I1, Lag-H1, Lag-H2, and those beginning with a *C*.)

PRIMARY CONTEXTS

Loss of the Formative ground surface to erosion throughout the smaller sites and in parts of La Laguna means that we have relatively few primary contexts to report. Architectural elements are rare except at La Laguna. The great variety of open-profile pits has not seemed worth designating as contexts due to considerable uncertainty as to their function; they will not be subject to analysis *as pits* beyond consideration in chapters 1 through 7.

Architectural Elements and Miscellaneous Features

A2-1P. Tetel. Tlatempa. Small residential platform? See figures 3.4 and 3.6.

A3-1P. Tetel. Tlatempa or Texoloc. Small residential platform? See Figure 3.12.

A99-1P. La Laguna. Second occupation. Wall. Small portion of the lower platform of Structure 14M-1 excavated in 2004; this structure was investigated more extensively by David Carballo in 2006. See figures 6.7 through 6.9.

A106-1P. La Laguna. Second occupation. Floor with in situ burning. Abuts A99-1P. Radiocarbon date AA-63517 is from this feature. Lot 1657. See Figure 6.9.

A109-1P. La Laguna. Tenexac. Ditch. See Figure 6.14.

A110-1P. La Laguna. Tenexac. Rock slabs over a burned surface; interpreted as a domestic altar. Lots 1701, 1709. See Figure 6.15.

B7-2P. La Laguna, Area B. Probably Early Tezoquipan. Inner retaining wall of platform in front of Mound 10M-1. The objects found in wall interstices are tertiary refuse and cataloged under B7-1S.

B7-5P. La Laguna, Area B. Probably Early Tezoquipan. Outer retaining wall of platform in front of Mound 10M-1. The objects found in wall interstices are tertiary refuse and cataloged under B7-4S.

B26-1P. La Laguna, Area B. Probably Late Tezoquipan. Trough delimited by stones. The objects found inside it are tertiary refuse and are not included here.

B33-1P. La Laguna, Area B. Early Tezoquipan. House floors and floor preparation layers. Lots 1253, 1258.

B33-3P. La Laguna, Area B. Early Tezoquipan. Activity area on the outside of the same house wall, buried by rubble collapsed from it. Lots 1200, 1205, 1246, 1256, 1260.

B47-1P. La Laguna, Area F. Late Tezoquipan or Tenexac. Foundations of wattle-and-daub house.

B57-2P. La Laguna, Area F. Early Tezoquipan. Upright stones within bell-shaped pit, forming a feature resembling cist, though no human bone has been identified. Numbered items separated from Lot 1423.

B70-1P. La Laguna, Area F. Probably Late Tezoquipan. Corner of House Platform 15M-1, discovered by Borejsza and Rodríguez in 2004 (see Chapter 7). Most of platform was exposed by David Carballo in 2005.

B71-1P. La Laguna, Area F. Late Tezoquipan or Tenexac. Posthole associated with Platform 15M-1.

B77-1P. La Laguna, Area F. Late Tezoquipan or Tenexac. Posthole associated with Platform 15M-1.

B78-1P. La Laguna, Area F. Late Tezoquipan or Tenexac. Posthole associated with Platform 15M-1.

B82-1P. La Laguna, Area F. Late Tezoquipan or Tenexac. Stone alignment that may have delimited a patio area.

Bell-Shaped Pits

Bell-shaped pits—not always strictly bell shaped—are analytically interesting as likely facilities for the storage of maize. Since analysis will consist mainly of calculating the volume of the pit, only relatively intact bell-shaped pits are included in this register (unless there appears to be an abandonment assemblage of rocks at the base of the pit).

A4-1P. Tetel. Late Tlatempa. See also Abandonment Assemblage A4-2P.

A11-1P. Tetel. Texoloc.

A12-1P. Tetel. Late Tlatempa.

A13-1P. Tetel. Tlatempa. See also Abandonment Assemblage A13-2P.

A22-1P. Amomoloc. Early Tlatempa. See also Abandonment Assemblage A22-2P. More "boot" than "bell" in shape.

A30-1P. Las Mesitas. Texoloc. Mostly destroyed by erosion. See also Abandonment Assemblage A30-2P.

A32-1P. Las Mesitas. Texoloc.

A33-1P. Las Mesitas. Texoloc.

A34-1P. Las Mesitas. Texoloc.

A45-1P. Las Mesitas. Texoloc.

A46-1P. Amomoloc. Tzompantepec.

A54-1P. Amomoloc. Probably Late Tlatempa.

A57-1P. Amomoloc. Early Tlatempa.

A61-1P. Amomoloc. Tlatempa. More "boot" than "bell" in shape.

A63-1P. Amomoloc. Probably Early Tlatempa.

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A64-1P. Amomoloc. Late Tlatempa.
A68-1P. Amomoloc. Late Tlatempa. See also Abandonment Assemblage A68-2P.
A73-1P. Amomoloc. Late Tlatempa.
B39-1P. La Laguna, Area F. Probably Late Tezoquipan.
B42-1P. La Laguna, Area F. Early Tezoquipan.
B43-1P. La Laguna, Area F. Early Tezoquipan.
B45-1P. La Laguna, Area F. Early Tezoquipan.
B46-1P. La Laguna, Area F. Early Tezoquipan.
B50-1P. La Laguna, Area F. Early Tezoquipan.
B56-1P. La Laguna, Area F. Early Tezoquipan.
B57-1P. La Laguna, Area F. Early Tezoquipan.
B61-1P. La Laguna, Area F. Probably Late Tezoquipan.

Abandonment Assemblages on Floors of Storage Pits

The large rocks on the floors of some bell-shaped pits may be abandonment assemblages in the sense that they were parts of the original storage facility that were left in place after the pit was no longer used for storage. For instance, the rocks could have supported a mat or other perishable flooring that would have kept maize isolated from the damp floor of the pit. In a few cases, flat slabs within or at the base of a pit may originally have been a cover for the pit. It is important to point out that only a minority of bell-shaped pits were found to have large rocks on their floors.

A4-2P. Tetel. Late Tlatempa. Rocks at bottom of bell-shaped pit.
A13-2P. Tetel. Tlatempa. Rocks at bottom of bell-shaped pit.
A22-2P. Amomoloc. Early Tlatempa. Rocks at bottom of boot-shaped pit.
A30-2P. Las Mesitas. Texoloc. Rocks at bottom of bell-shaped pit.
A68-2P. Amomoloc. Late Tlatempa. Rocks at bottom of bell-shaped pit.
B46-4P. La Laguna, Area F. Early Tezoquipan. Slab at bottom of bell-shaped pit. Separated from Lot 1428.
B53-1P. La Laguna, Area F. Early Tezoquipan. Slab near bottom of bell-shaped pit. Separated from lots 1374, 1375, and 1389.
B61-3P. La Laguna, Area F. Probably Late Tezoquipan. Slab and other stones near bottom of bell-shaped pit. Separated from Lot 1414.

Hearths and Other Burned Pit Features

A variety of pit features appear originally to have been facilities for containing fire. Most common are what we will call hearths—burned features .9 m or less in diameter. At Amomoloc, there were also larger and/or more elaborate burned features, mostly roasting pits 1.2 to 2.4 m in at least one horizontal dimension.

A21-1P. Amomoloc. Tlatempa. Clay-lined pit, heavily burned, filled with fire-altered rocks. Roasting Pit.
A23-1P. Amomoloc. Early Tlatempa. Hearth.
A27-1P. Amomoloc. Probably Tlatempa. Roasting pit lined with crudely worked stone.
A27-2P. Amomoloc. Probably Tlatempa. Area of intense burning at center of roasting pit A27-1P.
A33-2P. Las Mesitas. Texoloc. Hearth in upper mouth of bell-shaped pit. By the time it was converted into a hearth, the pit had been almost entirely filled with sediment and cultural debris.
A34-2P. Las Mesitas. Texoloc. Hearth in upper mouth of bell-shaped pit. By the time it was converted into a hearth, the pit had been almost entirely filled with sediment and cultural debris.
A35-1P. Las Mesitas. Texoloc. Hearth.
A38-1P. Las Mesitas. Texoloc. Large, oval, clay-lined hearth or small roasting pit.
A43-1P. Las Mesitas. Texoloc. Hearth.
A51-1P. Amomoloc. Tlatempa. Roasting pit with a burned clay base and walls. Contained large basalt rocks.
A59-1P. Amomoloc. Tlatempa. Hearth.
A68-5P. Amomoloc. Late Tlatempa. Hearth.
A69-1P. Amomoloc. Tlatempa. Roasting pit.
B16-1P. Laguna, Area B. First occupation. Pit with evidence of burning.

Burials and Other Deposit of Human Bone

The following is a listing of analytically interesting deposits of human bone. A full analysis of these materials will be presented in Volume 3.

A4-3B. Tetel. Late Tlatempa. Disarticulated human bone on floor and in lower fill of a bell-shaped pit.
A11-3B. Tetel. Probably Texoloc. Badly preserved burial in uppermost mouth of bell-shaped pit, apparently originally articulated.
A34-3B. Las Mesitas. Texoloc. Burial, articulated, on the floor of a bell-shaped pit.
A68-3B. Amomoloc. Late Tlatempa. Burial, articulated, in lower part of a bell-shaped pit. The bones were partially disturbed in antiquity.
A115-1B. La Laguna, Area D. Probably second occupation, possibly Tenexac. Burial, articulated.
A116-1B. La Laguna, Area D. Probably Tenexac. Burial, disarticulated bone.
B10-1B. La Laguna, Area B. Late Tezoquipan. Contents of disturbed burial, possibly dragged out of cist (see B60-1B). Numbered items separated from Lot 1085.
B13-3B. La Laguna, Area B. Early Tezoquipan. Human bone in upper levels of large pit. Mostly disarticulated. Numbered items separated from lots 1065, 1068, 1071, and 1135.
B33-2B. La Laguna, Area B. Early Tezoquipan. Articulat-

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ed neonatal burial under house floor. Numbered items separated from Lot 1258.

B35-1B. La Laguna, Area B. Early Tezoquipan. Disturbed burial. Lot 1223 and numbered items separated from Lot 1217.

B36-1B. La Laguna, Area B. Early Tezoquipan. Articulated burial of a child. Includes items in the immediate vicinity of the skeleton but not all pit contents (see B36-2S). Lots 1232, 1233, and 1268.

B43-2B. La Laguna, Area F. Early Tezoquipan. Semiarticulated burial near bottom of bell-shaped pit. Numbered items separated from lots 1383 and 1488.

B46-2B. La Laguna, Area F. Early Tezoquipan. Semiarticulated burials in reused bell-shaped pit. Most ceramic artifacts are disturbed offerings, but some are refuse. Due to the impossibility of reliably distinguishing the provenience of every single bone and sherd, all human bones and ceramic artifacts are included here; other artifacts and ecofacts, which are more likely to be refuse, are cataloged under B46-3S. Lots 1341, 1344, 1395, 1398, 1420, 1422, 1428, 1444, 1445 1447, 1448, and 1449. Numbered items separated from Lot 1339.

B49-1B. La Laguna, Area F. Late Tezoquipan or Tenexac. Human remains in a pair of ceramic vessels. Items separated from lots 1349 and 1357.

B50-2B. La Laguna, Area F. Early Tezoquipan. Semiarticulated infant burial in upper levels of a bell-shaped pit. Numbered items separated from lots 1364 and 1369.

B51-1B. La Laguna, Area F. Early Tezoquipan. Articulated infant burial. Poorly preserved. Numbered items separated from Lot 1373.

B60-1B. La Laguna, Area B. Late Tezoquipan or Tenexac. Damaged cist with offerings but no bone. B10-1B may contain bone dragged out of it. Numbered items separated from lots 1117 and 1404.

B63-1B. La Laguna, Area B. Early Tezoquipan. Articulated burial. Lot 1407.

B64-1B. La Laguna, Area B. Late Tezoquipan or Tenexac. Concentration of fragmented human bone. Numbered items separated from Lot 1403.

B65-1B. La Laguna, Area B. Late Tezoquipan or Tenexac. Concentration of fragmented human bone. Numbered items separated from Lot 1403.

B70-2B. La Laguna, Area F. Probably Late Tezoquipan. Infant bone in house platform fill. Numbered items separated from Lot 1451.

B83-1B. La Laguna, Area F. Texoloc or Early Tezoquipan. Articulated burial. Lots 1479 and 1481.

SECONDARY CONTEXTS

The main goal of the excavations of Formative contexts was the recovery of samples of domestic refuse, including pottery, figurines, flaked stone tools and production debris, grinding stones, other stone tools, personal ornaments, ritual paraphernalia, animal bones, and carbonized botanical remains. The analysis of such materials will provide the basis for most of the insights we offer on Formative lifeways in central Tlaxcala in volumes 2 and 3.

Our original hope was to identify multiple large samples of secondary refuse from each phase or subphase. Secondary refuse would consist of domestic debris removed from its original location of use but thereafter deposited rapidly and not reworked by later activities. It should include debris from a restricted interval of time and therefore should not exhibit mixing of materials from two or more phases. Other characteristics would include large average sherd size, presence of refittable sherds, and often a few large vessel fragments or broken but completely reconstructable pots. Samples recovered and selected for analysis meet this ideal to varying degrees. Refuse deposits from the small sites tend to approach it more closely than those at La Laguna. A large and internally differentiated settlement, La Laguna had predictably longer and more complex waste streams (see Schiffer 1987:66–70). Few of them terminated in deposits of secondary refuse associated with a particular house. Further, the abandonment of use of the bell-shaped pit by the time of (or during the course of) the second occupation at La Laguna—in favor of aboveground storage facilities for maize (Uruñuela and Plunket 2012:26)—while probably a wise move on the part of the ancient inhabitants of Tlaxcala, was a tragedy for archaeology. Unmixed refuse deposits are few from the late occupation at La Laguna.

Refuse Samples from Closed (Pit) Contexts

Our efforts to recover samples approximating the standard of secondary refuse focused mainly on pit features, for two reasons. First, given loss of the Formative ground surface to erosion, these refuse-filled pits were the most common features recovered. Second, as closed deposits, they remained intact after they had been filled with refuse. The character of pit contents did vary, however. At Amomoloc, Tetel, and Las Mesitas, contents often included large fragments of a small number of vessels and smaller pieces of many more vessels. Fully reconstructable vessels were rare. At La Laguna, many pits contained few reconstructable vessels and the contents appear closer to tertiary than secondary refuse.

A1-1S. Tetel. Tlatempa. Contents of open-profile pit. Lots 9, 13, 22, 23.

A4-4S. Tetel. Late Tlatempa. Contents of bell-shaped pit, strata 4-1, 4-2, and 4-3, minus the burial (A4-3B) and large rocks on pit floor (A4-2P). Lots 24-26, 28, 29, and 35-41.

A10-1S. Tetel. Texoloc. Contents of open-profile pit, strata 10-1 and 10-2. Lots of Stratum 10-1 (48, 49, 52) mixed with fill of Platform 1 (Feature A2). Lots 48, 49, 52, 54, 55, and 57.

A11-2S. Tetel. Texoloc. Contents of bell-shaped pit, strata

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11-2, 11-3, and 11-4. Lots 67, 71, 72, and 82. Stratum 11-1, with burial, not included.

A12-2S. Tetel. Late Tlatempa. Contents of bell-shaped pit, strata 12-2 and 12-3. Lots 56, 85, 88, 94, 95, 96, 97, and 129.

A14-1S. Tetel. Texoloc. Contents of open-profile pit. Lots 100 and 101.

A15-1S. Tetel. Texoloc. Contents of open-profile pit. Lots 108, 112, 113, and 115.

A16-1S. Tetel. Texoloc. Contents of open-profile pit, strata 16-2 and 16-3. Lots 102, 104, and 106. Lot 133, from looter destruction, was associated with this feature but is not included in the refuse sample.

A17-1S. Tetel. Tlatempa. Contents of pit remnant, lots 111, 117, and 120. No volume. 111 unscreened.

A18-1S. Tetel. Texoloc. Contents of open-profile pit. Lots 125 and 128.

A19-1S. Tetel. Probably Late Tlatempa. Contents of pit remnant, lots 121, 126, and 127.

A21-2S. Amomoloc. Tlatempa. Cultural contents of roasting pit, lots 508 and 509.

A22-3S. Amomoloc. Early Tlatempa. Contents of boot-shaped pit, strata 22-1 and 22-2. Lots 501, 504, 506, 511, 513, 514, 515, 543, and 560.

A23-2S. Amomoloc. Early Tlatempa. Contents of open-profile pit, strata 23-1 and 23-2. Lots 519, 522, 532, 534, 537, 580, 585, and 667.

A24-1S. Amomoloc. Uncertain date. Although the ceramics associated with this feature are distinctly Tlatempa, a radiocarbon date from this feature provided a Classic-period date. Contents of open-profile pit, lots 518 and 525. We have not included these materials in any analyses in this volume.

A28-1S. Amomoloc. Tlatempa. Contents of open-profile pit, Stratum 28-0. Lots 520 and 521.

A30-3S. Las Mesitas. Texoloc. Contents of bell-shaped pit, Stratum 30-0. Much of the original pit destroyed by erosion. Lots 203 and 232.

A31-1S. Las Mesitas. Texoloc. Contents of open-profile pit, Stratum 31-0. Much of the original pit destroyed by erosion. Lot 283.

A32-2S. Las Mesitas. Texoloc. Contents of bell-shaped pit, strata 32-1 and 32-2. Lots 236, 237, 241, 250, 251, 265, 269, 278, 280, and 281. Note: because of a lab error, this sample and the next are typically treated together as sample A32+A33.

A33-3S. Las Mesitas. Texoloc. Contents of bell-shaped pit, strata 33-1 through 33-3. Lots 220, 223, 239, 243, 244, 252, 284, and 286. Note: because of a lab error, this sample and the previous are typically treated together as sample A32+A33.

A34-4S. Las Mesitas. Texoloc. Contents of bell-shaped pit, strata 34-1 through 34-4. Lots 224, 225, 230, 231, 261, 266, 270, 288, 289, and 299. Pit also included a burial, A34-3B, with associated offerings not included in refuse sample.

A35-2S. Las Mesitas. Texoloc. Fill of hearth, Stratum 35-0. Lots 221 and 226.

A37-1S. Las Mesitas. Texoloc. Contents of open-profile pit, Stratum 37-0. Lots 248 and 264.

A40-1S. Las Mesitas. Texoloc. Contents of open-profile pit, Stratum 40-0. Lot 357.

A41-1S. Las Mesitas. Texoloc. Concentration of cultural debris, Stratum 41-0. Lot 359.

A42-1S. Las Mesitas. Texoloc. Contents of possible bell-shaped pit, strata 42-1 and 42-2. Much of the original pit destroyed by erosion. Lots 324, 325, 360, and 367; only the last of these was screened.

A44-1S. Las Mesitas. Texoloc. Contents of open-profile pit, Stratum 44-0. Lot 377.

A45-2S. Las Mesitas. Texoloc. Contents of bell-shaped pit, Stratum 45-0. Lots 373, 375, and 378.

A46-2S. Amomoloc. Tzompantepec. Contents of bell-shaped pit, strata 46-1 through 46-3. Lots 586, 588, 589, 592, 593, 596, 601, 605, 606, 612, 614, 615, 617, 620, 625, 627, 629, 630, 631, 633, 635, 636, 641, 642, 643, 644, 646, 648, 649, 650, 653, 657, 658, and 748.

A47-1S. Amomoloc. Early Tlatempa. Contents of extensive, shallow refuse pit, strata 47-1 through 47-4. Lots 549, 602, 609, 613, 619, 621, 622, 626, 632, 637, 638, 640, 647, 654, 655, and 656.

A48-1S. Amomoloc. Late Tlatempa. Fill of open-profile pit, Stratum 48-0. Lots 610, 611, 639, 661, 718, and 750.

A49-1S. Amomoloc. Early Tlatempa. Fill of open-profile pit, Stratum 49-0. Lot 594.

A50-1S. Amomoloc. Tlatempa. Fill of open-profile pit, Stratum 50-0. Lot 624.

A51-2S. Amomoloc. Tlatempa. Fill of roasting pit, strata 51-1 through 51-3. Lots 652, 660, and 670.

A52-1S. Amomoloc. Tlatempa. Fill of open-profile pit, Stratum 52-0. Lot 645.

A53-1S. Amomoloc. Tlatempa. Fill of open-profile pit, Stratum 53-0. Lots 663 and 668.

A54-2S. Amomoloc. Probably Late Tlatempa. Fill of bell-shaped pit, strata 54-2 through 54-6. Lots 665, 666, 681, 685, 686, 693, 694, 696, 697, 702, 703, and 749.

A56-1S. Amomoloc. Tlatempa. Fill of open-profile pit, Stratum 56-0. Lot 706.

A57-2S. Amomoloc. Early Tlatempa. Fill of bell-shaped pit, strata 57-1 and 57-2. Lots 713, 714, 726, and 727.

A58-1S. Amomoloc. Tlatempa. Fill of open-profile pit, Stratum 58-0. Lot 711.

A59-2S. Amomoloc. Tlatempa. Fill of hearth, strata 59-1 and 59-2. Lots 719, 729, and 732.

A60-1S. Amomoloc. Late Tlatempa. Fill of shallow, open-profile pit, strata 60-1 and 60-2. Lots 720, 721, 724, 725, 728, 733, 735, and 741.

A61-2S. Amomoloc. Tlatempa. Fill of boot-shaped pit, Stratum 61-0. Lots 722 and 738.

A63-2S. Amomoloc. Probably Early Tlatempa. Fill of bell-shaped pit, strata 63-1 and 63-2. Lots 734, 740, 743, and 746.

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A64-2S. Amomoloc. Late Tlatempa. Fill of bell-shaped pit, Stratum 64-0. Lots 737, 742, 744, 747, 772, 774, and 775.

A66-1S. Amomoloc. Late Tlatempa. Fill of pit, almost bell shaped, Stratum 66-0. Lots 812, 813, 814, 816, 817, and 819.

A67-1S. Amomoloc. Late Tlatempa. Fill of open-profile pit, Stratum 67-0. Lots 925, 928, 932, 936, and 937.

A68-4S. Amomoloc. Late Tlatempa. Fill of bell-shaped pit, strata 68-1 through 68-11. Lots 815, 818, 822, 824, 826, 829, 830, 833, 834, 835, 836, 837, 842, 843, 845, 849, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 885, 889, 890, 893, 894, 895, 909, 933, 934, 962, 963, 964. This pit also contained a burial, A68-3B, with a few directly associated offerings (listed in Chapter 2) not included in the refuse sample.

A69-2S. Amomoloc. Tlatempa. Fill of roasting pit, strata 69-1 through 69-3. Lots 966, 972, 974, and 975.

A71-1S. Amomoloc. Probably Early Tlatempa. Fill of open-profile pit, strata 71-1 through 71-3. Lots 846, 847, 848, 958, 959, and 961.

A73-2S. Amomoloc. Late Tlatempa. Fill of bell-shaped pit, strata 73-1 through 73-8. Lots 831, 832, 852, 853, 854, 866, 871, 872, 876, 878, 879, 880, 883, 884, 886, 887, 888, 898, 899, 904, 905, 906, 914, 915, 920, 948, 949, 950, 951, 952, 953, 954, 955, 956, and 957.

A74-1S. Amomoloc. Late Tlatempa. Fill of open-profile pit, strata 74-1 through 74-3. Lots 931, 942, 965, 967, 968, 969, 970, and 971.

A75-1S. Amomoloc. Tlatempa. Fill of open-profile pit, strata 75-1 and 75-2. Lots 977, 978, and 982.

A76-1S. Amomoloc. Tlatempa. Fill of open-profile pit, strata 76-1 and 76-2. Lots 979 and 980.

A78-1S. Amomoloc. Early Tlatempa. Fill of pit, Stratum 78-0. Lots 989 and 990.

A101-1S. La Laguna, Area H. Early Tezoquipan or possibly Texoloc. Contents of what was probably a bell-shaped pit, truncated by erosion. Lot 1613.

A102-1S. La Laguna, Area H. Early Tezoquipan. Contents of what was probably a bell-shaped pit, truncated by erosion. Lots 1618, 1619, 1633, and 1662.

A103-1S. La Laguna, Area H. Late Tezoquipan or Tenexac based on stratigraphy. Concentration of sherds on occupation surface dating to the second occupation of La Laguna. Collection of sherds is small and not diagnostic. Lot 1630.

A105-1S. La Laguna, Area H. Early Tezoquipan. Contents of open-profile pit. Lot 1643.

A107-1S. La Laguna, Area D. Tezoquipan. Contents of pit. Lots 1682 and 1692.

A108-1S. La Laguna, Area D. Possibly a mixture of Tezoquipan and Tenexac. Contents of pit. Lot 1683.

A109-2S. La Laguna, Area D. Tenexac. Contents of ditch. Lots 1693 and 1696.

A111-1S. La Laguna, Area D. Phase unidentified (one possible Metl sherd). Lot 1702.

A112-1S. La Laguna, Area D. Early Tezoquipan. Contents of open-profile pit. Lot 1703.

A113-1S. La Laguna, Area D. Likely Tezoquipan. Contents of pit. Lot 1707.

B3-1S. La Laguna, Area A. Early Tezoquipan. Contents of remnant of bell-shaped pit, truncated by erosion. Lots 1043, 1044, 1045, 1047, 1049, 1052, 1110, 1111, and 1112.

B13-1S. La Laguna, Area B. Early Tezoquipan. Contents of upper levels of large open-profile pit. These layers also contained an unusually high concentration of human bone (B13-3B). Lots 1065, 1068, 1071, 1131, 1135, and 1136.

B13-2S. La Laguna, Area B. Early Tezoquipan. Contents of lower levels of large open-profile pit. Lots 1075, 1077, 1083, 1084, 1086, 1087, 1089, 1100, 1101, 1102, 1119, 1126, 1127, 1128, 1129, 1130, 1132, 1133, 1134, and 1139.

B13-5S. La Laguna, Area B. Early Tezoquipan. Contents of unspecified level of large open-profile pit. Lot 1140.

B16-2S. La Laguna, Area B. Early Tezoquipan. Contents of pit with mostly burned refuse. Lots 1074, 1120, 1121, and 1124.

B17-1S. La Laguna, Area B. Early Tezoquipan. Contents of small open-profile pit. Lot 1123.

B36-2S. La Laguna, Area B. Early Tezoquipan. Contents of open-profile pit, except those in the immediate vicinity of skeleton (see B36-1B). Lots 1220, 1226, 1230, 1266, 1267, 1269, 1270, 1271, 1272, and 1273.

B39-2S. La Laguna, Area F. Probably Late Tezoquipan. Contents of bell-shaped pit. Lots 1286, 1290, 1298, 1302, 1305, 1307, 1309, 1314, 1319, 1320, 1393, and 1431.

B41-1S. La Laguna, Area F. Late Tezoquipan or Tenexac. Contents of open-profile pit. Lots 1429 and 1497.

B42-2S. La Laguna, Area F. Early Tezoquipan. Contents of bell-shaped pit. Lots 1324, 1333, 1334, 1337, 1385, and 1386.

B43-3S. La Laguna, Area F. Early Tezoquipan. Contents of bell-shaped pit. Pit also contained a burial, B43-2B. Lots 1325, 1342, 1383, 1454, 1486, 1487, and 1488.

B44-1S. La Laguna, Area F. Probably Late Tezoquipan. Contents of open-profile pit. Lots 1321 and 1432.

B45-2S. La Laguna, Area F. Early Tezoquipan. Contents of bell-shaped pit. Lots 1329 and 1331.

B46-3S. La Laguna, Area F. Early Tezoquipan. Contents of bell-shaped pit reused for burials, excluding human bone and ceramic artifacts, which were more likely introduced with the burials (see B46-2B). Lots 1341, 1344, 1395, 1398, 1420, 1422, 1428, 1444, 1445 1447, 1448, and 1449.

B50-3S. La Laguna, Area F. Early Tezoquipan. Contents of bell-shaped pit. Lots 1364, 1369, 1376, 1377, 1379, 1382, 1437, 1472, 1473, 1474, 1475, 1476, 1477, 1478, 1484, and 1496.

B52-1S. La Laguna, Area F. Early Tezoquipan. Contents of

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truncated and heavily burrowed bell-shaped pit. Lots 1440, 1482, and 1495.

B53-2S. La Laguna, Area F. Early Tezoquipan. Contents of truncated and heavily burrowed bell-shaped pit. Lots 1374, 1375, 1378, 1389, and 1390.

B55-1S. La Laguna, Area F. Early Tezoquipan. Contents of set of crosscutting open-profile pits. Lots 1313, 1316, 1322, 1391, 1392, 1394, 1492, 1493, 1494, 1498, 1499, and 1502.

B56-2S. La Laguna, Area F. Early Tezoquipan. Contents of bell-shaped pit. Lots 1294, 1323, 1350, 1425, 1426, 1427.

B57-3S. La Laguna, Area F. Early Tezoquipan. Contents of bell-shaped pit. Lots 1399, 1421, 1423, and 1424.

B61-2S. La Laguna, Area B. Probably Late Tezoquipan. Contents of bell-shaped pit. Lots 1405, 1406, 1408, 1410, 1411, 1412, 1413, 1414, 1489, 1500, and 1501.

C120-1S. La Laguna, Area F. Tezoquipan. Stratigraphically, this should date from the second occupation. Contents of bell-shaped pit atop residential platform, Structure 15M-1. Lots 1768, 1771, and 1773.

C121-1S. La Laguna, Area F. Tezoquipan. Stratigraphically, this should date from the second occupation. Contents of bell-shaped pit atop residential platform, Structure 15M-1. Lots 1793, 1794.

C123-1S. La Laguna, Area F. Early Tezoquipan. Contents of bell-shaped pit. Lots 1790 and 1791.

C132-1S. La Laguna, Area F. Tezoquipan. Stratigraphically, this should date from the second occupation. Contents of open-profile pit atop residential platform, Structure 15M-1. Lots 1842 and 1843.

C133-1S. La Laguna, Area F. Unidentified as to pottery complex; see discussion in Chapter 11. Contents of open-profile pit atop residential platform, Structure 15M-1. Lots 1853, 1854, 1855, 1856, and 1857.

C137-1S. La Laguna, Area I. Texoloc? (Laguna Texoloc.) Contents of open-profile pit. Lots 1862 and 1863.

C140-1S. La Laguna, Area I. Early Tezoquipan. Contents of open-profile pit. Lot 1867.

C141-1S. La Laguna, Area I. Texoloc? (Laguna Texoloc.) Contents of bell-shaped pit. Lots 1868 and 1869.

C143-1S. La Laguna, Area H. Texoloc? (Laguna Texoloc.) Contents of bell-shaped pit. Lots 2066, 2067, 2073, 2076, and 2103.

C148-1S. La Laguna, Area H. Early Tezoquipan. Contents of bell-shaped pit. Lots 2085 and 2088.

Buried Occupation Surfaces with Sheet Midden Accumulation

In parts of La Laguna, we identified buried ground surfaces with dense concentrations of refuse—sheet midden accumulations, typically well trampled. We identify these middens as useful analytical contexts, particularly for the Tenexac phase. Carry-ups from previous phases are more common here than in our other samples, but particularly for Tenexac we have few alternatives since pit features were rare. Some of these contexts have standard labels derived from feature numbers. Others, however, lack feature numbers. In those cases we use the following notation for labeling the contexts: (abbreviation for site, in each case Lag for La Laguna)-(letter designation for area within site) (sequential number within that area). Thus, Lag-I1 is a toss midden from Area I at Laguna; Lag-D2 is the second of two toss midden samples from Area D at that site; and so forth.

A110-2S. La Laguna, Area D. Tenexac. Refuse atop abandoned domestic altar (see A110-1P). Lots 1698 and 1700.

A114-1S. La Laguna, Area D. Second occupation. Lens of sherds in Formative occupation surface? Lot 1712.

B13-4S. La Laguna, Area B. Early Tezoquipan. Refuse spread over and around the mouth of a large open-profile pit and adjacent features. Lots 1070, 1076, 1080, 1082, 1122, and 1137.

B81-1S. La Laguna, Area B. Probably Late Tezoquipan. Refuse in ill-defined pit or thick sheet midden. Lots 1458, 1469, and 1470.

Lag-I1. La Laguna, Area I. Early Tezoquipan. Lot 1871.

Lag-D1. La Laguna, Area D. Tenexac. Lots 1678, 1684, and 1685.

Lag-D2. La Laguna, Area D. Tenexac. Lots 1676, 1690–1691, and 1699.

Lag-H1. La Laguna, Area H. Second occupation, likely with admixture from first occupation. Late Tezoquipan? Fill of structure 14M-1sub. Lot 2089.

Lag-H2. La Laguna, Area H. Tenexac. Structure 14M-1, occupation surface. Lots 1951, 2022, 2026, 2027, 2028, 2031, 2033, 2034, 2035, 2039, 2042, and 2043.

Lag-H3. La Laguna, Area H. Tenexac. Excavation Unit H24T, Lot 1631.

Samples of Tertiary Refuse

In some instances, fill or destruction debris contains valuable samples of refuse, even though the chances of mixing are high.

B7-1S. La Laguna, Area B. Probably Early Tezoquipan. Objects found in interstices of inner retaining wall of platform in front of Mound 10M-1. Lots 1231, 1234, 1235, 1236, 1237, 1238, 1241, 1243, and 1251.

B7-3S. La Laguna, Area B. Probably Early Tezoquipan. Fill of platform in front of Mound 10M-1. Lots 1157, 1172, 1174, 1179, 1186, 1187, 1190, 1191, 1192, 1194, 1195, 1199, 1204, 1206, 1244, 1248, 1249, 1250, 1252, 1254, 1255, 1257, and 1259.

B7-4S. La Laguna, Area B. Probably Early Tezoquipan. Objects found in interstices of outer retaining wall of platform in front of Mound 10M-1. Lots 1208 and 1212.

B7-6S. La Laguna, Area B. Probably Early Tezoquipan. Objects found in interstices of uppermost courses of

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both retaining walls of platform in front of Mound 10M-1. Lots 1193 and 1197.

B25-1S. La Laguna, Area B. Probably Early Tezouipan. Reworked soil and house demolition debris buried under architectural rubble (B25-2S). Lots 1181, 1184, 1189, 1196, 1201, 1202, 1207, 1209, 1210, 1211, 1218, 1227, 1228, and 1247.

B25-2S. La Laguna, Area B. Probably Late Tezoquipan. Architectural rubble, probably from demolition of structure associated with Mound 10M-1. Lots 1151, 1153, 1159, 1161, 1163, 1168, 1171, and 1175.

B25-3S. La Laguna, Area B. Probably Early Tezoquipan. Reworked soil and house demolition debris close to and under the level of Feature 25 but not directly buried by it. Lots 1203, 1219, 1239, 1240, and 1265.

B25-4S. La Laguna, Area B. Probably Late Tezoquipan. Architectural rubble close to, but not belonging to Feature 25. Lots 1177 and 1180.

B32-1S. La Laguna, Area B. Probably Early Tezoquipan. Demolition debris from the destruction of wattle-and-daub house. Buried under B25-2S. Lots 1182, 1183, 1185, and 1188.

B47-2S. La Laguna, Area F. Late Tezoquipan or Tenexac. Objects found among stone foundations of wattle-and-daub house, on associated surface (probable floor), and among demolition debris reworked into overlying colluvium. Lots 1351, 1457, 1459, and 1461.

B70-3S. La Laguna, Area F. Probably Late Tezoquipan. Fill and wall interstices of House Platform 15M-1. Lots 1451 and 1485.

B70-4S. La Laguna, Area F. Probably Tenexac. Layered deposit associated with House Platform 15M-1, either from its natural decay or an intentional add-on. Lots 1433, 1434, and 1450.

SAMPLES FOR SOCIAL ANALYSIS: THE THREE ALTERNATIVES

The basic goal of our social analysis will be to trace changing lifeways in central Tlaxcala from the earliest settlement of the area by Formative agriculturalists to the major demographic disruptions occasioned by expansion of the Teotihuacan state. Those analyses will focus mainly on relatively well-dated samples of domestic refuse selected from the secondary contexts listed above. Depending on the questions being asked and the materials under study (rare or common?), analysts may choose from the following three samples of units.

The Chronological Sample

The Chronological Sample is the most restricted. These are the "best" refuse samples we have. They appear to be temporally restricted units with a minimum of admixture from previous phases, criteria we have stretched in the case of Tenexac to include sheet middens on buried ground surfaces. Except for two units (A48 and A49), we have set a minimum of 35 identified rim sherds for inclusion in the chronological sample. (Unit A49 was included because despite the small size, it includes strong Early Tlatempa markers; A48 because it has a stratigraphic relation with another unit. See discussion of Early and Late Tlatempa in Chapter 11.) Units of the Chronological Sample are listed in Table 8.1, along with some basic information: site, feature type, volume excavated, number of sherds, weight of sherds, and number of rims. The volumes excavated were calculated by lot from beginning and ending depths of individual lots. The calculations are more accurate for La Laguna (± .03 m^3) than for the other sites. At Amomoloc, Tetel, and Las Mesitas, the potential inaccuracy of the calculation seems in many cases to be of the same order of magnitude as the total volume of some features (perhaps ± .1 m^3?) because we had individual excavators (often students) calculate volumes for lots they excavated, with uneven success. The volumes can be used to standardize comparisons between units and phases, but always bear in mind that these are estimates. Elaborate conclusions should not be built up from small differences of density.

Also provided in Table 8.1 are two measures of sherd size, statistics that provide some help in determining the degree to which units approximate the standard of secondary refuse. "Average sherd weight" is the total weight of sherds in the unit divided by the total number of sherds. The "completeness index" is the proportion of rim sherds constituting 15 percent or more of the original mouth of the vessel; to minimize inter-observer differences, measured rims constituting less than 5 percent of the original mouth were treated as unmeasurable in the calculation of this statistic. The two means of assessing sherd size are quite different, and, not unexpectedly, the results are not closely correlated. The completeness index is particularly helpful in drawing attention to certain extremes. Early Tezoquipan bell-shaped pit B46 yields an unusually high value because it was used repeatedly as a burial chamber; offerings of ceramic vessels, some complete and some fragmentary, are included in this sample, the only unit of the Chronological Sample for which that is the case. The very low completeness values of our Tenexac samples are consistent with our assessment of the contexts as well-trampled sheet middens. The Tenexac samples stray further from the ideal of secondary refuse than we would like, and there is undoubtedly some admixture of Tezoquipan or even Texoloc material in each of the samples.

Information on volume excavated, number of sherds, weight of sherds, and number of rims is provided for the purpose of standardizing comparisons between units, phases, sites, and so on. Table 8.2 provides totals of these figures by site and phase.

Table 8.3 provides information on the stratigraphic relations between specific units of the chronological sample and the lab codes of any radiocarbon dates. (For the dates

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Table 8.1. The Chronological Sample with Basic Associated Information.

Context	Site	Feature Type	Volume (m^3)	Number of Sherds	Weight of Sherds (kg)	Number of Rims	Completeness Index[a]	Average Sherd Weight (g)[b]	Comments
Tzompantepec									
A046-2S	Amomoloc	bell-shaped pit	2.84	1,417	27.8	109	.38	19.6	
Early Tlatempa									
A022-3S	Amomoloc	bell-shaped pit	1.44	1,060	14.4	99	.08	13.6	
A023-2S	Amomoloc	open-profile pit	.65	1,853	29.3	209	.10	15.8	
A047-1S	Amomoloc	open-profile pit	3.82	2,861	73.8	310	.21	25.8	
A049-1S	Amomoloc	open-profile pit	.08	300[c]	4.7[c]	32	.17		
A057-2S	Amomoloc	bell-shaped pit	2.54	957	20.0	102	.20	20.9	
A063-2S	Amomoloc	bell-shaped pit	1.42	458	8.5	58	.20	18.5	
A071-1S	Amomoloc	open-profile pit	.63	1,091	14.4	124	.13	13.2	
Late Tlatempa									
A004-4S	Tetel	bell-shaped pit	.87	1,908	39.0	194	.24	20.5	
A012-2S	Tetel	bell-shaped pit	2.58	902	16.3	83	.14	18.0	
A048-1S	Amomoloc	open-profile pit	.75	515	10.3	24	.13		
A054-2S	Amomoloc	bell-shaped pit	1.75	2,182	46.1	163	.35	21.1	
A060-1S	Amomoloc	open-profile pit	1.71	1,770	28.4	155	.10	16.0	
A064-2S	Amomoloc	bell-shaped pit	1.32	754	13.5	88	.22	17.9	
A067-1S	Amomoloc	open-profile pit	.47	552	10.0	54	.24	18.1	
A068-4S	Amomoloc	bell-shaped pit	2.75	3,329	102.5	242	.33	30.8	
A073-2S	Amomoloc	bell-shaped pit	2.30	4,485	87.3	418	.26	19.5	
A074-1S	Amomoloc	open-profile pit	2.77	1,525	20.5	71	.20	13.5	
Texoloc									
A010-1S	Tetel	open-profile pit	1.96	855	15.9	118	.15	18.6	
A011-2S	Tetel	bell-shaped pit	1.41	2,615	77.5	198	.30	29.6	
A015-1S	Tetel	open-profile pit	.65	1,778	21.5	224	.12	12.1	
A016-1S	Tetel	open-profile pit	1.08	861	18.9	163	.21	21.9	
A032 + A33	Mesitas	two bell-shaped pits	1.35	773	14.6	57	.26	18.9	
A034-4S	Mesitas	bell-shaped pit	.66	642	7.9	80	.11	12.4	
A045-2S	Mesitas	bell-shaped pit	.48	323	4.3	40	.14	13.3	
Laguna Texoloc?									
C137-1S	Laguna	open-profile pit	.46	742	16.2	140	.06	21.8	
C141-1S	Laguna	bell-shaped pit	.74	866	18.1	137	.11	20.9	
C143-1S	Laguna	bell-shaped pit	.76	324	8.8	50	.10	27.1	
Early Tezoquipan									
A102-2S	Laguna	bell-shaped pit?	.19	303	6.8	43	.27	22.4	
A105-1S	Laguna	open-profile pit	.17	287	6.5	77	.12	22.7	
A112-1S	Laguna	open-profile pit	.58	387	5.9	51	.12	15.2	
B3-1S	Laguna	bell-shaped pit	.26	361	5.88	49	.31	16.3	not screened
B13-2S	Laguna	open-profile pit	1.23	1,526	30.61	188	.29	20.1	not screened
B13-1S	Laguna	open-profile pit	.61	1,679	18.25	146	.08	10.9	not screened
B36-1B, -2S	Laguna	open-profile pit	1.14	1,221	25.35	137	.24	20.8	not screened
B46-2B, 3S	Laguna	bell-shaped pit	1.69	1,006	24.08	114	.44	23.9	94% of volume screened
B50-3S	Laguna	bell-shaped pit	1.41	1,123	10.85	94	.16	9.6	91% of volume screened
B55-1S	Laguna	open-profile pit	1.44	2,251	28.26	157	.18	12.6	
C123-1S	Laguna	bell-shaped pit	.57	516	7.4	69	.18	14.4	

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Table 8.1. *continued*

Context	Site	Feature Type	Volume (m^3)	Number of Sherds	Weight of Sherds (kg)	Number of Rims	Completeness Index[a]	Average Sherd Weight (g)[b]	Comments
C140-1S	Laguna	open-profile pit	.11	200	5.1	37	.30	25.6	
C148-1S	Laguna	bell-shaped pit	.69	635	10.6	90	.17	16.7	
Lag-I1	Laguna	sheet midden	.80	955	18.9	172		19.8	
Late Tezoquipan?									
B61-2S	Laguna	bell-shaped pit	.41	529	5.53	42	.15	10.5	
C120-1S	Laguna	bell-shaped pit	.58	765	15.0	95	.20	19.5	
C121-1S	Laguna	bell-shaped pit	.40	560	15.0	65	.20	26.8	
C132-1S	Laguna	open-profile pit	.68	618	10.1	61	.26	16.3	
Lag-H1	Laguna	sheet midden		975	15.6	150	.06		side of H1-sub
Unique assemblage, not assigned to phase									
C133-1S	Laguna	open-profile pit	.88	1,067	23.9	61	.15	17.4	
Tenexac									
A109-2S	Laguna	ditch	.23	787	11.3	108	.02	14.4	
A110-2S	Laguna	sheet midden	.14	612	8.2	83	.08	13.4	
Lag-D1	Laguna	sheet midden	1.54	4,413	49.1	518	.03	11.1	
Lag-D2	Laguna	sheet midden	2.15	3,852	43.5	439	.05	11.3	
Lag-H2	Laguna	sheet midden	9.49	3,462	55.0	312	.03	15.9	H1-N
Lag-H3	Laguna	sheet midden	.45	697	4.8	44	.00	6.9	

[a] Completeness index is the proportion of rim sherds constituting 15 percent or more of the original mouth of the vessel. (Measured rims comprising less than 5 percent of the original mouth are treated as unmeasurable to minimize inter-observer differences.)
[b] Average sherd weight is the weight of sherds (in grams) divided by the number of sherds.
[c] Estimate based on number of rims; original data on total number sherds and sherd weight missing.

Table 8.2. Totals of Basic Statistics of the Chronological Sample, Split by Phase.

Phase	Number of Contexts	Total Volume Excavated (m^3)	Total Number of Sherds	Total Weight of Sherds (kg)	Total Number of Rims
Tzompantepec	1	2.84	1,417	27.8	109
Early Tlatempa	7	10.58	8,580	165.1	934
Late Tlatempa	10	17.27	17,922	373.9	1,492
Texoloc	7	7.59	7,847	160.6	880
Laguna Texoloc	3	1.96	1,932	43.1	327
Early Tezoquipan	14	10.89	12,450	204.48	1,424
"Late Tezoquipan"	5	2.07[a]	2,472	45.63	263
Tenexac	6	14.00	13,823	171.9	1,504

[a] Data from Lag-H1 is missing.

themselves and analysis thereof, see Chapter 11.) Stratigraphic relations can be characterized as direct (one feature cutting into another or clearly superimposed within the same excavation unit) or indirect (the argument for superimpositions involves a more generalized analysis of strata extending across potentially multiple excavation units).

The Chronological Sample forms the basis for our description of pottery types and vessel forms in Chapter 9, the seriation of figurines in Chapter 10, and the chronological analysis of Chapter 11.

The Expanded Refuse Sample

With the basic chronology of deposits at our small sites and the different excavated areas at Laguna established—through analysis of the Chronological Sample and associated stratigraphic relations and radiocarbon dates—it becomes possible to identify an expanded sample of units that can reasonably be used for social analysis but that did not meet our criteria for inclusion in the Chronological Sample. At Amomoloc and Tetel, there are numerous small samples from Tlatempa-phase pit features that are fully acceptable as secondary refuse but for which a subphase determination (Early versus Late Tlatempa) is not possible. The whole collection of artifacts from Las Mesitas areas A and F, along with Feature A42 in Area E, is de-

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Table 8.3. Units of the Chronological Sample Associated with Radiocarbon Dates or with a Known Stratigraphic Relation to Another Unit of the Sample.

Context	Site	Stratigraphic Relationships	^{14}C dates
Tzompantepec			
A046-2S	Amomoloc		AA63516, Beta191700
Early Tlatempa			
A022-3S	Amomoloc		AA43606
A023-2S	Amomoloc		AA58957
Late Tlatempa			
A004-4S	Tetel		AA43599, AA43598
A012-2S	Tetel	cut into directly by A10	AA43600
A048-1S	Amomoloc	cuts directly into A54	
A054-2S	Amomoloc	cut into directly by A48	
Texoloc			
A010-1S	Tetel	cuts directly into A12	AA43602, AA4360
A011-2S	Tetel		AA43603, AA43604
A015-1S	Tetel		AA43605
A032 + A33	Mesitas		AA58956
A045-2S	Mesitas		AA58955
Laguna Texoloc?			
C137	Laguna	indirectly below Lag-I1	
C141	Laguna	indirectly below Lag-I1	
C143	Laguna		Beta227412
Early Tezoquipan			
A102-2S	Laguna		AA65516
A105-1S	Laguna		AA65514
A112-1S	Laguna	directly below A110	AA63518
B013-2S	Laguna	directly below B13-1S	Beta210313
B013-1S	Laguna	directly above B13-2S	Beta210312
B046	Laguna		AA63373, AA94043
C123	Laguna	indirectly below C120, C121, C132, C133	
C140	Laguna	indirectly below Lag-I1	
Lag-I1	Laguna	indirectly above C137, C140, C141	
Late Tezoquipan?			
C120	Laguna	indirectly above C123	Beta216423
C121	Laguna	indirectly above C123	
C132	Laguna	indirectly above C123	
Lag-H1	Laguna	indirectly below Lag-H2	Any associated dates?
Unique assemblage, not assigned to phase			
C133	Laguna	indirectly above C123	
Tenexac			
A110-2S	Laguna	directly above A112	AA63519
Lag-D1	Laguna	indirectly above A112	
Lag-D2	Laguna	indirectly above A112	
Lag-H2	Laguna	indirectly above Lag-H1	Any associated dates?
Lag-H3	Laguna	indirectly above A102	Beta262554

finitively Texoloc. At La Laguna, Borejsza and Rodríguez's excavations in Area B yielded numerous artifact-rich architectural fills, pits, burials, and other contexts. The occupation of this area appears entirely Tezoquipan—not Texoloc and unlikely to be Tenexac. Radiocarbon dates and stratigraphic considerations give an indication of whether the features date to the first or second occupation of the site. The refuse can therefore be considered Tezoquipan despite the tertiary character of some of it, though a distinction between early and late is usually impossible. In Area F, downslope from the 15M-1 platform, Borejsza and Rodríguez discovered several bell-shaped pits and other features of Early Tezoquipan age. A few of them are included in the Chronological Sample, but most contain sparse tertiary refuse.

The Extended Refuse Sample includes the entire Chronological Sample (Table 8.1) plus the additional units listed in Table 8.4.

The Maximal Refuse Sample

Certain research questions might be usefully addressed by considering a refuse sample of maximum possible size, and undoubtedly Formative objects of intrinsic interest come from contexts that are far removed from the ideal of undisturbed secondary refuse. We place them with the remainder of our collection in a Maximal Refuse Sample. Its rough chronological division can be achieved by considering the collections from each site as units. Amomoloc is earliest, followed by Tetel, Las Mesitas, and La Laguna. At La Laguna in particular, uncovering Formative ground surfaces or pits often required the removal of thick deposits of Postclassic to 20th-century date. These were replete with redeposited Formative artifacts. Obviously, their context is only marginally better than that of surface collections, but their state of preservation is often relatively good.

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Table 8.4. The Expanded Refuse Sample with Basic Associated Information.

Context	Site	Feature Type	Volume (m^3)	Number of Sherds	Weight of Sherds (kg)	Number of Rims	Completeness Index[a]	Average Sherd Weight (g)[b]	Comments
Tzompantepec									
A46-2S	Amomoloc	bell-shaped pit	2.84	1,417	27.8	109	.38	19.6	
Tlatempa									
A1-1S	Tetel	open-profile pit	.26	223	4.0	33	.30	17.9	
A4-4S	Tetel	bell-shaped pit	.87	1,908	39.0	194	.24	20.5	
A12-2S	Tetel	bell-shaped pit	2.58	902	16.3	83	.14	18.0	
A17-1S	Tetel	open-profile pit		604	10.7	12	.30	17.7	
A19-1S	Tetel	pit remnant	.33	275	6.8	33	.19	24.7	
A21-2S	Amomoloc	roasting pit	2.39	2,611	21.2	47	.09	8.1	
A22-3S	Amomoloc	bell-shaped pit	1.44	1,060	14.4	99	.08	13.6	
A23-2S	Amomoloc	open-profile pit	.65	1,853	29.3	209	.10	15.8	
A28-1S	Amomoloc	open-profile pit	.88	251	6.9	23	.43	27.5	
A47-1S	Amomoloc	open-profile pit	3.82	2,861	73.8	310	.21	25.8	
A48-1S	Amomoloc	open-profile pit	.75	515	10.3	24	.13	20.0	
A49-1S	Amomoloc	open-profile pit	.08	55	1.2	32	.17	21.8	
A50-1S	Amomoloc	open-profile pit	.07	68	2.0	13	.33	29.4	
A51-2S	Amomoloc	hearth		96	1.6	12	.09	16.7	
A52-1S	Amomoloc	open-profile pit	.02	61	1.2	5	.25	19.7	
A53-1S	Amomoloc	open-profile pit	.28	176	8.7	13	.36	49.4	
A54-2S	Amomoloc	bell-shaped pit	1.75	2,182	46.1	163	.35	21.1	
A56-1S	Amomoloc	open-profile pit	.05	93	2.0	15	.33	21.5	
A57-2S	Amomoloc	bell-shaped pit	2.54	957	20.0	102	.20	20.9	
A58-1S	Amomoloc	open-profile pit	.01	17	.8	2	.00	47.1	
A59-2S	Amomoloc	hearth	.78	121	3.5	12	.57	28.9	
A60-1S	Amomoloc	open-profile pit	1.71	1,770	28.4	155	.10	16.0	
A61-2S	Amomoloc	boot-shaped pit	.01	18	.5	3	.00	27.8	
A63-2S	Amomoloc	bell-shaped pit	1.42	458	8.5	58	.20	18.6	
A64-2S	Amomoloc	bell-shaped pit	1.32	754	13.5	88	.22	17.9	
A66-1S	Amomoloc	bell-shaped pit	.58	531	4.8	31	.29	9.0	
A67-1S	Amomoloc	open-profile pit	.47	552	10.0	54	.24	18.1	
A68-4S	Amomoloc	bell-shaped pit	2.75	3,329	102.5	242	.33	30.8	
A69-2S	Amomoloc	roasting pit	.25	126	1.5	19	.0	11.9	
A71-1S	Amomoloc	open-profile pit	.63	1,091	14.4	124	.13	13.2	
A73-2S	Amomoloc	bell-shaped pit	2.30	4,485	87.3	418	.26	19.5	
A74-1S	Amomoloc	open-profile pit	2.77	1,525	20.5	71	.20	13.5	
A75-1S	Amomoloc	open-profile pit	.23	164	2.0	22	.10	12.2	
A76-1S	Amomoloc	open-profile pit	.22	110	1.7	14	.25	15.5	
A78-1S	Amomoloc	pit	.26	344	12.8	29	.33	37.2	
Texoloc									
A10-1S	Tetel	open-profile pit	1.96	855	15.9	118	.15	18.6	
A11-2S	Tetel	bell-shaped pit	1.41	2,615	77.5	198	.30	29.6	
A14-1S	Tetel	open-profile pit	.54	75	.9	11	.00	12.0	
A15-1S	Tetel	open-profile pit	.65	1,778	21.5	224	.12	12.1	
A16-1S	Tetel	open-profile pit	1.08	861	18.9	163	.21	22.0	
A18-1S	Tetel	open-profile pit	.33	121	3.5	19	.22	28.9	

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Table 8.4. *continued*

Context	Site	Feature Type	Volume (m^3)	Number of Sherds	Weight of Sherds (kg)	Number of Rims	Completeness Index[a]	Average Sherd Weight (g)[b]	Comments
A30-3S	Mesitas	bell-shaped pit	.08	69	1.0	5	.00	14.5	
A31-1S	Mesitas	open-profile pit	.16	76	1.2	11	.33	15.8	
A32 + A33	Mesitas	two bell-shaped pits	1.35	773	14.6	57	.26	18.9	
A34-4S	Mesitas	bell-shaped pit	.66	642	7.9	80	.11	12.3	
A35-2S	Mesitas	hearth	.09	334	3.2	13	.14	9.6	
A37-1S	Mesitas	open-profile pit	.14	206	3.0	14	.11	14.6	
A40-1S	Mesitas	open-profile pit	.08	45	.4	4		8.9	
A41-1S	Mesitas	sherd concentration	.20						
A42-1S	Mesitas	bell-shaped pit		528	8.5	66	.14	16.1	no volume
A44-1S	Mesitas	open-profile pit	.04	16	.5	5	.00	31.3	
A45-2S	Mesitas	bell-shaped pit	.48	323	4.3	40	.14	13.3	
Laguna Texoloc?									
C137	Laguna	open-profile pit	.46	742	16.2	140	.06	21.8	
C141	Laguna	bell-shaped pit	.74	866	18.1	137	.11	20.9	
C143	Laguna	bell-shaped pit	.76	324	8.8	50	.10	27.1	
Texoloc/Early Tezoquipan									
B83-1B	Laguna	grave pit	.13	11	.96	2	.50	87.3	
Early Tezoquipan									
A101-1S	Laguna	bell-shaped pit?	.08	190	1.6				
A102-2S	Laguna	bell-shaped pit?	.19	303	6.8	43	.27	22.4	
A105-1S	Laguna	open-profile pit	.17	287	6.5	77	.12	22.7	
A112-1S	Laguna	open-profile pit	.58	387	5.9	51	.12	15.2	
B3-1S	Laguna	bell-shaped pit	.26	361	5.88	49	.31	16.3	not screened
B13-2S	Laguna	open-profile pit	1.23	1,526	30.61	188	.29	20.1	not screened
B13-1S	Laguna	open-profile pit	.61	1,679	18.25	146	.08	10.9	not screened
B13-4S	Laguna	sheet midden	.21	251	5.96	29		23.7	not screened, not analyzed
B13-5S	Laguna	open-profile pit							section cleaning only, no sherds
B16-2S	Laguna	open-profile pit	.02	62	1.41	8	.33	22.7	not screened
B17-1S	Laguna	open-profile pit		15	.41	0		27.3	section cleaning only
B33-3P	Laguna	outdoor activity area	.41	318	7.52	41	.21	23.6	not screened
B35-1B	Laguna	disturbed burial	.08	63	.91	10	.11	14.4	not screened
B36-1B, -2S	Laguna	open-profile pit	1.14	1,221	25.35	137	.24	20.8	not screened
B42-2S	Laguna	bell-shaped pit	.86	557	4.04	40	.15	7.3	
B43-3S	Laguna	bell-shaped pit	1.02	590	3.23	24	.10	5.5	
B45-2S	Laguna	bell-shaped pit	.18	193	1.40	17	.00	7.3	
B46-2B	Laguna	bell-shaped pit	1.69	1,006	24.08	114	.44	23.9	94% of volume screened
B50-3S	Laguna	bell-shaped pit	1.41	1,123	10.85	94	.16	9.6	91% of volume screened
B52-1S	Laguna	bell-shaped pit	.30	120	2.65	12	.18	22.1	
B53-2S	Laguna	bell-shaped pit	.73	451	2.46	14	.00	5.5	
B55-1S	Laguna	open-profile pit	1.44	2,251	28.26	157	.18	12.6	
B56-2S	Laguna	bell-shaped pit	.18	52	.72	7	.00	13.8	42% of volume screened
B57-3S	Laguna	bell-shaped pit	.46	44	.62	3	.50	14.1	
C123	Laguna	bell-shaped pit	.57	516	7.4	69	.18	14.4	
C140	Laguna	open-profile pit	.11	200	5.1	37	.30	25.6	

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Table 8.4. *continued*

Context	Site	Feature Type	Volume (m^3)	Number of Sherds	Weight of Sherds (kg)	Number of Rims	Completeness Index[a]	Average Sherd Weight (g)[b]	Comments
C148	Laguna	bell-shaped pit	.69	635	10.6	90	.17	16.7	
Lag-I1	Laguna	sheet midden	.80	955	18.9	172		19.8	
Early Tezoquipan?									
B7-1S	Laguna	platform wall	.35	132	2.20	18	.06	16.7	not screened
B7-3S	Laguna	platform fill	7.95	4,031	74.32	521	.11	18.4	not screened, 98% of rims analyzed
B7-4S	Laguna	platform wall	.35	12	.23	0		19.2	not screened
B7-6S	Laguna	platform walls	.23	23	.18	3	.00	7.8	not screened
B25-1S	Laguna	reworked soil	3.01	1,778	31.97	294	.13	18.0	not screened
B25-3S	Laguna	reworked soil	.96	220	4.26	35	.21	19.4	not screened
B32-1S	Laguna	demolition debris	.98	265	3.77	23	.00	14.2	not screened
Late Tezoquipan?									
B25-2S	Laguna	architectural rubble	3.01	656	13.39	93	.05	20.4	not screened, 97% of rims analyzed
B25-4S	Laguna	architectural rubble	.47	92	.91	6	.00	9.9	not screened
B39-2S	Laguna	bell-shaped pit	1.06	555	4.82	30	.23	8.7	
B44-1S	Laguna	open-profile pit	.04	43	.35	0		8.1	
B61-2S	Laguna	bell-shaped pit	.41	529	5.53	42	.15	10.5	
B70-3S	Laguna	platform wall and fill	.24	260	1.46	15	.00	5.6	
B81-1S	Laguna	sheet midden	.22	349	2.98	19	.23	8.5	
C120	Laguna	bell-shaped pit	.58	765	15.0	95	.20	19.5	
C121	Laguna	bell-shaped pit	.40	560	15.0	65	.20	26.8	
C132	Laguna	open-profile pit	.68	618	10.1	61	.26	16.3	
Lag-H1	Laguna	sheet midden		975	15.6	150	.06		
Late Tezoquipan/Tenexac									
A103-1S									
B41-1S	Laguna	open-profile pit	.02	18	.27	1	.00	15.0	
B47-2S	Laguna	house remains	.65	123	1.90	13		15.4	not screened, not analyzed
Unique assemblage, not assigned to phase									
C133	Laguna	open-profile pit	.88	1,067	23.9	61	.15	17.4	
Tenexac									
A109-2S	Laguna	ditch	.23	787	11.3	108	.02	14.4	
A110-2S	Laguna	sheet midden	.14	612	8.2	83	.08	13.4	
Lag-D1	Laguna	sheet midden	1.54	4,413	49.1	518	.03	11.1	
Lag-D2	Laguna	sheet midden	2.15	3,852	43.5	439	.05	11.3	
Lag-H2	Laguna	sheet midden	9.49	3,462	55.0	312	.03	15.9	H1-N
Lag-H3	Laguna	sheet midden	.45	697	4.8	44	.00	6.9	
Tenexac?									
B70-4S	Laguna	in front of platform	1.08	359	5.14	45	.16	14.3	not screened, 78% of rims analyzed

[a] Completeness index is the proportion of rim sherds constituting 15 percent or more of the original mouth of the vessel. (Measured rims comprising less than 5 percent of the original mouth are treated as unmeasurable to minimize inter-observer differences.)

[b] Average sherd weight is the weight of sherds (in grams) divided by the number of sherds.

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CHAPTER 9

Pottery: Description and Typology

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WE HAVE PURSUED four basic goals in the analysis of pottery from the excavations. Chronological concerns are of overriding importance. Since sherd content is our primary means of identifying the age of a feature or other deposit, we have sought to create a classification that would be sensitive to change in the ceramic assemblage at as fine a resolution as possible. We are also interested in questions of function, from the uses of specific forms to the composition of the entire pottery assemblage in use at a particular moment. A third topic is pots as instruments or indices of social relations, while the fourth is the symbolism of decoration on the pots.

In this chapter we present our classification of the collection, including, wares, forms, decorative schemes, and types. Ceramic complexes/phases are introduced briefly here and discussed further in Chapter 11. Although chronological concerns are particularly salient in our presentation, this same classification will be used in the consideration of function, social relations, and symbolism to be presented in subsequent volumes.

The classification presented in this chapter started out as three separate studies of different ceramic assemblages from the four sites excavated. Each study followed a different set of conventions and a slightly different logic, due to the variable nature of the refuse at each site and, above all, the disparate priorities of different ceramic analysts participating in the project. We registered totals of 68,783 sherds from excavations at Amomoloc, 20,896 from Tetel, 6,668 from Las Mesitas, and 96,903 from La Laguna in excavations carried out through 2004. All studies concentrated on a subset of these totals, composed of pottery from secure Formative contexts, and concentrated primarily on rim sherds, supports, and those body sherds that were anticipated to be time sensitive. Jennifer Carballo developed her classificatory system to study pottery from Amomoloc and Tetel, with 7,872 and 2,670 rims, respectively. Paloma Diez de Sollano studied 862 rims from Las Mesitas, while Rodríguez and Borejsza started by studying 2,093 rims from the La Laguna excavations described in Chapter 7. As Diez de Sollano's classificatory system turned out to be difficult to integrate with the other two, the Las Mesitas assemblage was reclassified by Rodríguez using the system developed for La Laguna. The two remaining classificatory systems were then integrated; the resulting system was used by Lesure and Rodríguez to study 1,500 rims from the La Laguna excavations described in Chapter 6. We have also included in this chapter analyses performed by David Carballo of 1,095 rims from 13 features and other deposits excavated in the project at La Laguna under his direction, which began in 2005. These were performed using an evolving version of Rodríguez and Borejsza's classificatory system and were then translated into the hybrid system used in this volume.

The descriptions in this chapter are based primarily on the subset of analyzed sherds that constitutes the Chronological Sample (see Chapter 8). Statistics provided in the discussion of types and vessel forms are also derived from that sample.

ANALYTICAL ORIENTATION

In devising the classification presented in this chapter, we have followed five basic principles. First, we take a conservative orientation toward previous work on materials comparable to ours, accepting precedents in classificatory structure and specific nomenclature where appropriate given the scale of our research focus, our own orienta-

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tion toward and convictions concerning classification, and the detail with which precedents have been published. Our attention to potential precedents is focused on reports of collections very close to ours in space and time (Formative Tlaxcala), falling off rapidly with spatiotemporal distance. Second, in keeping with a common practice in the study of ancient Mesoamerican ceramics, we have made "types"—based on attributes of surface finish, decoration, and paste—the basic building blocks of our classification, sacrificing to some extent considerations of vessel form. Third, we have taken as axiomatic that variation in ceramic vessels was culturally and historically specific. We have therefore worked at designating as types units that exhibit culture-historical specificity and integrity—for instance, their changing frequencies take the forms of battleship curves. Our fourth principle is that all of the above—the following of precedents, the emphasis on types, and concerns of chronology—should not lead to a classification that inhibits social analysis of the assemblage. We actually have not found this principle difficult to pursue in conjunction with the others articulated here. Our social analyses, to be presented in subsequent volumes, will draw on vessel forms, decorative motifs (introduced briefly in this chapter), measurements of vessel dimensions, observations of use-wear, and patterns of breakage and discard in different contexts (none of which is dealt with here). We present variation in vessel form at some length in this chapter but focus on time-sensitive variation. Our fifth principle is that the classification should be replicable in that different investigators can successfully distinguish its basic units in actual sherd collections that vary in their states of preservation. However obvious this principle might seem, it required extended analytical attention and ended up shaping the final form of our classification in significant ways.

In the following paragraphs, we give further attention to our third principle (culture-historical specificity), identify our immediate predecessors and the precedents we draw from them, and describe the challenges we encountered in creating reliably identifiable types. We discuss certain helpful concepts we have derived from Gifford (1976) and briefly characterize the structure of our classification.

Gifford's (1976:9) definition of a type as "a ceramic unit that is recognizably distinct as to certain visual or tactile characteristics" and that "is indicative of a particular category of pottery produced during a specific time interval within a specific region" aptly captures our criterion of culture-historical specificity. The common binomial nomenclature consisting of an arbitrary label (drawn from a local place- or family name) followed by a descriptive term—for example, Ardillas Black—is well suited to types defined as temporally and geographically specific units. We therefore adopt that practice here. An important theme in Gifford's definition is that a valid type should refer to something real in the past ("a particular category of pottery produced during a specific time interval"). We do not take this to imply experiential reality of the category for particular individuals in the past. Successful types need not correspond to categories perceived by the original makers and users because a different aspect of prehistoric reality is more salient here: the coherence of ceramic paste, surface finish, and decoration in long-term traditions of making that extend considerably beyond the experience of any particular individual. We assume that traditions of making at that scale take the form of battleship curves. Our primary tool for assessing the validity of units proposed as types is therefore that their changing frequencies should exhibit the forms of battleship curves (or segments thereof). The types we have devised achieve that goal with varying levels of success, as we note in the type descriptions.

Three previous works have examined Formative pottery from Tlaxcala. Snow (1966), working in what was then a largely unknown region, focused on major distinctions such as Formative versus Classic. He identified "wares" based on paste and general characteristics of surface finish; those were subdivided into "types" based on slip color or other attributes of surface modification. Snow identified a single ware for the Formative period—Laguna—and used the corresponding label in each type name: Laguna Plain Incised, Laguna White, and so on. We agree with Snow that a single ware predominates in the study region throughout the Formative, and we adopt Snow's name for it. We also accept his name for the most prominent type at the site of La Laguna: Laguna Red. Since it would be too confusing in a work focused on the Formative to label all types Laguna, we introduce new names for other types even if they clearly match units identified by Snow.

The most comprehensive works on Formative Tlaxcala are those of García Cook and Merino Carrión (1988, 1989; Merino Carrión 1989). We have been able to recognize their four Formative ceramic complexes (Tzompantepec, Tlatempa, Texoloc, Tezoquipan) and the shift to their Classic-period complexes (Tenanyecac/Teotihuacan). We rely heavily on their Formative complexes in building our chronology (Chapter 11). García Cook and Merino Carrión named their types after the corresponding phase—for example, Tzompantepec Blanco Amarillento, Tlatempa Blanco, Texoloc Blanco, Tezoquipan Blanco. We think it is a mistake to name types after phases, since that practice will create potentially unwarranted assumptions concerning extensions through time of individual types. As a result, we identify far fewer types. For instance, we assign all four of those white groupings just mentioned to a single type, Yauhtentzi White.

What García Cook and Merino Carrión seem to have done to differentiate Tlatempa Blanco from Texoloc Blanco or Texoloc Rojo from Tezoquipan Rojo is to rely heavily on vessel form in addition to surface treatment and paste. We have been tempted to make similar distinctions, since there are significant, readily identifable changes of form in what we lump together, for instance, as Yauhtentzi White. The problem is that some forms are diagnostic whereas others are not. So some sherds could be identified defini-

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tively as Tlatempa Blanco or Texoloc Blanco, but others could be assigned to those groupings only with an appeal to evidence beyond what was observable on the object itself (stratigraphy, association with more diagnostic forms, or—dangerously—presupposition). We prefer Cyphers's (1987) practice of identifying, for important, long-lasting types, the mix of forms characteristic of each phase or subphase. From García Cook and Merino Carrión we therefore adopt a set of ceramic complexes and the basic structure of their succession through time, but we define types differently.

Serra Puche et al. (2004) describe ceramics from the major Formative center of Xochitécatl in the northern Puebla-Tlaxcala Valley. That site is only 27 km from our site of Las Mesitas, and the material seems very similar to ours. Because of our choice of binomial format, we label types differently, but our major types can be directly associated with particular units described for Xochitécatl. (See individual type descriptions for details.) The larger structure of our chronology looks rather different than that described for Xochitécatl, largely because we identify García Cook and Merino Carrión's Formative complexes, whereas Serra Puche et al. (2004) propose a rather different sequence, linked to construction stages at that center. The lack of correspondence at this higher level would seem surprising given material so closely related at the level of the type. In our assessment, the ultimate reason for the discrepancy between García Cook and Merino Carrión (1988) and Serra Puche et al. (2004) is a flat segment on the radiocarbon calibration curve between 800 and 400 cal B.C., which can considerably confuse efforts to construct chronologies for the first millennium B.C. That point is discussed further in Chapter 11.

From our basic orientation toward ceramic classification and from precedents in our region, we therefore derive a system of wares based on paste, firing, and techniques of manufacture, ideally subdivisible into types based primarily on surface treatment and decoration (more on that in a moment). Wares and types are to be organized into a series of ceramic complexes and, in turn, into phases bearing the same names as the complexes. A single ware (Laguna) predominates across most of the occupation, with a significant change under way by the first century A.D. Except for Laguna Red and some related variants, all our types have required new names in binomial format.

Given the above, the nature of the groupings of sherds that will be designated types is still undetermined. It is at this point that the principle of replicability becomes particularly salient in determining the final form of our classification.

There were two important points for which replicability posed a challenge. First, given that we have insisted on assigning sherds to types based on characteristics observable in different kinds of assemblages, we rejected vessel form as a criterion for typing sherds, as mentioned above. Fellow archaeologists in Central Mexico work with assemblages that range from highly fragmented and abraded sherds from surface collections to complete vessels from grave offerings. At the latter end of the continuum, one has the liberty to choose whatever characteristics turn out to be most diagnostic for chronological purposes; at the former one is perforce limited to rough subdivisions of surface finish or even paste (see Arnold 2003). Since our assemblages come from excavated contexts, most of them of relatively intact refuse, we can probably say more about vessel form than is possible under "average" research conditions. If we choose not to do so in this chapter, it is in part because we follow the tradition of Mesoamerican archaeology to give precedence to surface finish over any other axis of variation. However, another consideration is that while vessel form is highly time sensitive, there is also considerable synchronic "noise" in the sense of variation from one refuse context to another—within the same phase—in the mix of forms represented. Surface finish, by contrast, proves more stable in this regard.

The downside of our emphasis on surface finish is that in the Tlaxcalan Formative, most types persist for two or more phases and the larger color groupings (whites, browns, reds) are present throughout the sequence, merely changing in frequency. As a result of the approach taken, our major types persist for most of the Formative occupation—as in Snow's classification—and differences between phases are distinguished primarily based on changes in relative frequency.

Many attributes of vessel form are more time sensitive than surface finish. Unfortunately, they often involve observations (diameter-to-height ratio, flat versus rounded bases, simple or composite silhouettes) that can best be quantified only after extensive refitting of vessels. In our case, refitting opportunities were fully exploited only at La Laguna, among the ceramics studied by Rodríguez and Borejsza. In considering the entire collection, we have resorted to more qualitative assessments of the relative prominence of different base forms and silhouettes. In the case of individual serving vessels in particular, Rodríguez and Borejsza feel that each phase has its "type fossil" whose frequencies drop abruptly on either side of the phase in question. These are briefly mentioned where we explain criteria for phasing entire ceramic assemblages in Chapter 11.

A second serious issue concerns relations between the concepts of type and ware. Even though an important change in ware (from Laguna to Metl) was clearly under way toward the end of the occupation, the identification of individual sherds as to ware had a low replicability in that different authors often classified them differently. We think this is because both wares were made of local clays, with differences resulting from changes in normative preparation and firing techniques that were nevertheless not absolutely consistent in either era. An important point in terms of the structure of the classification is that if wares are to be subdivided into types, then *ware* is a distinction made early in the decision tree of the classification. As a

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result, if ware designations are somewhat unreliable, then type designations would also be unreliable.

Our solution has been to disarticulate *ware* and *type* and to organize types according to a different criterion, the type-class, which we derive from Gifford (1976). What we are particularly drawn to is Gifford's account of ceramic analysis as an ordered sequence of steps in which concepts become more relevant as one moves from primary observations on the sorting table toward synthesis. We draw from Gifford very selectively. He ends up developing what is, in our view, the baroque and unwieldy formulation of type:variety-mode. In keeping with many previous descriptions of Formative pottery from Central Mexico, we do not designate formal varieties (though in some cases we signal close relations between types by using the same proper noun in the type name: Yauhtentzi White, Yauhtentzi Red-on-White).

What we find particularly helpful is Gifford's attention to the situation of the analyst in front of the sorting table and to analysis itself as a differentiated series of concrete steps. A type-class is "an opening or preliminary move in ceramic classification" in which the analyst recognizes the "general overall markers" of types (Gifford 1976:16). Type-classes are based on obtrusive characteristics of *a particular collection of sherds*. A basis for preliminary sorting, they persist throughout the analysis to end up important in the definition of types. They often appear in the type name itself: Red-on-White, Polychrome, and so forth.

We prefer *type-class* to *ware* as a higher-level scheme for ordering types because it avoids any presupposition of a hierarchy of importance in which paste is placed above surface finish. Instead, features that will constitute the type-classes—which may be attributes of paste, surface finish, or decoration—emerge as salient divisions of a particular assemblage during the process of sherd sorting. Thus by definition they have high replicability—or at least as high as possible to establish for a given assemblage. Further, they provide a helpful intermediary step in the definitions of types. Type-classes are claims about the readily observable characteristics of some particular collection of sherds. They rely on no assumptions about culture-historical specificity or the temporal form of the battleship curve, both of which are instead central concerns in the definition of types. Type-classes provide the raw material from which the analyst attempts to construct types with culture-historical specificity. The concept of type-class suits our dilemma concerning wares quite effectively. For instance, our two brown types (Mesitas and Metl) of different but not always distinguishable wares can both comfortably fit in the same higher-order unit, the type-class Burnished Brown and Black—a unit that is highly replicable.

We find some justification for our decision to set aside any presumed hierarchical relation between wares and types in Culbert and Rands's (2007) recent call for ceramic analysts to consider multiple classifications. Although we retain the privileging of types based on surface finish as a central focus of our classification—in keeping with studies of comparable materials from Central Mexico—we devote separate sections in this chapter to classifications of wares and vessel forms. We also provide an overview (though not an exhaustive classification) of decoration.

CERAMIC COMPLEXES

A ceramic complex is a set of co-occurring ceramic attributes and patterns that is delimited in both space and time. Ceramic complexes are the primary basis for defining phases, and indeed all our phases take their names from the associated complexes. It is useful to maintain a distinction between phase and ceramic complex for two reasons. First, ceramic complexes are not the only basis for defining phases; figurines are important as well (Chapter 10). Second, while our work largely validates the Formative ceramic complexes identified by García Cook and Merino Carrión (1988) and supports the ordering of those complexes in a temporal series, we propose some radical revisions to the dating of the corresponding phases. Thus, while our "complexes" appear to match those identified by García Cook and Merino Carrión pretty well, our "phases" are quite different: Tzompantepec from 900 to 800 B.C. instead of 1700 to 1200 B.C., Tlatempa from 800 to 650 B.C. instead of 1200 to 800 B.C., and so forth. (See Chapter 11 for further discussion.)

We identify five ceramic complexes between 900 B.C. and A.D. 200: Tzompantepec, Tlatempa, Texoloc, Tezoquipan, and Tenexac. The first four we have adopted from García Cook and Merino Carrión. The last, Tenexac, is a new name, which we assign to the complex in use at La Laguna during the first and second centuries A.D. We distinguish "early" and "late" for two of the complexes. The proposed division of Tlatempa is based on analysis of ceramics and figurines from Amomoloc and Tetel. The division of Tezoquipan is no more than a working hypothesis and is based on stratigraphy and radiocarbon evidence from La Laguna. We actually do not have a good understanding of the ceramic patterns associated with Late Tezoquipan because of a lack of sufficient samples of primary or secondary refuse. The following overview focuses on general characteristics of the complexes. A superficially similar discussion of the material attributes of phases in Chapter 11 examines patterns at the level of the individual refuse sample. The latter discussion includes figurines as well as pottery. It is also illustrated with a plate for each phase.

Our Tzompantepec sample derives from the fill of a single bell-shaped pit, Feature A46, at Amomoloc. Among the service wares, white slips predominate (Yauhtentzi White, Ceniza White). Black and brown are less prevalent yet are more common than differential firing. There are no red-slipped vessels, although a few are decorated by bands of red paint. In comparison to the later complexes, ollas and tecomates are common. The ollas have burnished exteriors and outcurving necks with exteriorly thickened

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rims. Open dishes or bowls mainly have rounded walls (Form B1) or outsloping walls with direct rims (Form B2). The latter form is subsequently rare until late in the sequence (Tenexac). A few outsloping-walled bowls had flat bases, but most bases were rounded.

The Tlatempa complex is abundantly represented at both Amomoloc and Tetel. Among the service wares, white slips predominate (Yauhtentzi White). Red-on-white is also common (Yauhtentzi Red-on-White). Brown and black vessels are more common than red. The characteristic vessel form is a dish with a rounded base and an outsloping everted rim with an interior ledge (Form B3-6). Post-slip incised and/or excised designs appear on the interior between this ledge and the lip. Ollas contrast with those of the Tzompantepec complex in that they have direct rather than thickened rims.

Our Texoloc sample derives from Tetel, Las Mesitas, and La Laguna. In the service ware, white and red-on-white are less prominent and decoration tends toward incising rather than excising. The brown slipped and/or burnished type, Mesitas Brown, reaches the height of its popularity. Red and red-on-brown vessels are also important (Laguna Red, Potrero Red-on-Brown). Gazca White-on-Red, unknown in Tlatempa, appears. The characteristic serving vessel (Form B3-4) is a bowl with a rounded base and a downcurving everted rim. There are also bowls with composite silhouettes, Form B6. Texoloc ollas are primarily unslipped and scraped, often with bands of red slip on the rims and bodies. The characteristic olla neck is thicker than in the Tlatempa complex.

Our Tezoquipan sample derives entirely from La Laguna, and our investigation of the complex has been hindered by the strange occupation history of that site. We have excavated numerous Tezoquipan features that in our assessment date between 500 and 400 B.C. The understanding of Tezoquipan material culture presented in this volume derives from the "Early Tezoquipan" represented in those features. Between 400 B.C. and 100 B.C., La Laguna was drastically depopulated or abandoned altogether. Around 100 B.C., occupation at La Laguna expanded once again. We have encountered considerable frustration trying to identify ceramic patterns and attributes characteristic of the first 150 to 200 years of this reoccupation—in other words, through A.D. 50 or perhaps A.D. 100. Our best assessment is that the early reoccupation ceramic complex should be understood as "Late Tezoquipan," but we are not yet able to describe it. (See Chapter 11 for a discussion.)

For the Tenexac complex, we have a large sample from La Laguna, mainly from toss-middens and architectural fill rather than from pits. As a result, carry-ups from the earlier occupation are more of a problem than for the other complexes. Tenexac corresponds to the last 100 to 150 years of occupation at the site, from A.D. 50 through A.D. 150 or 200.

The (Early) Tezoquipan complex is characterized by a dramatic rise in the ratio of red and red-and-scraped vessels (Laguna Red, Laguna Red-and-Scraped) to brown and red-on-brown vessels (Mesitas Brown, Potrero Red-on-Brown). Xalmonto Red-and-White is also very prominent. Composite silhouettes predominate among bowls and dishes. Dishes with downcurving everted rims, a Texoloc diagnostic, are present only in minor quantities or absent altogether. Ollas have outcurving rims with smooth interior profiles and are generally similar to those of the Texoloc complex.

In the Tenexac complex, brown slips predominate, with the tone ranging from dark to light (Metl Brown to Metl Burnished Buff). There is little in the way of incised decoration, though polychrome vessels are present in low numbers. Sherds are better fired than in previous complexes and have a characteristic waxy feel. Thin-walled dishes or bowls with outsloping (or outcurving) sides, direct rims, and flat bases predominate. This relatively simple form is very distinctive in the collection; it is virtually absent in the Tlatempa, Texoloc, and (Early) Tezoquipan complexes. Ollas with short, outcurving rims often have a break in the interior profile of the neck. There are also tall-necked ollas in burnished buff. Both of these last are distinctive Tenexac features.

CLASSIFICATION OF WARES

Five wares are identifiable based on characteristics of the paste visible either to the naked eye or at low magnification (10x). The differences are due to variation in paste composition, inclusions, clay preparation, and/or firing conditions. Fermín, Orange, and Ceniza wares are quite rare and are also distinctive in terms of paste color and texture; the first is imported to the study region, and the other two may be as well. It is not hard to distinguish those three from Laguna/Metl. The distinction between Laguna and Metl proves to be more of a challenge. Both seem to be locally made. Metl, the finer ware, first appears in the Xilomantla and De Haro types and gradually becomes more prominent. The two wares grade into each other. Although the distinction between them is chronologically significant, we found that, sherd by sherd, the distinction had a low replicability among analysts.

Laguna Ware

Laguna ware is the predominant ware in the collection from the Tzompantepec through Tezoquipan phases. Distinguishing features are the brown paste and the matte finish of slips; pastes seem to be less well fired than is characteristic of Metl ware. Paste color is reddish brown (5YR 5/4, 5YR 6/4, 5YR 5/6, 5YR 6/6, 2.5YR 5/4, 2.5YR 6/4, 7.5YR 5/3, 7.5YR 4/1) ranging to yellowish brown (2.5Y 7/4) and dark reddish gray (5YR 4/1, 5YR 4/2). Dark gray or black cores (5YR 2/1, 10YR 4/1) are common. The texture of the paste is semicompact and soft (5 percent; 1 mm porosity) (see Rice 1987:349). Inclusions include quartz

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and other minerals, likely volcanic ash and feldspar. The surface finishes tend toward matte rather than glossy. Two Laguna ware sherds dropped against each other usually produce a dull "clunk" rather than the sharp "clink" characteristic of Metl ware sherds. Types: Yauhtentzi White, Yauhtentzi Red-on-White, Laguna Red, Laguna Dark Red, Laguna Red-and-Scraped, Tejales Incised, Xalmonto Red-and-White, Gazca White-on-Red, Amomoloc Plain, Zahuapan Coarse, Mesitas Brown, Mesitas Fine Brown, Pascuala Black-and-White, Palmas Black-and-White, Ardillas Black, San José White-and-Brown, Potrero Red-on-Brown, Potrero Streaky Red-on-Brown, and Laguna Dark Red-on-Buff.

Metl Ware

Metl ware is the second-most-common ware in the collection and is particularly characteristic of the Tenexac phase. Distinguishing features include brown paste, a waxy feel to burnished surfaces that is rare in Laguna ware, and burnished surfaces that are more glossy than matte. Sherds tend to be thin walled, hard, and better fired than is typical in Laguna ware. Paste is brown (7.5YR 6/4, 7.5YR 7/4) occasionally very light brown (10YR 7/3), or orange (2.5YR 6/8). Gray cores are sometimes present and seem to be relatively common in some of the types, particularly Metl Burnished Buff. Two Metl ware sherds dropped against each other usually produce a sharp "clink" rather than the dull "clunk" characteristic of Laguna ware sherds. Types: Metl Brown, Metl Burnished Buff, González Red-on-Brown, Xilomantla Polychrome, De Haro Polychrome, and Yano Polychrome.

Fermín Ware

Fermín ware is rare but is distributed across multiple phases from Tlatempa through Tenexac. It probably represents an import to the study region. Its distinguishing characteristic is a generally homogeneous light gray color throughout the sherd matrix. Pottery with such paste characteristics is referred to as "fine gray" in ceramic reports from Central Mexico. Well-burnished surfaces tend to be quite glossy. Sherds are often hard and produce a "clink" when dropped against each other, though we do have a couple of sherds in which the paste is crumbling. Type: Fermín Fine Gray.

Ceniza Ware

Rare in the collection, Ceniza ware is confined to the Tzompantepec and Tlatempa phases. The most distinguishing characteristic is its color and texture: light gray with white speckles. To the naked eye, the paste resembles cement. Paste color varies between gray, light gray, and light brownish gray (10YR 7/1–5/1, 2.5Y 6/2, GLEY1[7/N]), though color can be difficult to determine because of the number of inclusions. Temper is crushed rock or tepetate, mixed with volcanic ash. The paste is semicompact with a porosity of 5 percent (1 mm). Fracture is irregular to the naked eye, but under magnification the paste composition is plate-like, a characteristic observed in none of the other wares in the collection. Type: Ceniza White.

Orange Ware

Rare in the collection, Orange ware is confined to the Tenexac phase. The paste is typically fine with volcanic ash or fine sand inclusions and is uniformly orange (2.5YR 6/6–6/8 and 7/6–7/8). Type: Apizaco Orange.

VESSEL FORMS

Included in the vessel form repertoire of central Tlaxcala during the first millennium B.C. were several ancient preparation and/or service forms in use since the earliest pottery assemblages of highland Mesoamerica (Marcus 1983a). Those included the tecomate (a neckless jar); the olla (a jar with a neck); the rounded-walled, rounded-based bowl or dish; and the kidney-shaped or bi-pinched bowl, essentially a rounded-walled bowl pinched in at two sides. All four of these forms persist throughout the occupation, though the incidence of tecomates declines by the Terminal Formative.

Among the more elaborate serving vessels, our assemblage straddles three successive multiphase traditions characteristic of Formative highland Mexico, though we glimpse the first and last at only the tail end and the inception of their spans, respectively. First is the flat-based dish tradition with roots in the initial Early Formative (Clark and Cheetham 2002; Coe 1961) but strongly represented in highland Mexico in the later Early Formative (Flannery and Marcus 1994; Niederberger 1987). Niederberger describes Tetelpan in the Basin of Mexico as transitional to the Middle–Late Formative rounded-based tradition, and Tzompantepec was probably correlated with Tetelpan (Lesure et al. 2006) or the initial Zacatenco phase (see Chapter 11). In our earliest phase, in other words, we glimpse the waning of that Early Formative tradition. The second tradition is that of the rounded-based serving vessels of the Middle and Late Formative period. Prominent in the Tlatempa and Texoloc phases are rounded-based dishes with outsloping sides and some sort of decoration or plastic modification to the rim. Some have composite silhouettes—that is, a break in the exterior profile involving a shift in the angle of the vessel wall—while others do not. The rounded-based tradition among serving vessels developed more strongly toward composite silhouettes in the Tezoquipan phase. The third tradition arose in the Terminal Formative; it represented a return to an emphasis on flat bases, outsloping or outcurving walls, and direct rims.

Our synthetic form classification is illustrated and described in Figure 9.1. We use alphanumeric codes for a hi-

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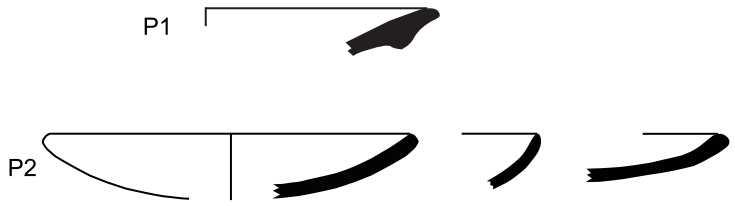
plates = P

Plates with low walls or none at all form a minor part of the assemblage.

P1 comal
Shallow plate, almost flat, with an exteriorly thickened rim or exterior flange just below rim. Rare in late Tenexac; unknown earlier. Probably used as a comal, to cook tortillas.

P2 plate
Plate with low walls, outsloping to slightly incurving, and direct rim.



dishes, bowls, and vases = B

Dishes, bowls, and vases, in a great variety of specific forms, make up the bulk of the collection.

B1 dish with rounded walls
Open dish with rounded walls and direct rim. Subdivided by base form.

B1-1. Rounded base, subhemispherical

B1-2. Flat base

B2 dish with outsloping walls
Open dish or bowl with outsloping to outcurving walls and direct rim. Subdivided by base form, presence of exterior shoulder, and curvature of walls.

B2-1. Rounded base

B2-2. Rounded base below an exterior shoulder

B2-3. Flat base

B2-4. Distinctly outcurving walls. Confined to the Tenexac phase.

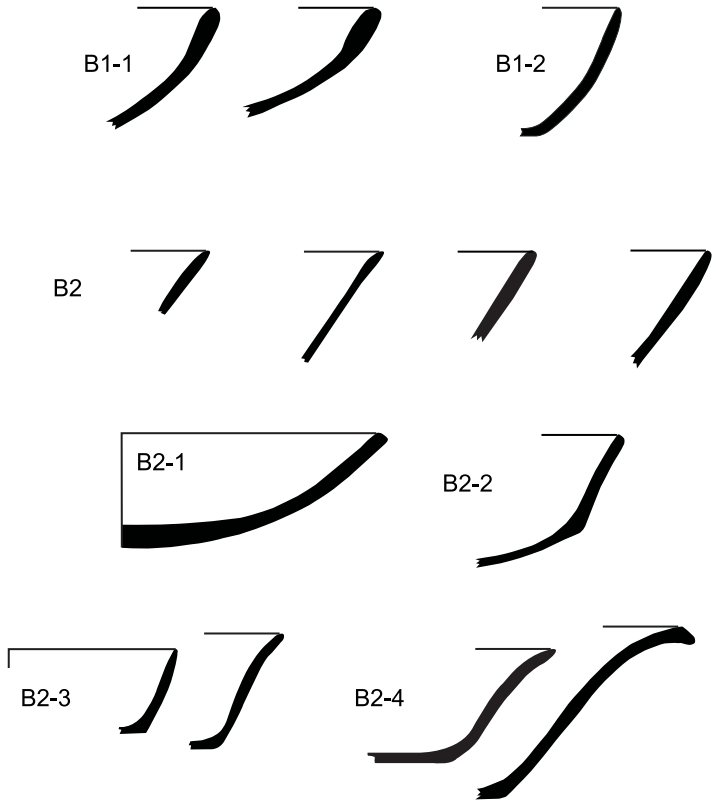


Figure 9.1. Vessel form catalog. *(continued on the following pages)*

erarchical form classification with two primary levels and up to two additional levels where needed. There are nine basic forms designated by letters: plates (P); dishes, bowls, and vases (B); ollas (O); tecomates (T); miscellaneous bottles and other jar-like forms (F); crude cylinders (Y); censers of various sorts (C), and lids (L). We have also identified various styles of vessel supports (S). Frequencies of forms P, B, O, T, and F, split by phase, are provided in Chapter 11 (see Table 11.7). In our analyses, we divided ritual vessels (forms C and Y) from food-related vessels (all other forms).

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B3 dish with modified rim
Dish or bowl with rounded to outsloping walls and modified rim. Bases seem overwhelmingly rounded, though in many cases base form is unknown. Some pieces had an exterior shoulder, but in those cases the walls above the shoulder were definitively outsloping; they did not tend toward the vertical as in the case of the composite silhouette bowl (B6). Subdivided by the form of rim modification.

B3-1. Dish or bowl with scalloped rim (not pictured)

B3-2. Dish or bowl with beveled rim. This category includes a variety of modes tthat were difficult for different investigators to reliably distinguish.

B3-3. Dish or bowl with thickened rim and horizontal, flattened lip.

B3-4. Dish or bowl with exteriorly recurved or downcurving everted rim. Diagnostic of the Texoloc phase.

B3-5. Dish or bowl with outsloping everted rim. True everted rims with a sharp break between the interior walls and the plane of the slightly outsloping or horizontal rim are relatively rare. Where there is thickening at the rim, the more appropriate category will usually be B3-6.

B3-6. Dish or bowl with outsloping everted rim and interior ledge. Interior thickening extends approximately 1–4 cm from the lip into the interior and ends with a distinct ledge where the rim meets the rounded or outsloping interior walls. There is usually incised or excised decoration on this interior rim. Diagnostic of the Tlatempa phase.

B3-7. Dish or bowl with exteriorly thickened rim.

B3-8. Dish or bowl with slightly interiorly recurved rim and lip thinning toward a point.

B3-9. Dish or bowl with rounded walls and notched lip (not pictured).

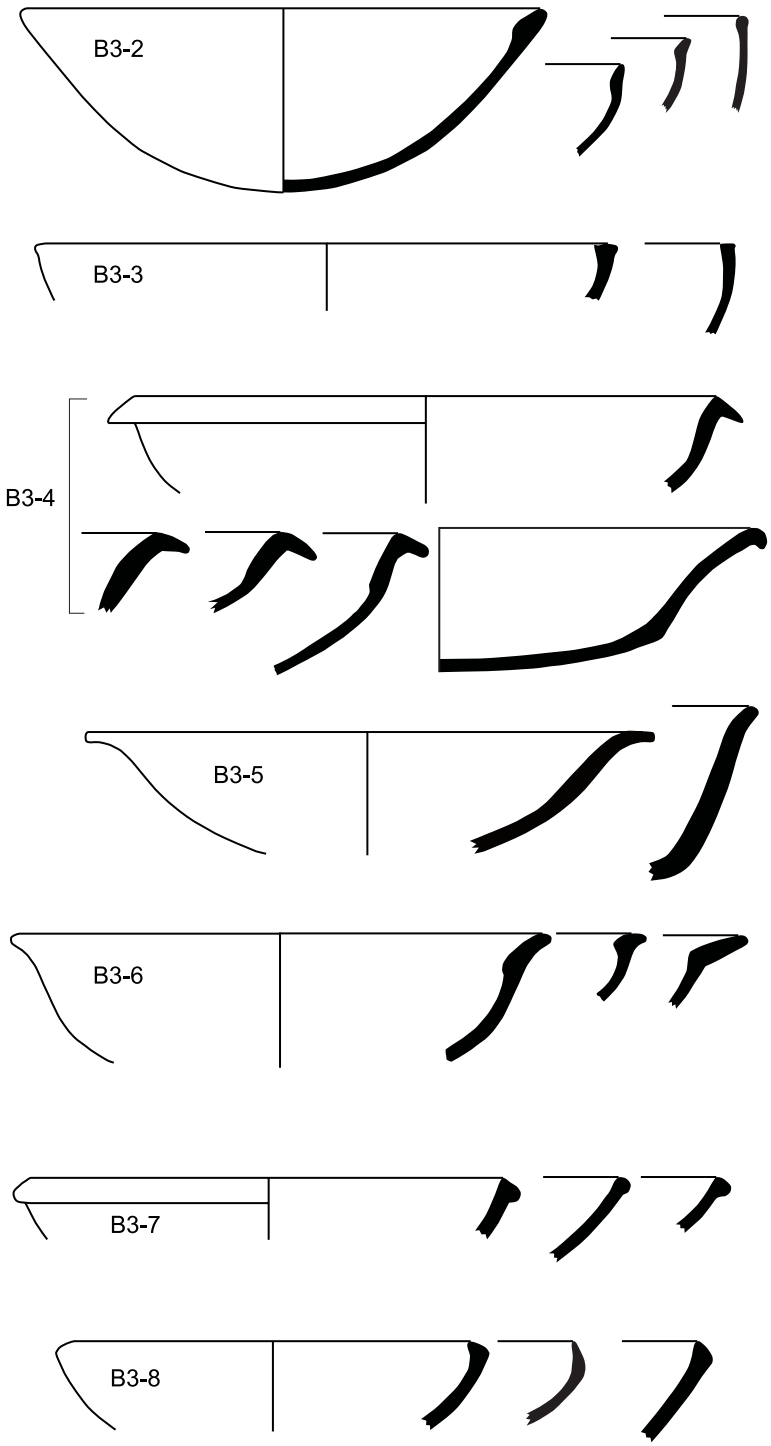

Figure 9.1. *continued*

Since the ritual forms will be reported in detail in Volume 3, they are given only cursory treatment in this volume.

Dishes, bowls, and vases, in a great variety of specific forms, treated here under the overarching category B, make up the bulk of the collection. The formal distinction between the three categories makes sense in concept, and the proportion of bowls to dishes—dishes with a diameter-to-height ratio between 3 and 5; bowls with that ratio between 1.5 and 3; vases with that ratio less than 1.5 (slightly modified from Sabloff 1975:23)—is time sensitive in the

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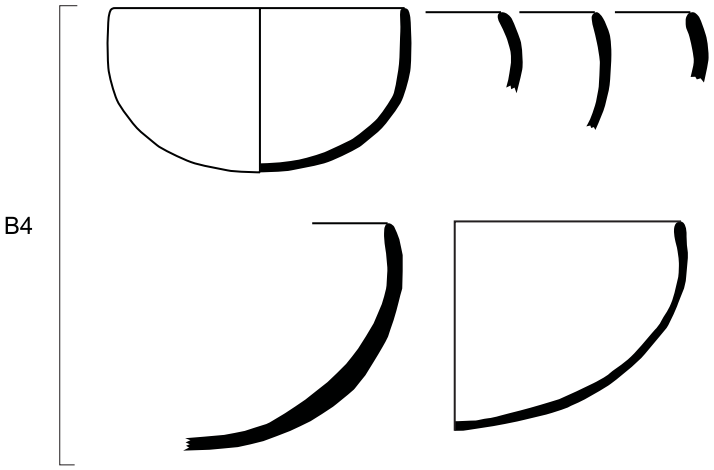
B4 hemispherical bowl
Hemispherical bowl with rounded walls, rounded base, and direct rim. A line tangent to the vessel walls at the rim should be approximately vertical.
B4 is similar in form to B1 but deeper; the distinction between the two had low replicability among investigators. In the chronological analyses (Chapter 11) we have pooled the two categories. Hemispherical bowls with beveled rims are included in B3-2.

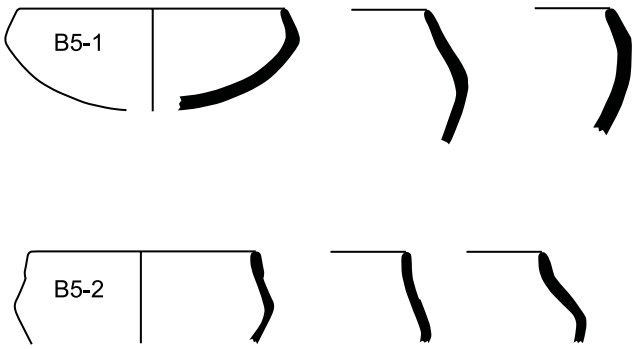


B5 restricted-rim bowl
Bowl with restricted rim, sometimes with an identifiable neck. Subdivided by neck or rim form. Where known, bases are rounded. Distinguished from tecomates (T) and ollas (O) by presence of slip or burnishing in vessel interior.

B5-1. Bowl with insloping or incurving walls and direct rim. With or without a shoulder; the latter is more common.

B5-2. Bowl with recurved, vertical rim. B9 may be similar, but in that case the rim is unrestricted.

B5-3. Bowl with insloping or incurving walls and recurved, outflaring rim. Differs from olla in that the interior is finished. Usually very large.



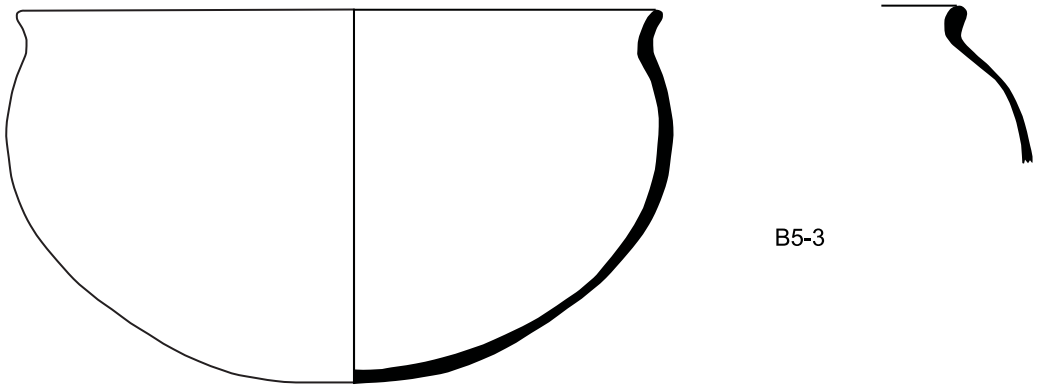


Figure 9.1. *continued*

Tlaxcalan Formative. Of the analysts studying our materials, Rodríguez, Borejsza, and David Carballo attempted to apply Sabloff's standards rigorously. However, numerous smaller sherds were necessarily identified as bowls or dishes by comparison with better-preserved specimens rather than on the basis of observable characteristics of the sherds themselves. As a result, in this chapter we treat the distinctions based on diameter-to-height ratios casually, and we sometimes use the term *bowl* in a general sense to refer to dishes, bowls, and/or vases.

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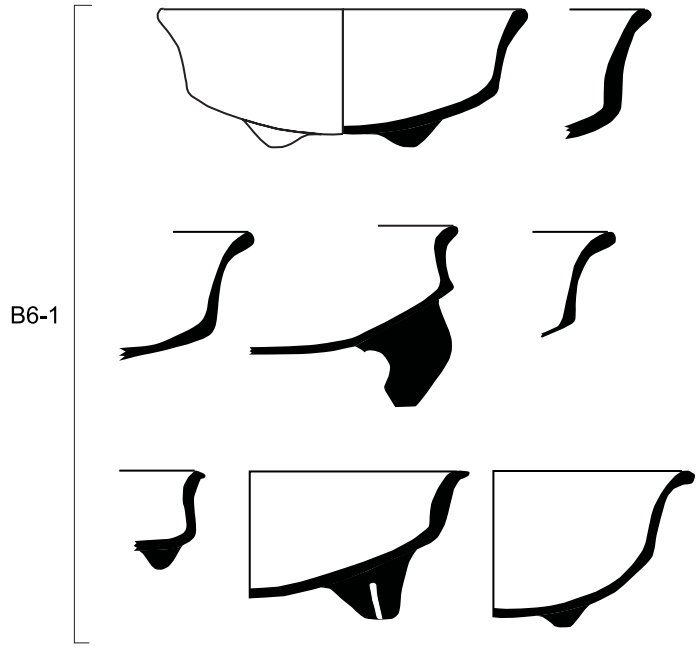
B6 composite silhouette dish or bowl

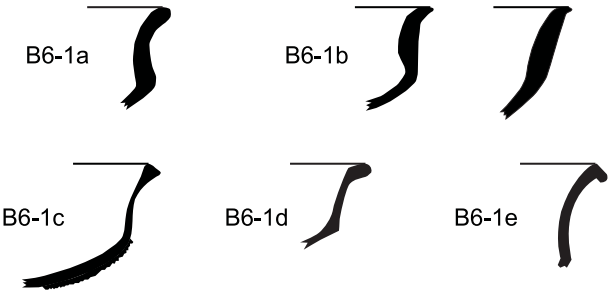
Composite silhouette bowl and dish. The base is round, and there is a distinct break (shoulder) in the vessel profile. At the shoulder, the orientation of the vessel wall tends toward the vertical rather than the horizontal. The collar (above the shoulder) usually comprises half or more of the vessel height from base to lip, excluding that contributed by any supports. Subdivided by size.

B6-1. Composite silhouette bowl or dish of individual serving size (rim diameter less than 28 cm). Collar oustloping to vertical; rim outcurved. Shoulder usually very distinct. Often tripod with hollow, hemispherical supports. A few have annular (pedestal) bases. May be subdivided by rim form:

B6-1a: rim unmodified
B6-1b: interior rim thickening
B6-1c: wedge rim
B6-1d: bevelled everted rim
B6-1e: exteriorly downcurved rim

B6-2. Shouldered bowl or dish significantly larger than individual serving size (rim diameter greater than 28 cm). Usually with no feet. Collar oustloping to vertical. Shoulder distinct.





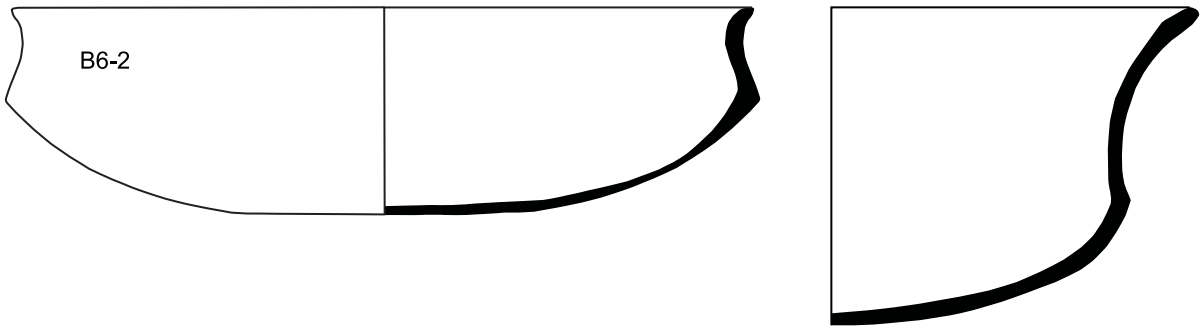


Figure 9.1. *continued*

DECORATIVE SCHEMES

In this section we note some of the general patterns of decoration in the assemblage as a whole and present a synthetic motif classification that covers the entire assemblage. Decoration of serving vessels in the early part of the sequence—particularly the Tlatempa phase—will receive more detailed treatment in Volume 3.

A brief word on terminology: we use the term *burnishing* rather than *polishing* and distinguish different de-

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B7 composite silhouette bowl with low shoulder
Deep composite silhouette bowl with a distinct shoulder low on the profile of the vessel. Collar insloping. Rim often thickened on exterior or interior.

B8 composite silhouette basin with high shoulder
Deep, composite silhouette basin with a rounded shoulder located relatively high on the profile of the vessel. Collar usually slightly insloping with outflaring or everted rim, occasionally with interior thickening.

B9 unrestricted bowl with vertical collar
Shouldered bowl with straight and vertical or near-vertical collar.

B9-1. Shallow bowl of individual serving size. Shoulder distinct and collar relatively low.

B9-2. Deep bowl, usually large, with collar tall in comparison to B9-1.

B10 vase or cup
Vase with sides approximately vertical. Subdivided by the form of walls. Rim diameter 15 cm or less. These vessels were probably used as cups, for the consumption of beverages.

B10-1. Vase with shoulder low on vessel profile. Walls above shoulder either concave or vertical with outcurving rim.

B10-2. Cup or vase with vertical walls. Base unknown.

B11 kidney-shaped bowl
Bi-pinched or kidney-shaped bowl with rounded walls.

B12
Very deep composite-silhouette bowl with direct rim. The height of the collar is greater than three times the height of the body, the corner point is blunted, and the bowl seems to have no feet. Usually associated with San José or Mesitas surface finish.

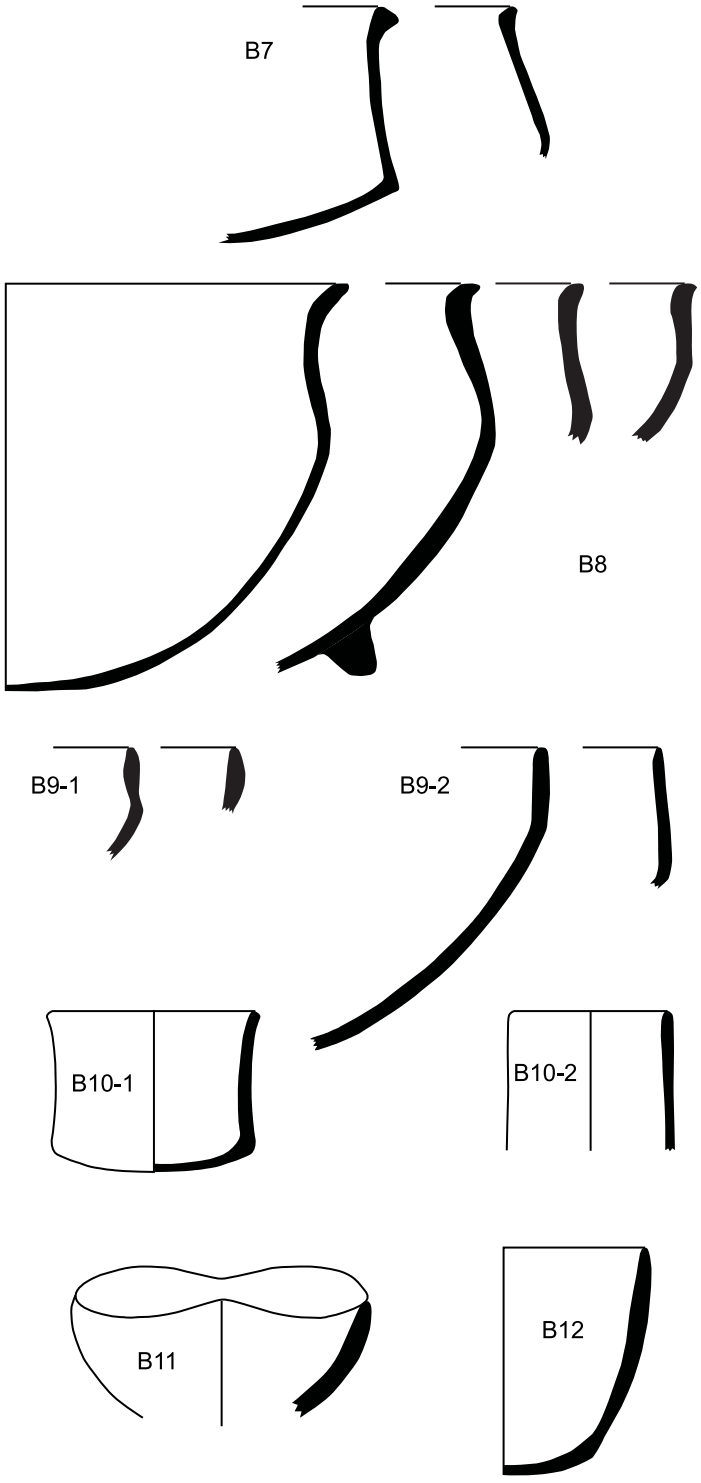

Figure 9.1. *continued*

grees with some qualifying adjective (roughly burnished, well burnished). We treat *incising* and *grooving* as synonyms, mainly sticking with the first of those terms. *Excising* involves the carving out of wide bands or designs on the vessel surface and is used in conjunction with incising in several of the types.

There are seven basic schemes for the decorative elaboration of vessel surfaces beyond burnishing and monochrome slipping. (1) Bichromes were sometimes produced by differential slipping of adjacent areas (Xalmonto Red-

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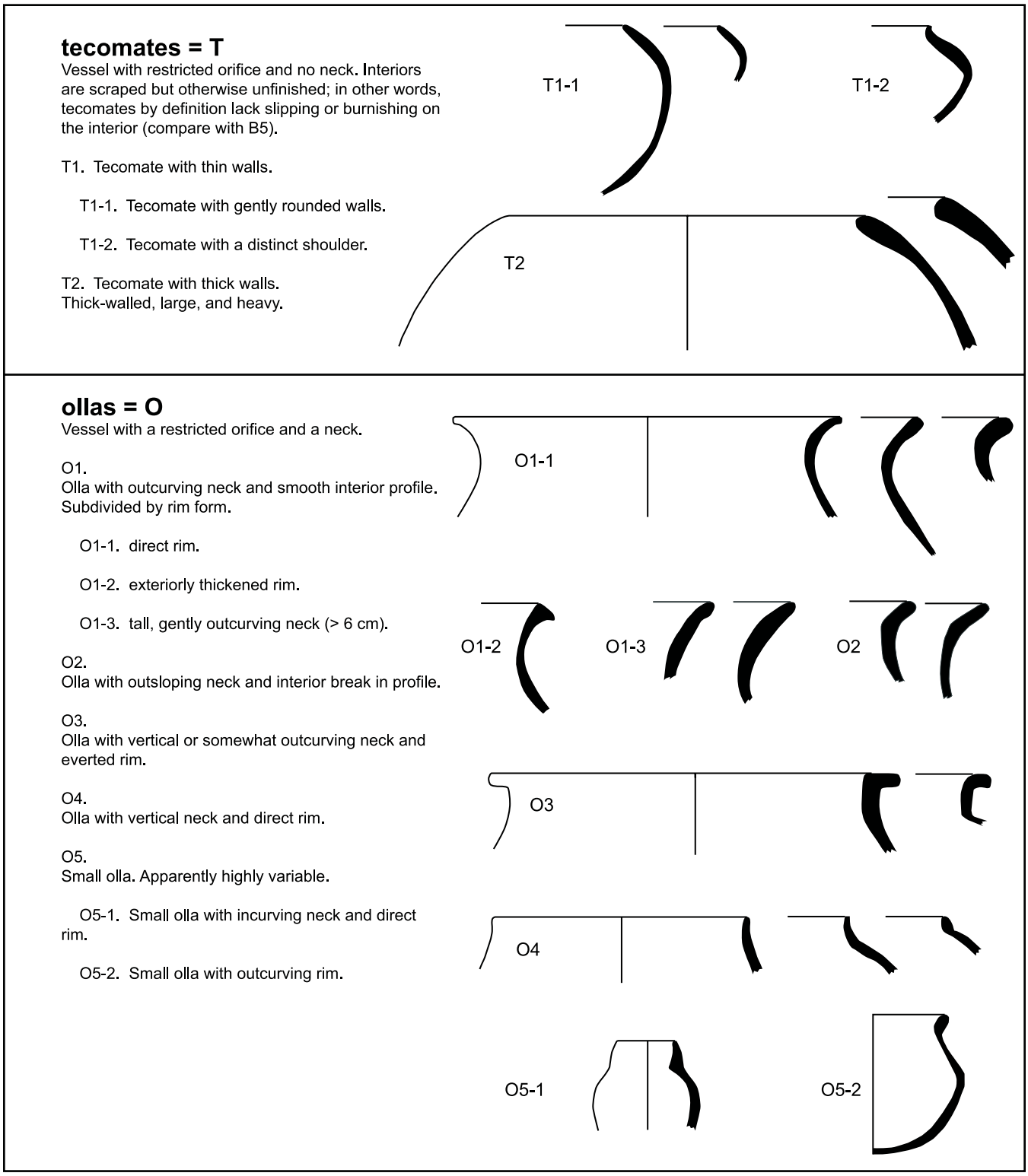

Figure 9.1. *continued*

and-White, San José White-and-Brown) or by leaving parts of the vessel exterior scraped and unslipped (Laguna Red-and-Scraped). (2) A more pervasive alternative was to apply a slip—always red in our collection—atop a burnished or slipped and burnished surface; the slip in this case was usually applied in relatively wide bands, most often on or near the rim (Yauhtentzi Red-and-White, Potrero Red-on-Brown, González Red-on-Brown). (3) One technique for the production of surface color contrasts was differential smudging, which often produced a cloudy

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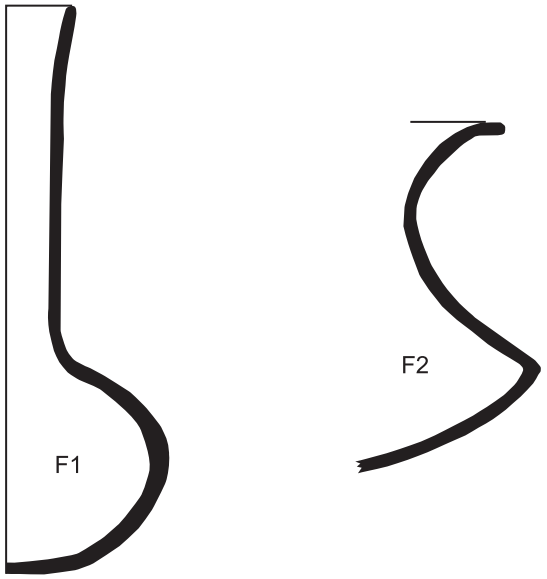
miscellaneous bottles and jars = F

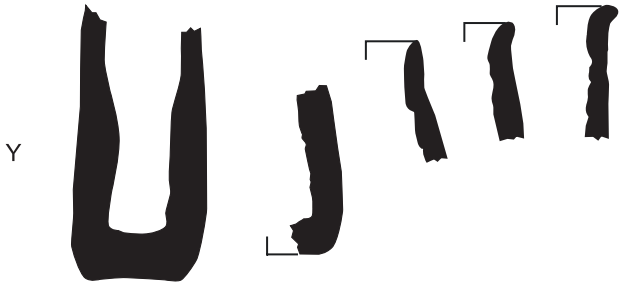
F1
Bottle with tall vertical neck.

F2
Shouldered jar with rounded base. Shoulder sharp and low on profile. Walls above shoulder deeply concave.



crude cylinders = Y

Y
Tall, narrow, cylindrical vessel 6–9 cm in diameter and apparently more than 15 cm tall. Crudely finished, they were probably not used for food or drink; they may be ritual paraphernalia of some kind.



censers = C

C1 effigy censers
Effigy censers that lack any platform or container for the placement of coals or incense. The vessels are open at the base and have holes in the sides or top for the escape of smoke. Subdivided by shape.

C1-1. Conical. The effigy head is a small, usually solid mass attached atop a body that is generally conical. Perforations appear on the sides rather than in or around the effigy head.

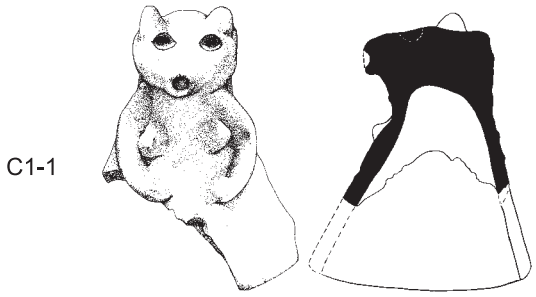


Figure 9.1. *continued*

white-and-black surface or a pattern such as interior black, exterior white (Pascuala Black-and-White, Palmas Black-and-White). (4) With a few exceptions, incising throughout our collection is post-slip. Particularly on white and red surfaces the intent seems to have been to create a visual contrast between the color of the overlying slip and a design in the color of the underlying paste (Yauhtentzi White, Yauhtentzi Red-and-White, Laguna Red, Tejales Incised, San José White-and-Brown). However, incising appears on numerous other types as well (Mesitas Brown,

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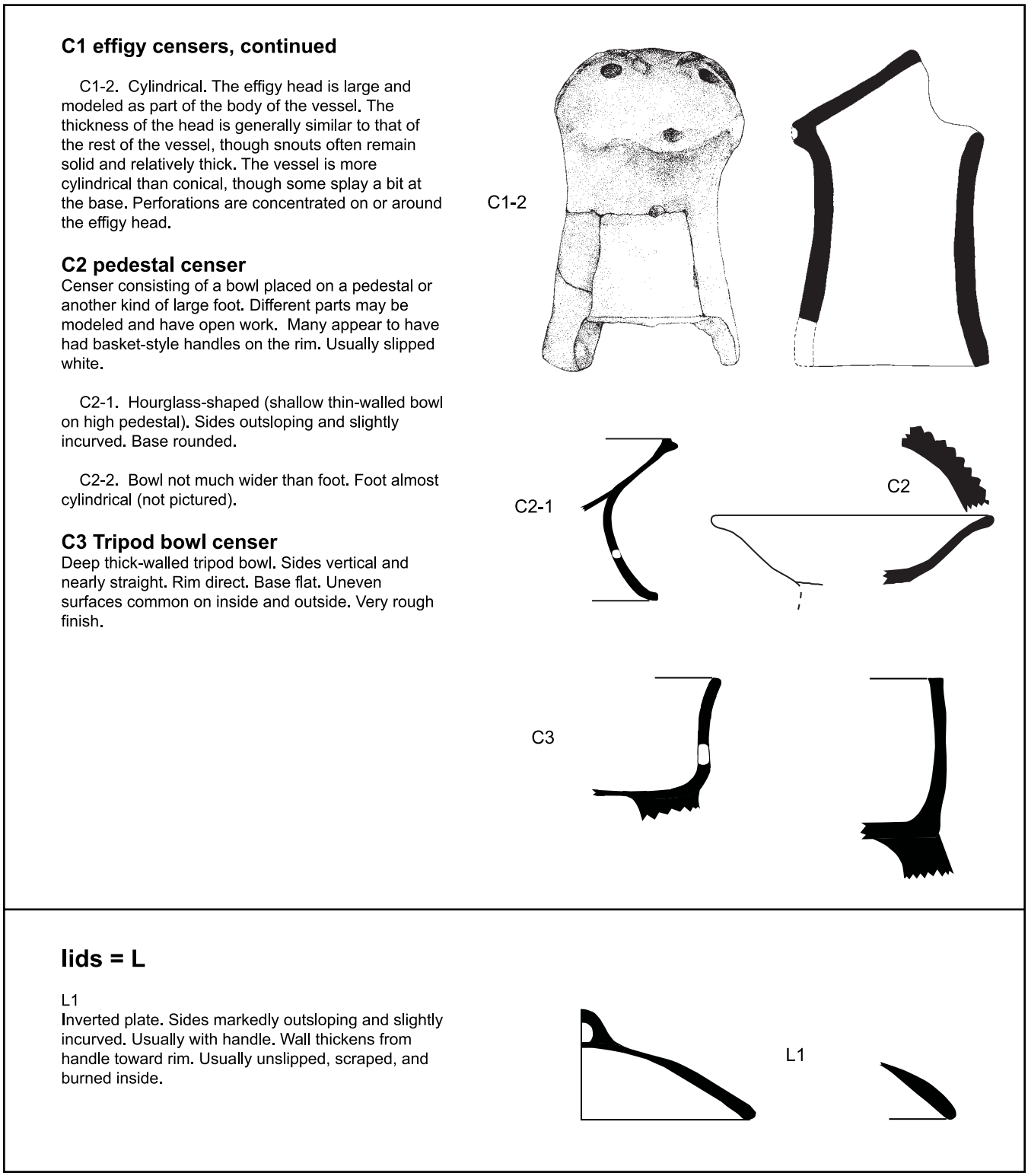

Figure 9.1. *continued*

Mesitas Fine Brown, Ardillas Black, Metl Brown, Palmas Black-and-White, Fermín Fine Gray, Ceniza White). (5) In the case of Xalmonto Red-and-White, incising was often used to more sharply delineate zones with different slip colors. (6) Post-slip excising represents an elaboration of the practice of creating a contrast between the slipped surface and an underlying paste color. This practice, used in conjunction with incising, is mainly confined to the Tlatempa phase (Yauhtentzi White, Yauhtentzi Red-and-White, San José White-and-Brown). (7) Painting of geo-

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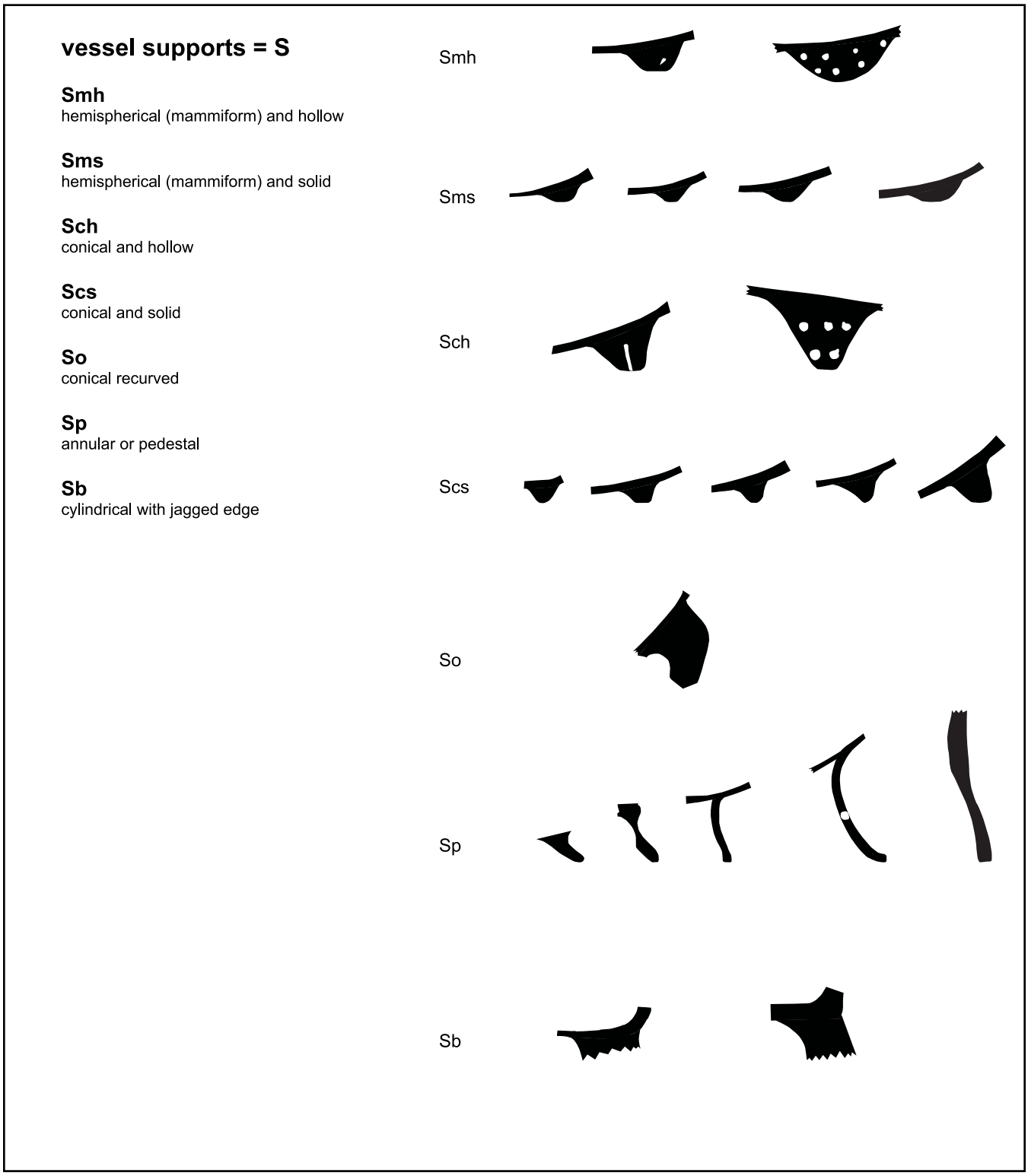

Figure 9.1. *continued*

metric designs in thin white lines on top of a red slip defines the Gazca type.

Slipped, painted, incised, or excised decoration was placed on several characteristic locations on vessels. Bands of red slip appeared most commonly on the interior and/or exterior rim of both open- and restricted-orifice forms. The exterior collar of composite silhouette vessels was a common location for painted or incised motifs. Incising and excising was most common on interior rims of open vessels or the upper exteriors of rounded-walled bowls. In

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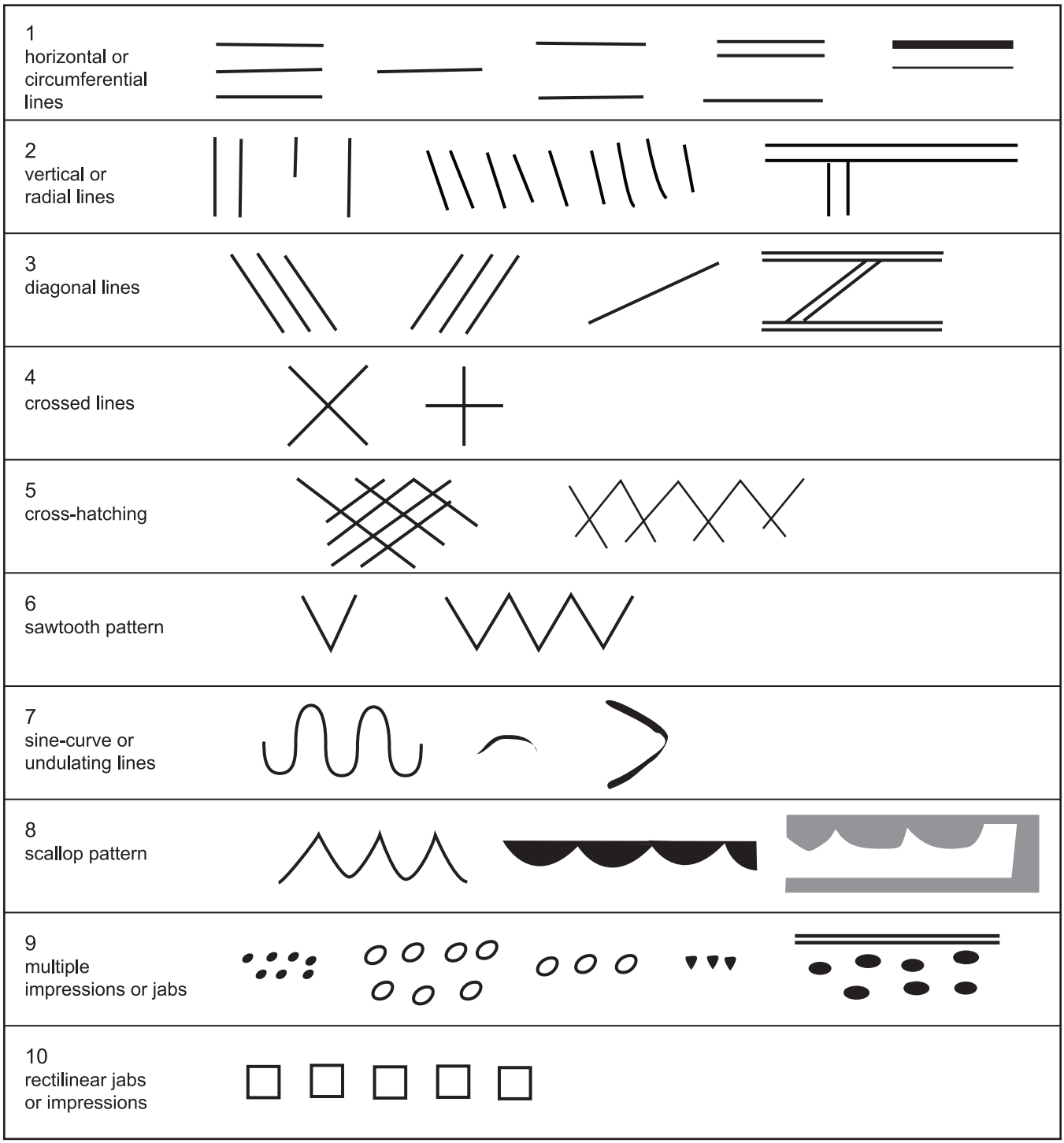

Figure 9.2. Decoration codes. *(continued on the following pages)*

Tlatempa and Texoloc, incised motifs on interior bases of dishes were relatively common.

In Figure 9.2 we provide a synthetic set of codes for classifying motifs on pottery from Tzompantepec through Early Tezoquipan; decoration was very rare in Tenexac. Particularly important motifs are the line break (Code 11a–f); a star formed with four points, or occasionally more, in the interior bases of vessels (Code 12a–b); and a step or mountain motif (Code 13).

Counts of rim sherds bearing motifs from Figure 9.2 are provided in Table 9.1. (Motifs 10, 18, and 19 did not appear in the Chronological Sample; they are most likely confined to the small Postclassic occupation of La Laguna.) The last line of the table notes the overall percentage

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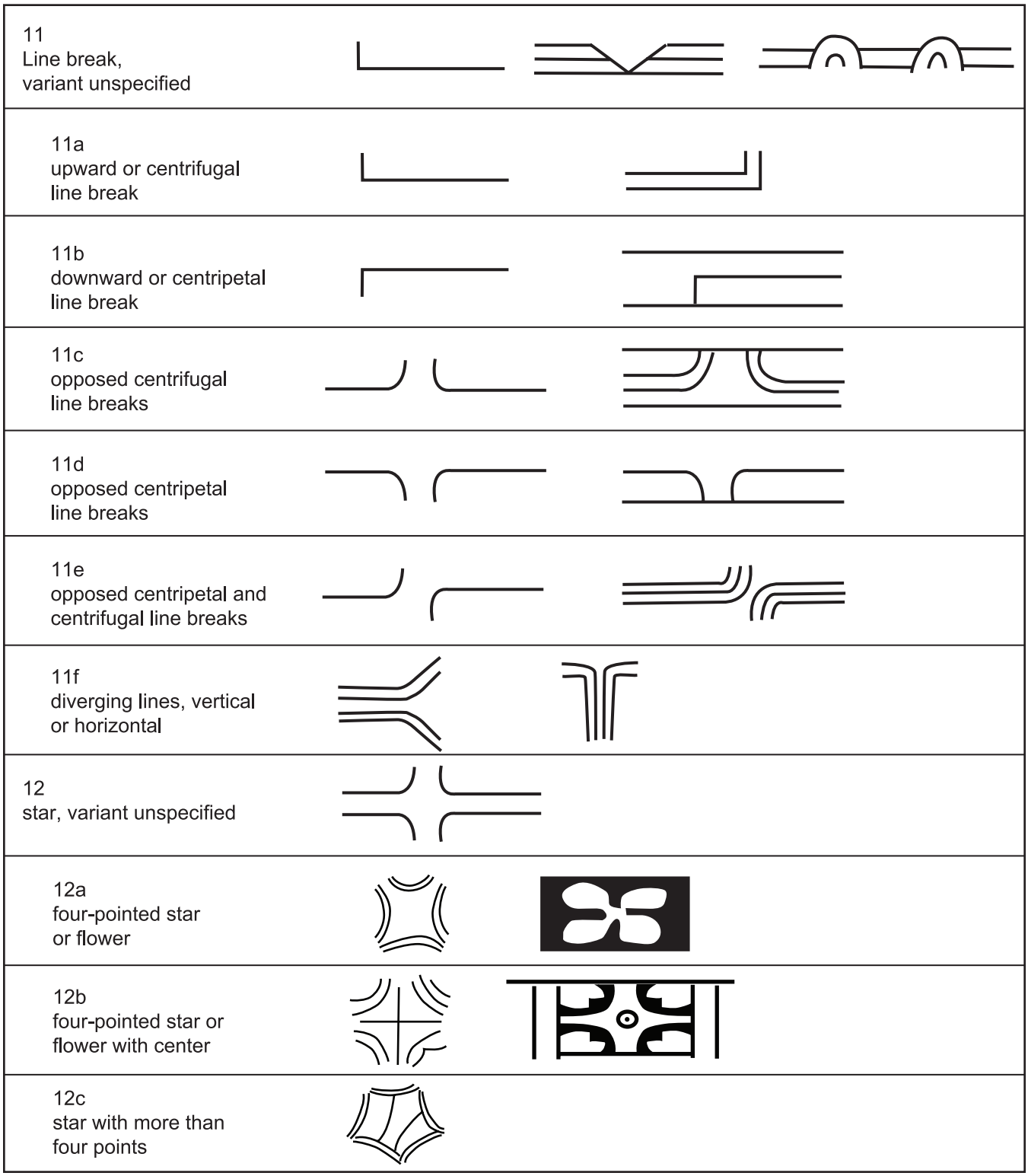

Figure 9.2. *continued*

of decorated sherds for each phase.

Table 9.2 examines changes in motifs over time. Cross-hatching and sawtooth patterns (motifs 5 and 6) appear to have been particularly common in Tzompantepec, though it should be remembered that our sample is small. During the Tlatempa and Texoloc phases, decoration of all kinds was particularly common. Differences between the two phases mainly involve changes in relative frequencies. Line breaks (motifs 11a–f, 52, and 53), scallops (Motif 8), and stars (Code 12a–c) are particularly important in Tla-

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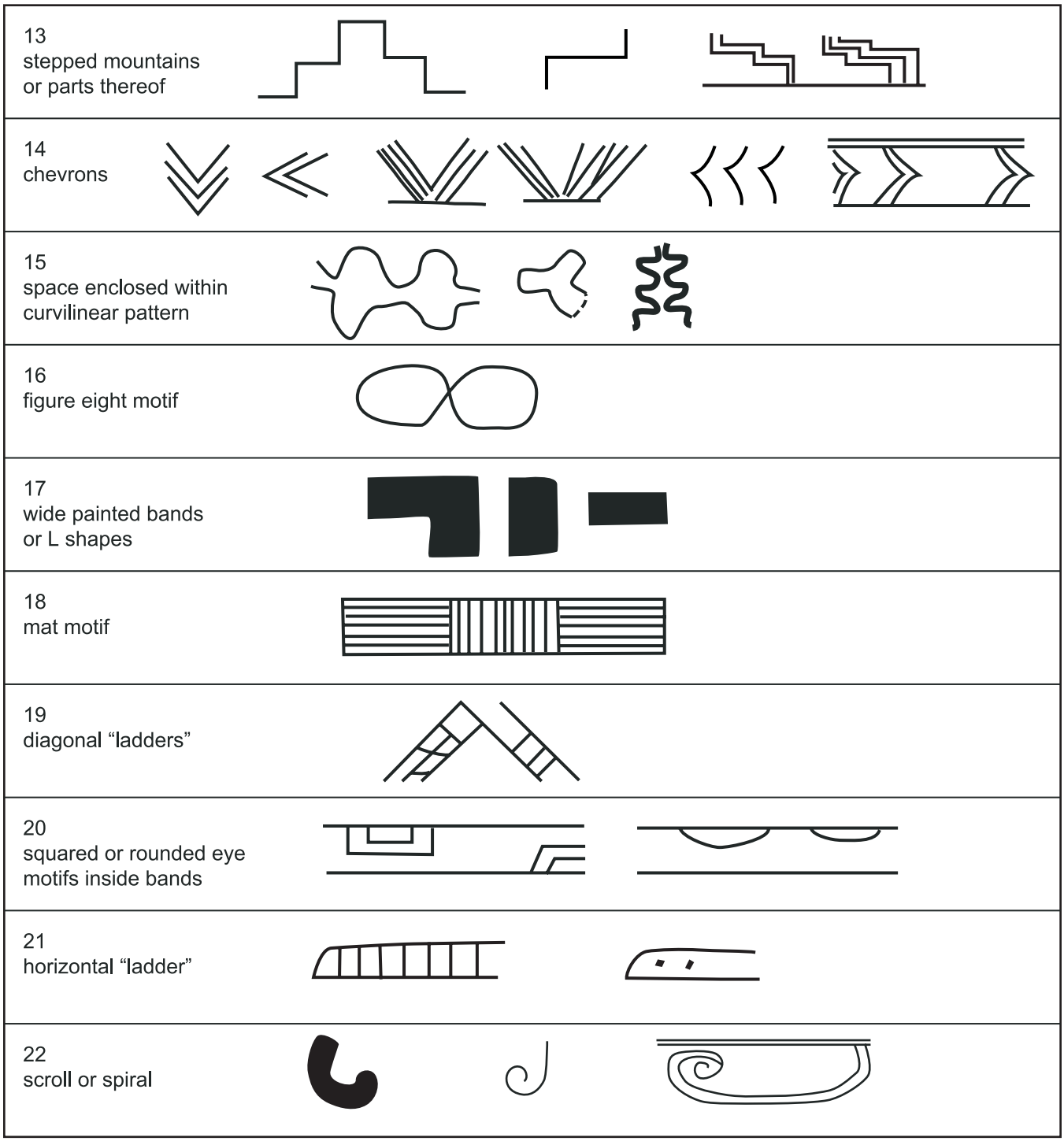

Figure 9.2. *continued*

tempa. The last motif is not well represented in the sample of rim sherds considered here because it appears primarily on the interior bases of bowls (see below, Figure 9.25); instances registered in Table 9.2 are those in which the base is still attached to the rim. In Texoloc, line breaks and stars decline. There is a modest increase in sawtooth patterns, scallops, and multiple jabs (motifs 6, 8, and 9) as well as a sharp increase in diagonal lines (Motif 3). Early Tezoquipan is particularly characterized by step motifs (Code 13; combined with Code 7 in the table due to variance between investigators in the recording of these two motifs). Diagonal lines and multiple jabs continue from Texoloc (motifs 3 and 9). There is a modest rise in crossed lines and sawtooth patterns (motifs 4 and 6) and sharp rises in simple vertical lines and wide painted bands (motifs 2 and 17).

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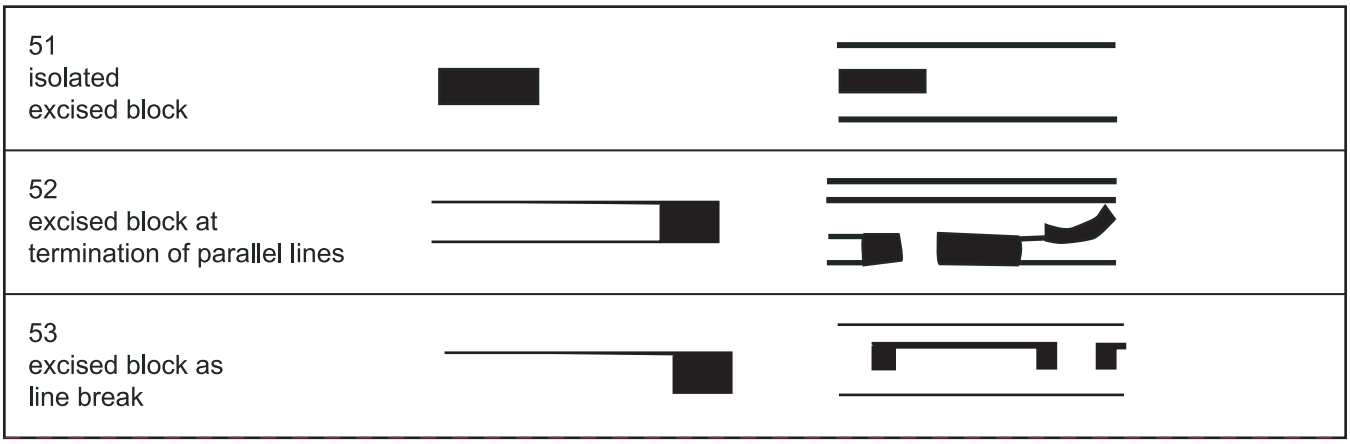

Figure 9.2. *continued*

TYPE DESCRIPTIONS

In the following descriptions, the types are grouped by type-class rather than phase. The full list of types and type-classes is presented in Table 9.3 in the order in which they are described in the following pages. Frequencies are those in the Chronological Sample (Table 8.1); we typically have more (often many more) pieces from contexts that were not considered apt for the seriation (see chapters 8 and 11). We have occasionally drawn pottery from these additional contexts for our illustrations, particularly in the case of low-frequency types.

PLAIN OR ROUGHLY FINISHED

We have grouped as plain or roughly finished a range of sherds that are difficult to characterize in any simple way. Some have hand-wiped or other roughly finished surfaces that are neither scraped nor burnished but nevertheless sometimes slipped white. Others exhibit scraping and/or light burnishing without slip. The second of those sets, dominated by ollas, represents storage, cooking, and preparation vessels for foods or liquids, and we distinguish a single type—Amomoloc Plain. The first set is designated Zahuapan Coarse and appears to consist mainly of ritual vessels.

Amomoloc Plain

Distinguishing Characteristics. Surfaces are scraped and sometimes lightly burnished. Ollas are the most common vessel form. These appear to be utilitarian vessels for the transport, storage, preparation, and cooking of foods and liquids. We have not succeeded in dividing plain ware from different phases into reliably distinguishable types, though it is possible that more concerted effort in this regard might yield results.

Illustrations. Figures 9.3 through 9.5.

Frequency. 1,191 rims in the Chronological Sample.

Temporal Range. Present throughout the sequence in a decreasing percentage of the assemblage from a high of about 50 percent in Tzompantepec.

Culture-historical Integrity. Weak.

Paste. Laguna ware.

Surface Treatment. Vessel surfaces are scraped, often with burnishing on portions of the rim or exterior body. There is no slip, and surface color corresponds to the color of the paste, varying from tan to brown, light reddish brown, and reddish yellow tones (5YR 5/3, 5YR 6/4, 5YR 6/6). Typically, during the Tzompantepec and Tlatempa phases, the entire surfaces of simple bowls were either scraped or burnished. In the Texoloc phase, the majority of bowls were roughly scraped. Ollas during the Tzompantepec phase tended to be burnished in their entirety, except on the interior body, which was scraped. In the Tlatempa and Texoloc phases, the rims and exterior bodies of ollas were burnished, while the exterior necks and entire interiors were scraped. Burnishing around the necks of ollas is sometimes present in the Tenexac phase; well-burnished pieces were classified as Metl Burnished Buff rather than Amomoloc Plain.

Forms. Predominantly ollas, with rounded bowls (B1, B4, B5) also consistently present. Tecomates compose just under 10 percent of the Tzompantepec-phase collection of Amomoloc Plain but decline thereafter. Certain details of rim form are chronologically sensitive. A beveled rim (O1-2) is prevalent in Tzompantepec and thereafter declines in favor of the form that dominates the collection as a whole, an outcurving neck with a direct rim (O1-1). During analysis of the Tenexac collection—conducted after all other analyses had been completed—certain features of plain ollas that seem characteristic of that era were noted and assigned new codes, O1-3 and O-2. The first of these is based on a distinction between ollas with fairly low, outcurving necks (2–5 cm tall; O1-1) and a set with tall necks (6 cm or more; O1-3); the former is overwhelmingly predominant in Tezoquipan and continues to be the main form in Tenexac, but the latter is a distinctive Tenexac trait that

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Table 9.1. Frequencies of the Motif Codes.[a]

Motif Code	Tzompantepec	Early Tlatempa	Late Tlatempa	Texoloc	Early Tezoquipan
1	10	155	210	123	60
2		7	6	10	13
3		1	15	27	12
4			3	1	2
5	4	2	3		1
6	4	2	12	9	7
7		6	12	14	18
8		32	107	58	
9	1	2	12	14	8
11				2	21
11a	1	29	47	38	
11b		16	35	15	
11c	1	3	17	17	
11d		10	13	4	
11e		8	8	3	
11f				2	11
12					
12a		2	14		
12b	1	0	4		
13		12	44	6	21
14		8	16	10	4
15					1
16					1
17					18
20		1	15	3	
21				1	
22		8	3	3	
51		3	38	1	
52		7	65	3	
53		12	31	2	
Total decorated	22	326	730	366	198
Percent of collection decorated[b]	20.4	35.0	49.4	41.7	22.3

[a] The sample considered is the Chronological Sample for Tzompantepec through Texoloc and, for Early Tezoquipan, the following units: B3-1S, B13-1S, B13-2S, B36-1B, B36-2S, B46-2B, B50-3S, B55-1S, A102, A105, and A112

[b] Percentage of all rim sherds that were assigned one of the motif codes in Figure 9.2. At each site, a few other rim sherds had other sorts of decoration; those are counted here as undecorated.

constitutes about 9 percent of plain ware in that phase. The Tenexac O1-3 ollas are tan colored and usually have interior burnishing in the neck that makes them difficult to distinguish from large bowls or basins of Metl Burnished Buff.

Table 9.2. Relative Percentages of Motif Codes 2 to 53, Split by Phase.

Motif Code	Tzompantepec	Early Tlatempa	Late Tlatempa	Texoloc	Early Tezoquipan
2		4.1	1.2	4.1	9.4
3		.6	2.9	11.1	8.7
4			.6	.4	1.4
5	33.3	1.2	.6		.7
6	33.3	1.2	2.3	3.7	5.1
8		18.7	20.6	23.9	
9	8.3	1.2	2.3	5.8	5.8
11 (all variants), 52, and 53	16.7	49.7	41.5	33.7	23.2
12 (all variants)	8.3	1.2	3.5		
13 and 7		10.5	10.8	8.2	28.3
14		4.7	3.1	4.1	2.9
15					.7
16					.7
17					13.0
20		.6	2.9	1.2	
21				.4	
22		4.7	.6	1.2	
51		1.8	7.3	.4	

Note: Certain codes combined.

Prior to Tenexac, such tall necks are rare in the collection. Most necks are less than 6 cm in height (Tzompantepec average 4.1 cm; Tlatempa 4.9 cm; Texoloc 3.8 cm). Only in Tlatempa are there taller necks, ranging up to 14.5 cm.

Decoration. In general, Amomoloc Plain vessels were not decorated. In a few rare instances, Tlatempa ollas (n = 5) were found with one to two grooved circumferential lines running along the lip.

Zahuapan Coarse

Distinguishing Characteristics. This type consists of pottery with surfaces roughly finished in a variety of specific techniques united by lack of the careful surface preparation by scraping that characterizes the entire rest of the collection and that constituted, in most types, a production step prior to slipping and/or burnishing. The actual treatment of the surface in Zahuapan Coarse varies considerably. That variation could have provided the basis for the definition of multiple types. For instance, we have included here both completely unslipped pieces and pieces in which a thin, fugitive white slip has been applied over a roughly finished surface. Such variation seems secondary to what we regard as the fundamental similarity of this grouping—the lack of careful scraping as a step in surface preparation. The reason for the missing step seems to be functional: careful scraping was a step for all vessels destined for alimentary use.

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Zahuapan Coarse vessels, in contrast, were used for other purposes, probably mostly as incense burners, though the function of the crude Tlatempa-phase cylinders remains unknown. Zahuapan is thus probably mainly a ritual ware, but the more definite point is that all the vessels assigned here were not used for food preparation or consumption.

Illustrations. Figures 9.6 through 9.8. See also Figure 1, forms Y, C1, and C3. This ritual pottery will be illustrated in more detail in Volume 3.

Frequency. Analyzed as ritual ware and not included in rim counts for the Chronological Sample here or in Chapter 11.

Temporal Range. Throughout the sequence, from Tzompantepec through Tenexac.

Culture-historical Integrity. Low due to our decision to designate this as a highly lumped, quasi-functional category. Individual forms do have temporal sensitivity.

Paste. Laguna ware. There is no distinction in paste between Zahuapan Coarse and contemporary alimentary vessels.

Surface Treatment. As noted above, careful scraping was not a step in surface preparation of these vessels. Interiors of closed forms are often extraordinarily roughly finished, to the extent that coils are sometimes still readily distinguished. Exteriors were finished by wiping with the hand or another soft tool; occasionally they were cursorily scraped. Effigy censers often had pink to orange paste (2.5YR 6/6, 2.5YR 7/4, 5YR 6/6, 2.5YR 7/6) while the exterior surface was beige to gray (7.5YR 5/4, 2.5YR 3/2). A thin, fugitive white slip was often applied to effigy censers (Figure 9.6). That practice was more common early (Tlatempa/Texoloc) than late (Tezoquipan). Surfaces of the crude cylinders were typically hand wiped with a thin slurry that dried in a characteristic pattern (Figure 9.7). None of the cylinders have the fugitive white slip characteristic of the effigy censers.

Forms. Effigy censers (C1) had open bases and from one to three holes in the upper portion of the vessel for the release of smoke; there was no platform for the placement of coals or incense (Figure 9.6). Other forms include less common censers in a variety of shapes (C2-1, C2-2, C3) and tall, crude, cylindrical vessels of unknown function that we have designated Form Y (figures 9.7 and 9.8).

Decoration. The crude cylinders are undecorated. Effigies on the C1 censers are typically zoomorphic. The heads are crude and schematic, but there appear to be links to pan-Mesoamerican iconographic themes sometimes identified with a badger (*tejón*) but probably better understood as an opossum (*tlacuache*) (Czitrom 1993; López Austin 1993). Two heads in our collection are shown with paws resting on the snout, a theme that occasionally appears on later Mesoamerican opossum imagery, though often only one paw (instead of both) is positioned in that way (Czitrom 1993:figures 370–371, 373, 375).

Comparisons. The zoomorphic censer tradition, first reported by García Cook and Merino Carrión (1988:lámi-

Table 9.3. Type-Classes (in Italics) and Types.

Plain or Roughly Finished
Amomoloc Plain
Zahuapan Coarse
Burnished Brown and Black
Mesitas Brown
Mesitas Fine Brown
Ardillas Black
Metl Brown
Metl Burnished Buff
Smudged
Pascuala Black-and-White
Palmas Black-and-White
Gray Clear Through
Fermín Fine Gray
Orange Paste
Apizaco Orange
White
Ceniza White
Yauhtentzi White
Red and Red-and-Scraped
Laguna Red
Laguna Dark Red
Laguna Red-and-Scraped
Red and White
Yauhtentzi Red-on-White
Gazca White-on-Red
Xalmonto Red-and-White
White and Brown
San José White-and-Brown
Red and Brown
Potrero Streaky Red-on-Brown
Laguna Dark Red-on-Buff
Potrero Red-on-Brown
Tejales Incised
González Red-on-Brown
Polychrome
De Haro Polychrome
Xilomantla Polychrome
Yano Polychrome

Note: Types are listed in the order described in the following pages.

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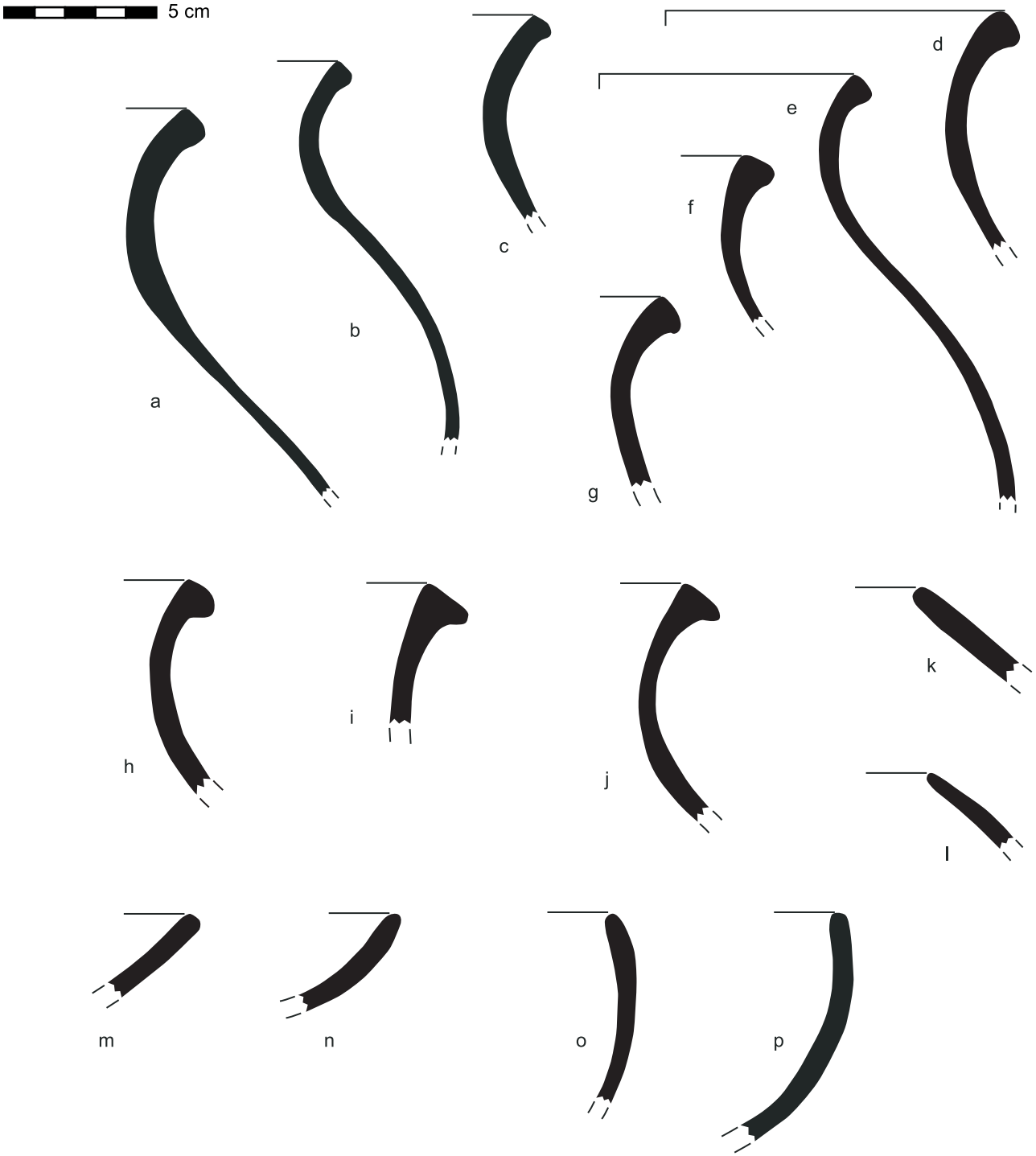

Figure 9.3. Amomoloc Plain, Tzompantepec phase: (a–j) ollas with exteriorly thickened rims; (k–l) tecomates with thin walls; (m–p) hemispherical bowls. Proveniences (all from A46-2S): a-630, b-588+593, c-617, d-649, e-593, f-593+620, g-630, h-592, i-636, j-588+593+620, k-606, l-630, m-658, n-657, o-617, p-658.

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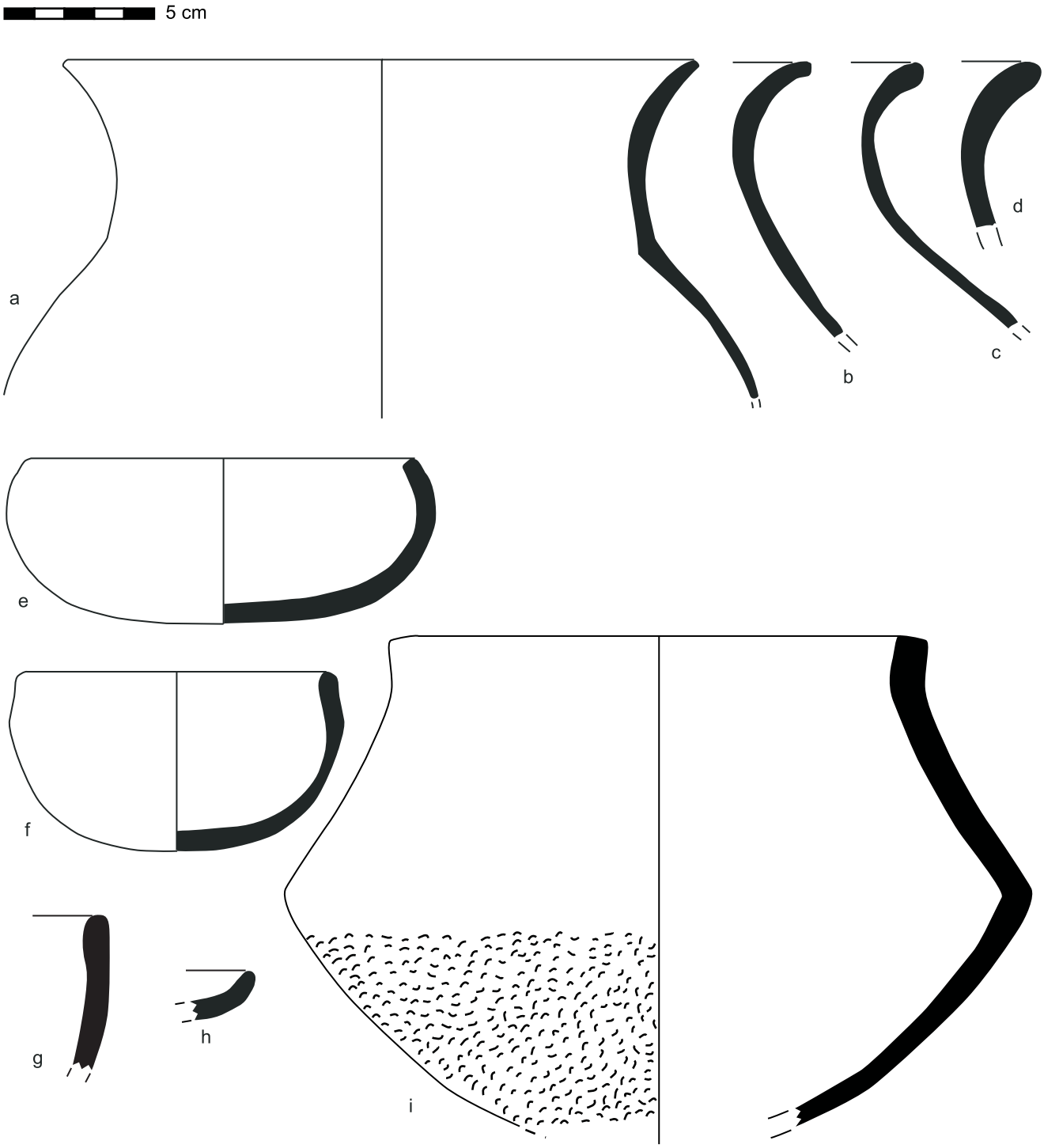

Figure 9.4. Amomoloc Plain, Tlatempa and Texoloc phases: (a–d) ollas; (e–g) hemispherical bowls; (h) dish with rounded walls; (i) restricted-rim bowl with incurving walls. Proveniences: a-29[A4-4S], b-39[A4-4S], c-41[A4-4S], d-26[A4-4S], e-666+685+693[A54-2S], f-730[A59-mixed], g-666+703[A54-2S], h-666[A54-2S], i-71+72+82[A11-2S].

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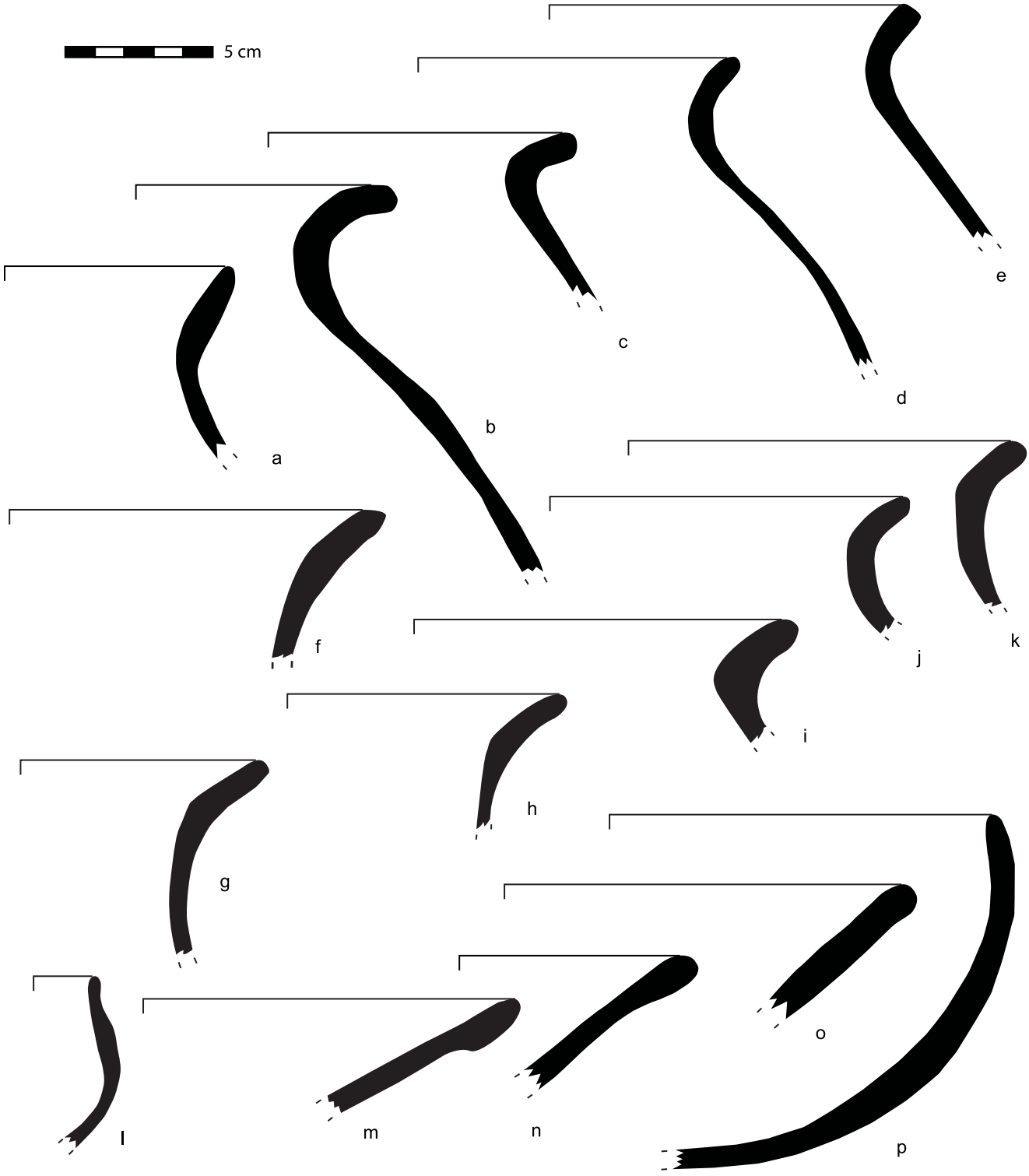

Figure 9.5. Amomoloc Plain, Tezoquipan, and Tenexac phases: (a–k) ollas; (l) bowl with beveled rim; (m) comal; (n-p) hemispherical bowls. Proveniences: a-1184, b-1217, c-1192, d-1420+1445+1447, e-1448, f, g, i-1676, h-1684, j-1699, k-1698, l-1186, m-1678, n-1187, o-1244, p-1428.

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Figure 9.6. Zahuapan Roughly Finished; effigy censers (Form C1-1). Proveniences, left to right: 959[A71-1S], 610[A48-1S], 661[A48-1S], 965+942[A74-1S].

nas 5a–e), seems to have been characteristic of Tlaxcala and the northern Puebla-Tlaxcala Valley. Although a very similar censer is on display at the archaeological museum in Cholula and at least one was recovered by Vaillant at Ticomán (Vaillant 1931:Plate LXXX), the specific tradition appears to have been rare in the southern part of the Puebla-Tlaxcala Valley and the Basin of Mexico. In contrast, our collection (of fragments and a few nearly complete pieces) numbers in the hundreds.

BURNISHED BROWN AND BLACK

This type-class includes *both* slipped and burnished and unslipped but burnished pieces. In our assessment, the crucial surface finish distinction is between those two considered together and pieces that are scraped but unburnished; the issue of whether polished brown surfaces were produced by slipping or merely burnishing is therefore not an important criterion in our type descriptions. A divi-

Figure 9.7. Zahuapan Roughly Finished; crude cylinder (Form Y). Interior view on left; exterior view on right. Provenience: 539+564+566.

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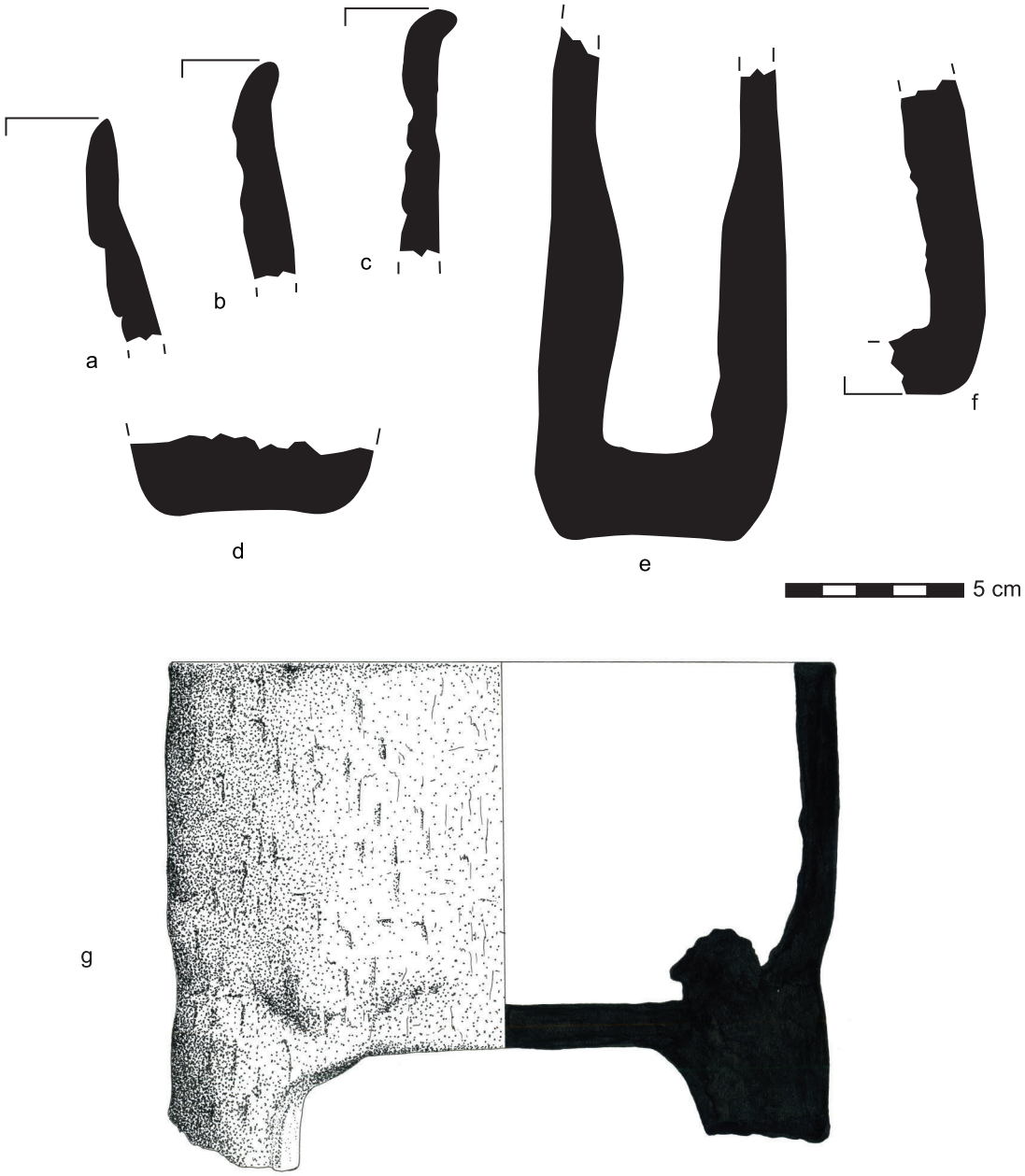

Figure 9.8. Zahuapan Roughly Finished: (a–f) crude cylinders (Form Y) from Amomoloc; (g) censer (Form C3) from La Laguna. Proveniences: a-825, b-Amomoloc, c-624[A50-1S], d-539, e-539+564+566, f-640[A47-1S], g-lots 1192, 1248, and 1250. Drawing (g) by Juan Bazán Ortiz.

sion of the blacks and browns into replicable types proved something of a challenge, even given the presence of two wares, Laguna and Metl. We have ended up distinguishing five types.

Mesitas Brown

Distinguishing Characteristics. Slipped and burnished or simply burnished vessels, generally dark brown in color. In contrast to other brown and black types, the exteriors of open vessels are often more roughly burnished than the interiors. Also, walls tend to be thicker than for other types. However, there can be considerable variation in thickness even in different parts of a single vessel. Mesitas Brown dishes or bowls with downcurving everted rims (B3-4) are particularly diagnostic of the Texoloc phase, but other thickened-rim forms are also common.

Illustrations. Figures 9.9 and 9.10.

Frequency. 461 rims in the Chronological Sample.

Temporal Range. Mesitas Brown occurs in small quantities during the Tzompantepec (8 percent) and Tlatempa (6 percent) phases, reaches its maximum frequency during

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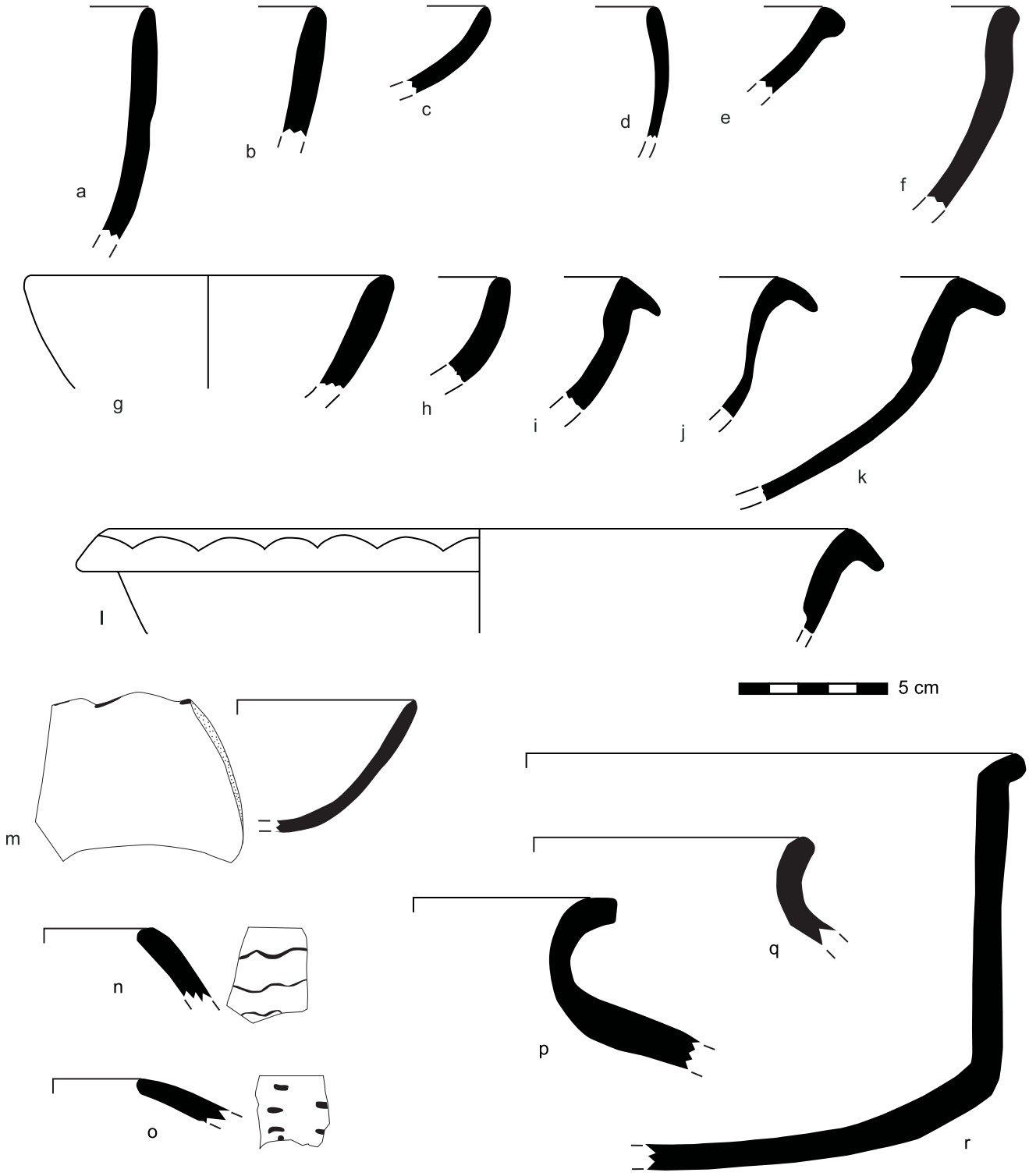

Figure 9.9. Mesitas Brown, Tzompantepec to Tezoquipan phases: (a–c, g, h, m) dishes with rounded walls; (d) hemispherical bowl; (e) dish with exteriorly thickened rim; (f) bowl with beveled rim; (j–l) dishes with downcurving everted rims; (n–o) tecomates with thin, gently rounded walls; (p–q) ollas with outcurving necks, smooth interior profiles, and direct rims; (r) deep composite silhouette bowl with low shoulder. Proveniences: (a–f) A46-2S, a-601, b-606+617, c-620, d-653, e-658, f-649; (g–j) A15-1S, g-115, h, i-112, j-113; k-48+52[A10-1S]; l-108[A15-1S]; m, r-1217; n, o-1071; p-1190; q-1398.

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Figure 9.10. Mesitas Brown, Texoloc phase.

the Texoloc phase (15 percent), and declines in Tezoquipan (7 percent). Although we registered small numbers also in Tenexac (4 percent), the type was at that time being replaced by Metl Brown.

Culture-historical Integrity. Acceptable, though note problems distinguishing Mesitas Brown from Metl Brown.

Paste. Laguna ware. Color of paste varies from brown (5YR 5/4) to dark gray (5YR 4/1, 5YR 4/2).

Surface Treatment. Vessel surfaces are typically covered with a dark brown slip that may vary from light brown (10YR 5/4) to dark gray (10YR 3/1). Some vessels instead appear to be merely burnished. Typically, the interiors and exteriors of open vessels are burnished to different degrees. For instance, interiors are well burnished, but on the exteriors burnishing covers the surface unevenly and lines from scraping are still apparent.

Forms. In the Tzompantepec-phase collection, rounded-walled bowls (B1-1, B4) predominate (60 percent); those forms thereafter decrease in frequency but are nevertheless persistently important (20 to 30 percent) in sub-

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sequent phases. In the Tlatempa phase, modified-rim dishes proliferate (B3-2, B3-3, B3-4, B3-5, B3-7, B3-8). There are also ollas and tecomates (O1-1, O1-2, O4, O5-1, T1-1, T2). The downcurving everted rim dish (B3-4) constitutes nearly half the collection in the Texoloc phase. There is a concomitant reduction in the variety of other B3 varieties present, and composite silhouettes make a sudden, strong appearance (B6-1a, B6-1b). Those patterns basically persist into Tezoquipan, with some reduction in the prominence of B3-4 in relation to other forms, such as ollas and tecomates (O1-1, T). Minor forms include B2, B5-1, B5-2, B7, B10-1, B11, F1, O1-2, O3, O4, O5-1, P-2, T1-1, and T2.

Decoration. During the Tzompantepec and Tlatempa phases, about 20 percent of Mesitas Brown vessels were decorated, whereas 65 percent of Texoloc Mesitas Brown vessels were decorated. In the Tzompantepec phase, decoration was restricted to two vessels, with exterior modeling resembling the surface of a gourd. In the Tlatempa phase, simple horizontal lines were most common (36 percent of decorated vessels), with wavy lines (Motif 8; 18 percent) and line break motifs (Motif 11a–c; 29 percent) represented as well. Decorations were more commonly grooved or excised on the exterior and exterior rim of vessels. During the Texoloc phase, a variety of grooved and excised motifs appeared mostly on the exterior rim of downcurving everted rim vessels. The most common motif was a wavy line (Motif 8; 29 percent), though line breaks (Motif 11a–d) were common as well (32 percent). Simple horizontal lines (Motif 1; 14 percent) were less common, and occasionally punched dots (Motif 9; 6 percent), diagonal lines (Motif 3; 3 percent), Scrolls (Motif 22; 2 percent), and others appeared as well.

Potential Misidentifications. Mesitas Brown is distinguished from Mesitas Fine Brown by wall thickness and hardness. It is distinguishable from Metl Brown and Metl Burnished Buff according to several criteria but with low replicability. (See discussion under Metl Brown, below).

Comparisons. Mesitas Brown includes particularly Texoloc Café (García Cook and Merino Carrión 1988:284–285), though like Serra Puche et al. (2004:51–54) we find Formative-era slipped brown or burnished brown surface finishes to be long lasting and often not diagnostic to any particular phase. Our Texoloc-phase brown vessels are a good match for what Serra Puche et al. (2004:67–71) called Café Esgrafiado and Negro Esgrafiado. Our most diagnostic Texoloc-phase form—B3-4, a dish with outcurving walls and a downcurved everted rim (Figure 9.9i–l), typical in both Mesitas Brown and Potrero Red-on-Brown—is illustrated by García Cook and Merino Carrión (1988:láminas 7a, c, e) and Serra Puche et al. (2004:figures 21a, 23b). Rodríguez and Borejsza identified two of those in the Ticomán collection at the American Museum of Natural History. Sanders et al. (1979:442) seem to be describing this form when they note the prominence of "drooping lips" among basal-break bowls of Ticomán 1. Some Quachilco Brown bowl forms from the Tehuacán Valley are similar (MacNeish et al. 1970:Figure 69), though at least one of those appears to have a flat base, which would be unknown in Texoloc. Broadly speaking, Quachilco Brown of the Late Santa María Phase seems similar to Mesitas (MacNeish et al. 1970:114–120), as does Black-Brown ware at Ticomán (Vaillant 1931:286–288).

Mesitas Fine Brown

Distinguishing Characteristics. A rare type distinguished from Mesitas Brown by a highly burnished, shiny surface and finely incised decoration. Vessel walls tend to be thinner (4–6 mm) than those of Mesitas Brown vessels (6–8 mm). The type may be understood as a Tlatempa-phase predecessor to Ardillas Black.

Illustration. Figure 9.11.

Frequency. 49 rims in the Chronological Sample.

Temporal Range. Mesitas Fine Brown is found in low proportions from Tlatempa through Tezoquipan.

Culture-historical Integrity. Uncertain due to small sample.

Paste. Laguna ware tending in some instances toward Metl ware. Mesitas Fine Brown vessels seem to have been fired at a high temperature; sherds of this type make a "clink" when struck against each other in contrast to the dull "clunk" characteristic of Mesitas Brown. The paste seems to have fewer inclusions than that of Mesitas Brown.

Surface Treatment. Mesitas Fine Brown vessels are slipped blackish brown (10YR 3/1, 7.5YR 4/1, 10YR 2/1, 7.5YR 2.5/1). They are highly burnished and shiny, and their walls, both interior and exterior, are smooth to the touch. Sometimes the exteriors of open-profile vessels are less well finished than the interiors; that trait is shared with Mesitas Brown but not Metl Brown.

Forms. Simple bowls, composite silhouette bowls with a variety of upper wall profiles (B6), tecomates with exterior modeling, small jars, and thin-walled versions of the characteristic Mesitas Brown form, the dish with a downcurved everted rim (B3-4).

Decoration. Incising or gouging on exterior upper wall profiles or interior rim band. During the Tlatempa phase, the majority of decorated Mesitas Fine Brown vessels had incised designs on the exterior of the vessel. Motifs included simple horizontal lines (Motif 1; 38 percent) and line breaks (Motif 11a–d; 29 percent), among others. Decorated Mesitas Fine Brown vessels were rare in the Texoloc sample from Tetel, with only two examples, both decorated on the exterior (Motif 11d on one and Motif 3 on the other).

Potential Misidentifications. This type is distinguished from Metl Brown by the lack of a waxy feel and a streakier burnishing; vessel forms are also different from that later type. Mesitas Fine Brown shares many characteristics with Ardillas Black, including vessel forms, but the slip color is brown.

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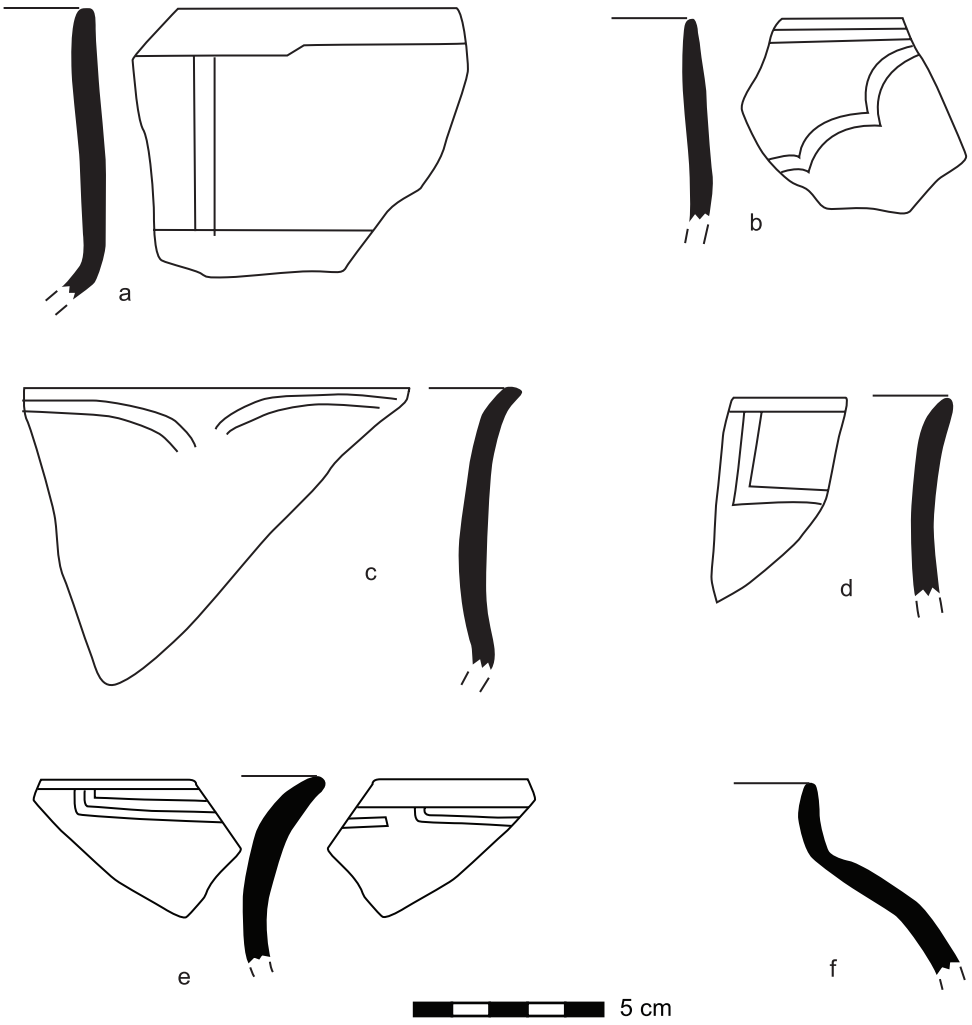

Figure 9.11. Mesitas Fine Brown, Tlatempa phase: (a–b) bowls with vertical walls with exterior incised decoration; (c–d) composite silhouette bowls with interior incised decoration; (e–f) jars. Proveniences: (a–d) A4-4S, a-29, b-40, c-35, d-28, e-914+915[A73-2S], f-714[A57-2S].

Comparisons. Due to our small sample size, no definitive correlations with other sequences are possible. Negro Esgrafiado at Xochitécatl may include some of what we are calling Mesitas Fine Brown (Serra Puche et al. 2004:67). Mingo Fine Brown at Chalcatzingo has some similarities, although incising appears to be less common than for Mesitas (Cyphers 1987:243). Composite silhouette bowls are rare in Quachilco Brown in the Tehuacán Valley (MacNeish et al. 1970:119).

Ardillas Black

Distinguishing Characteristics. Vessels with well-burnished, distinctly black surfaces and thin walls (4–6 mm in general).

Illustration. Figure 9.12

Frequency. 122 rims in the Chronological Sample.

Temporal Range. Found almost exclusively in Tezoquipan but relatively rare. Possibly present in Texoloc and Tenexac but difficult to distinguish from other wares with a very dark slip.

Culture-historical Integrity. Medium, but improvable if misidentification problems are resolved for the Texoloc and Tenexac phases.

Paste. Laguna ware tending toward Metl ware. Paste is relatively fine for Laguna ware, with large inclusions rare. Sherds are relatively hard and well fired. Paste color is brown (5YR 6/5, 5YR 6/6), sometimes with a gray core (10YR 4/1, 5YR 3/1).

Surface Treatment. The slip is pitch black (0/0) or almost so (10YR 2/1). It is well burnished but often exhibits alternate subhorizontal streaks distinguishable by being

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more shiny or more matte. The slip covers all surfaces except the insides of closed-orifice forms.

Forms. Most common are relatively deep hemispherical bowls with direct rims (B4) and thin-walled tecomates with gently rounded walls (T1-1). A variety of other bowl forms (B2, B3-1, B3-5, B5-3, B6-1a, B7-2, B11) is represented by one or two specimens each in the Chronological Sample. Many rim sherds are so small that they can be classified only as generic "bowls." Some are more likely vases, though this is difficult to prove in the absence of the lower portions of the vessels. A very conspicuous quality of the Ardillas vessels is that they are small, with the average diameter of the mouth close to 10 cm. There are several examples of true miniature vessels, with bowls measuring as little as 7 cm at the mouth and tecomates as little as 5 cm. This quality, coupled with the thin walls and careful surface finish, suggests that these vessels were fine service or special-purpose specimens.

Decoration. Some sherds have carefully executed post-slip incisions on the exterior rim or body, or the interior rim. They consist mostly of combinations of straight lines, set horizontally, vertically, or diagonally. Isolated jabs and molding of the rim have also been observed.

Potential Misidentifications. This type may be difficult to distinguish from the finest and darkest specimens of Mesitas Fine Brown and Metl Brown, especially in vessels of intermediate wall thickness (6–8 mm). We have relied particularly on color, excluding all but the truly black specimens.

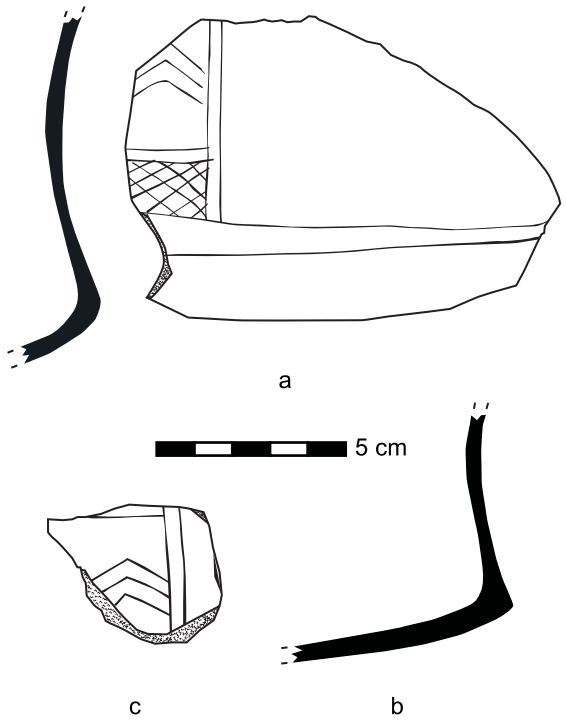

Figure 9.12. Ardillas Black: (a–c) vases with sides approximately vertical. Proveniences: a-1196, b-1189, c-1398.

Comparisons. If observed at all at sites other than Laguna, this type must have been subsumed under others that bear dark brown to black slips. It is very likely that specimens of Ardillas Black were excavated at Xochitécatl and included in the Negro Esgrafiado type (Serra Puche et al. 2004:67–70). We base this supposition more on certain details of the description than on the illustrated specimens. Small tecomates or vases are mentioned, as well as the occasional presence of a red powdery pigment in the incisions. In a few of our incised specimens we have indeed observed red specks with the aid of the magnifying glass, though we were not sure if they represented the remnants of a pigment or some inclusion of the paste exposed by post-slip incising. The possibilities that Ardillas Black represents either a geographically restricted type (we have found it only at La Laguna) or one imported from outside Tlaxcala seem worth exploring.

Metl Brown

Distinguishing Characteristics. Dark brown vessels in Metl paste, generally slipped. Thin, outsloping-walled dishes with direct rims and flat bases predominate. In a Tenexac collection, this type will grade into Metl Burnished Buff.

Illustration. Figure 9.13.

Frequency. 226 rims in the Chronological Sample.

Temporal Range. Characteristic of the Tenexac phase, forming 16 percent of the assemblage. A minority of brown-slipped vessels manufactured in the Texoloc and Tezoquipan phases are indistinguishable from Tenexac-phase Metl unless vessel form is considered as a basis for classifying them.

Culture-historical Integrity. Acceptable, though note problems distinguishing Metl Brown from Mesitas Brown.

Paste. Metl. Paste color is light brown (7.5YR 6/4), occasionally with a gray core.

Surface Treatment. Both surfaces of open forms are usually slipped and well burnished. In some cases a similar effect seems to have been achieved by burnishing alone, with no slip, but typically unslipped Tenexac-phase burnished sherds would be light tan in color and would be assigned to Metl Burnished Buff. Surface color is dark brown, sometimes a mottling of several of the following: 5YR 4/1, 5YR 4/2, 5YR 5/3, 5YR 6/1, 5YR 6/2, 5YR 6/3, 5YR 6/4, 7.5YR 5/4, 7.5YR 6/2, 7.5YR 6/4.

Forms. In Tenexac samples, overwhelmingly outsloping-walled bowls (B2, B2-3) are present. A minority are markedly outcurving (B2-4). Flat bases seem to have been common, but some B2s were definitely rounded-bottomed composite silhouettes. Rounded-walled bowls are the only other common form (B4). Present in small numbers are B1, B3-2, B3-5, B5-1, B6, O1, T, and P. The sample of Metl Brown sherds from Feature C133 diverges distinctly from Tenexac patterns; as a result C133 has not been assigned to any of our ceramic complexes (see Table 8.1 and Chapter 11 for discussion). In C133, beveled- and everted-rim dish-

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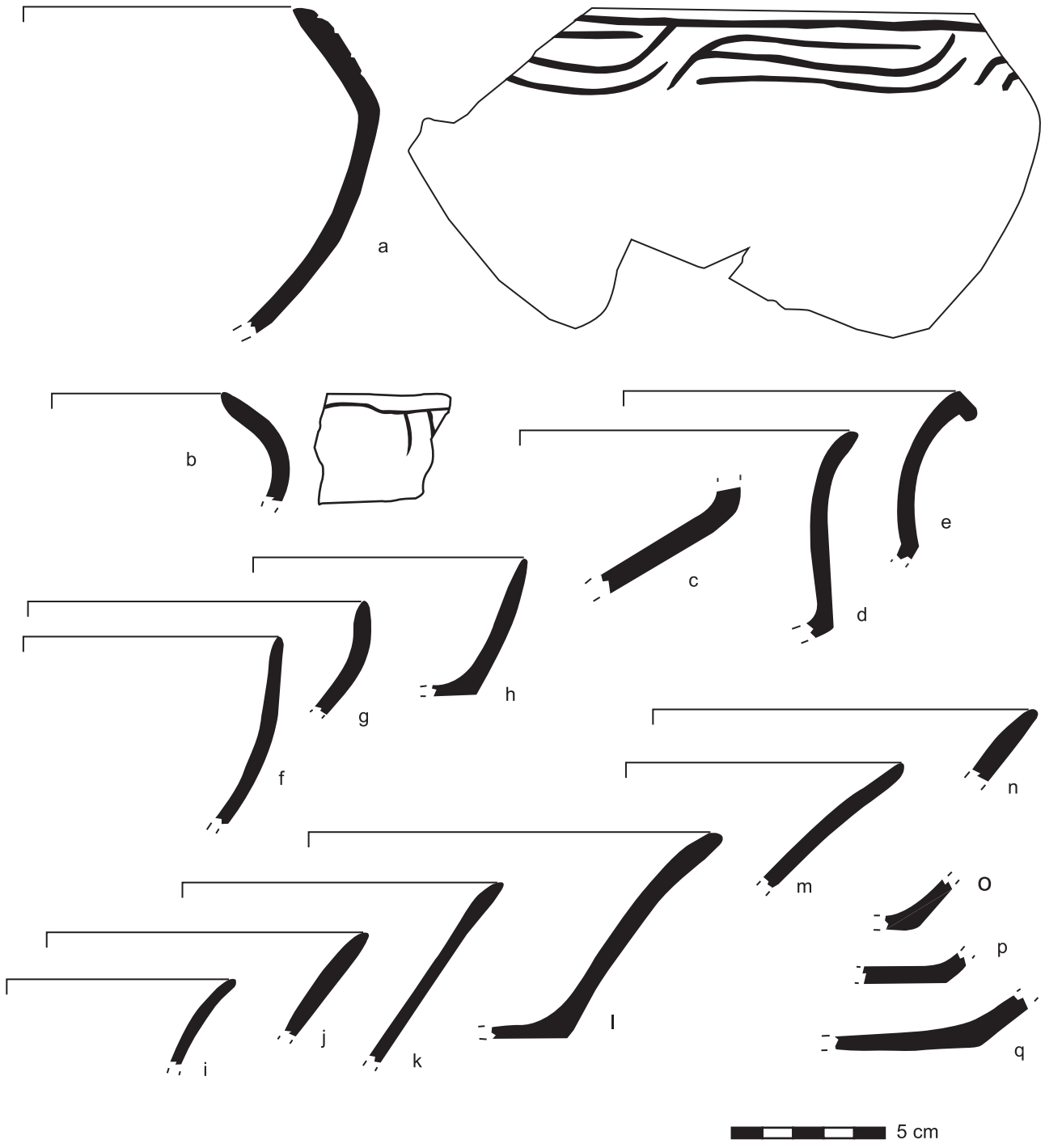

Figure 9.13. Metl Brown: (a–b) restricted-orifice bowls, possibly with flat bases; (c–e) composite silhouette bowls with rounded bases; (f–g) bowls with rounded walls, bases uncertain; (h–q) bowls with outsloping to slightly outcurving walls and flat bases. Proveniences: a-Laguna, b-1617, c-Laguna, d, e-1699[Lag-D2], f-1698[A110-2S], g-1696[A109-2S], h-1678[Lag-D1], i-1699[Lag-D2], j-1698[A110-2S], k, l-1696[A109-2S], m-1684[Lag-D1], n-1676[Lag-D2], o-1678[Lag-D1], p-1700[A110-2S], q-1678[Lag-D1].

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es or bowls (classified as B3-2 and B3-5, though their lower profiles are actually uncertain) are particularly prominent, and rounded-walled bowls are important.

Decoration. Very rare. The characteristic form (B2) seems never to have decoration. There is a recurring pattern of incising on the upper shoulder of high-shoulder tecomates or rounded-walled bowls (Figure 9.13a–b).

Potential Misidentifications. Metl Brown can be difficult to distinguish from Mesitas Brown, Mesitas Fine Brown, and Ardillas Black, all of which are characteristic of Laguna ware. While paste is one of the primary bases for identifying Metl Brown as a distinct type, the distinction often proves frustrating, apparently because both Laguna and Metl wares are manufactured of local clays. Differences between them derive from variation involving an unknown combination of clay preparation, firing conditions, and manufacture techniques. There is sufficient variation within each ware to lead to overlap between them in terms of hardness, thinness of walls, and the waxy feel that is particularly characteristic of Metl. The repertoires of forms, however, are quite distinct.

Comparisons. Metl Brown seems to be what Snow (1966:214–215) referred to as San Martin Brown, though we recorded generally lighter tones. Metl corresponds as well to García Cook and Merino Carrión's (1988:304–306) Tenanyecac Café Pulido. Serra Puche et al. (2004:53) identify bowls and plates with flat bases in their Grupo Café Oscuro at Xochitécatl, but the rim forms do not appear to match those of Metl Brown. No type described for Tehuacán (MacNeish et al. 1970) is convincingly correlated with Metl Brown. Ties instead are with the Basin of Mexico and particularly to the burnished brown pottery of early Teotihuacan. Metl Brown is similar to the Polished Monochrome ware described by Rattray (2001:131, 145–147, 157–159) for Tzacualli and Miccaotli phases, though Metl surfaces are less reddish (5YR instead of 2.5YR). Shouldered bowls—reported for the Tzacualli phase (Rattray 2001:figures 33a–b, w; Sanders et al. 1975:figures 72a–b, 76d–c)—are rare in Metl in comparison to outsloping-walled bowls. The nubbin supports characteristic of Miccaotli bowls (Rattray 2001:figures 42f, 42m–bb) are absent in Metl. The walls of Metl Brown bowls are more commonly outsloping or slightly convex than outcurving and in that sense resemble common Tzacualli forms more than those of the Miccaotli phase. (Compare Rattray [2001:Figure 33h–k] and Sanders et al. [1975:figures 74d–g, 75] to Rattray [2001:Figure 42a–i].)

Metl Burnished Buff

Distinguishing Characteristics. Unslipped, well-burnished vessels in Metl paste. Vessel surfaces are tan colored. Metl Burnished Buff interdigitates with Metl Brown, as signaled by the similar type name. The two were made and used during the same era. Metl Brown vessels were for service, while Metl Burnished Buff includes both service vessels as well as preparation, storage, and perhaps cooking vessels.

Illustration. Figure 9.14.

Frequency. 16 rims in the Chronological Sample.

Temporal Range. Tenexac phase.

Culture-historical Integrity. Acceptable, though see Mesitas Brown and Metl Brown.

Paste. Metl ranging to Laguna. The paste and the vessel surface typically have the same color, a light tan (7.5YR 6/4, 7.5YR 7/4, ranging occasionally to 10YR 7/3 or even toward orange, 2.5YR 6/8). Gray cores are more common than they are in Metl Brown.

Surface Treatment. Well-burnished buff. Surfaces are light brown (7.5YR 6/4, 7.5YR 7/4, 5YR 7/6)

Forms. Dishes and bowls with flat bases and outsloping walls; composite silhouette bowls with rounded bases; ollas; and large, thick-walled vessels with distinct breaks in the exterior profile. The last are fragmentary and not very well understood, but they appear to be large food-preparation vessels that probably had a variety of specific shapes. Some are finished in the interior and others are not. They are known primarily from body sherds.

Decoration. Undecorated.

Comparisons. García Cook and Merino Carrión (1988:304) described variation in surface color of both Tenanyecac Café Alisado and Tenanyecac Café Pulido. Since the latter is described as slipped, our Metl Burnished Buff more likely correlates with well-finished examples of Tenanyecac Café Alisado. Rattray (2001:153) describes very light-colored pastes for the Miccaotli phase at Teotihuacan, but in her type descriptions she lists darker surface colors for both Tzacualli and Miccaotli.

SMUDGED

This type-class includes sherds with smudged surfaces that vary in color from white to black. Two types are distinguished.

Pascuala Black-and-White

Distinguishing Characteristics. Differentially fired vessels exhibiting cloudy smudging—a mix of black, white, and gray on both the interior and exterior. Typically interiors and rims are black, and exteriors white, but often coloring is not clearly patterned. The profile of a Pascuala sherd reveals a blackened paste beneath areas of black surface and a yellowish brown paste beneath areas in which the vessel surface is white, indicating heavy smudging (compare with Palmas Black-and-White, below).

Illustration. Figure 9.15.

Frequency. 12 rims in the Chronological Sample.

Temporal Range. Pascuala Black-and-White appears in the Tzompantepec phase (4 percent) and in low frequencies during the Tlatempa (less than 1 percent) and Texoloc (less than 1 percent) phases.

Culture-historical Integrity. Acceptable, though relation

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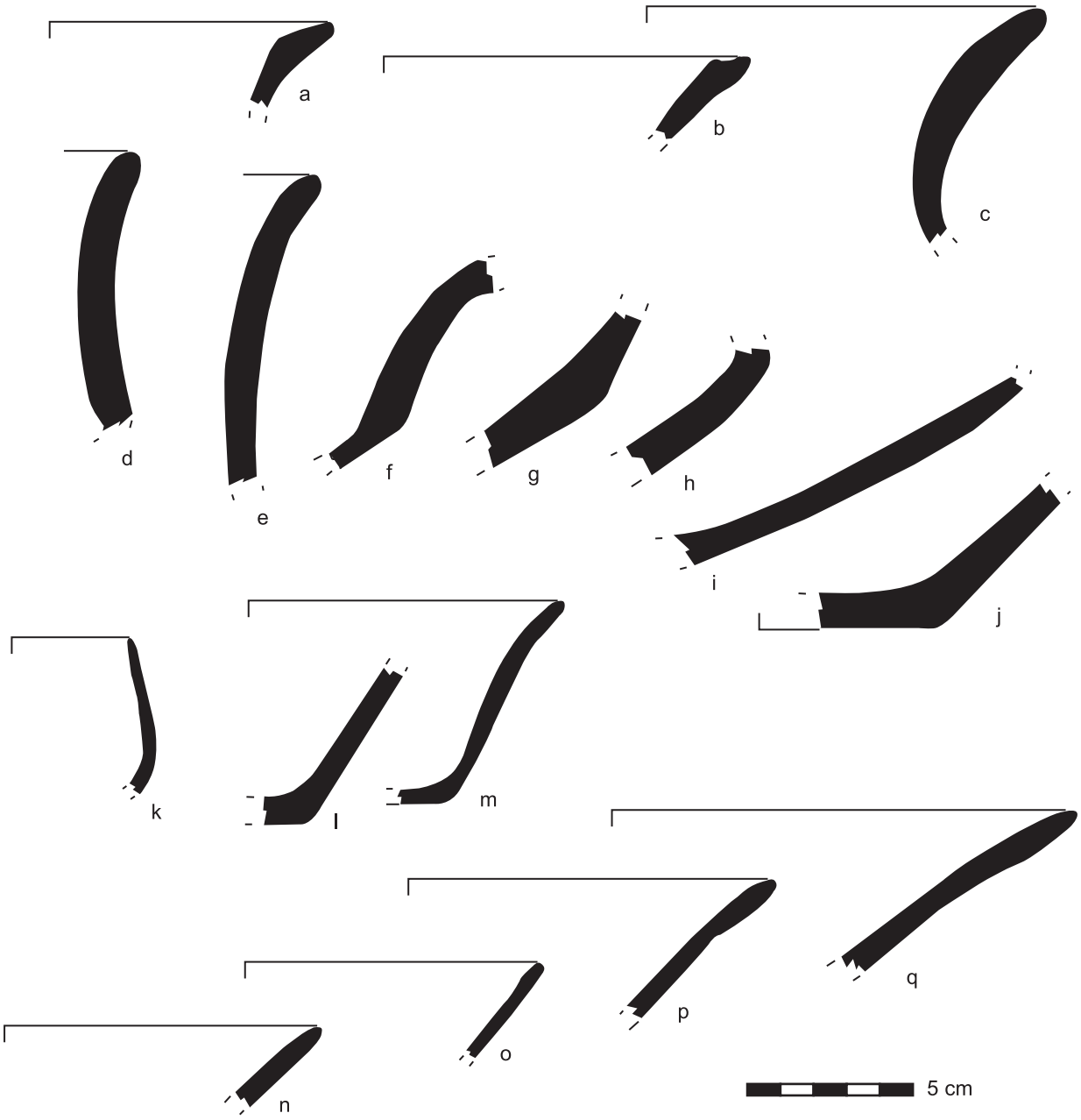

Figure 9.14. Metl Burnished Buff: (a–b) ollas; (c) olla, possibly Form F2; (d–j) large composite silhouette vessels; (k) bowl with insloping walls; (l–q) bowls with outsloping walls and flat bases. Proveniences: a-1698[A110-2S], b-1676[Lag-D2], c, d-1700[A110-2S], e-1696[A109-2S], f-1690-91[Lag-D2], g-1696[A109-2S], h-1700[A110-2S], i-1698[A110-2S], j-1685[Lag-D1], k-1699[Lag-D2], l-Laguna, m-1684[Lag-D1], n-1700[A110-2S], o-1684[Lag-D1], p, q-1696[A109-2S].

to Palmas Black-and-White could use further work.

Surface Treatment. Pascuala Black-and-White vessels were covered entirely with white slip and then well burnished. Vessels were differentially fired to achieve the characteristic white-and-black coloring, generally producing a grayish black tone (10YR 4/1, 3/1, 2/1) on the interior and rim of the vessel and a white exterior (10YR 8/1), although in some cases both surfaces had areas that were burned or cloudy (2.5Y 7/2, 10YR 7/2).

Paste. Laguna ware. Paste composition is similar to other types. The only difference is that the color of the paste indicates the differential firing technique: the portion of the paste that runs along the white exterior of the vessel is also light in color (yellowish brown, 2.5Y 7/4), while the

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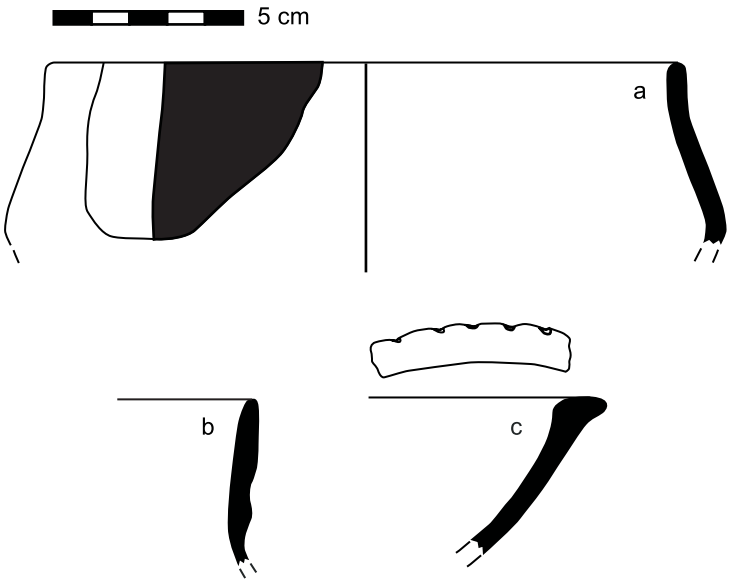

Figure 9.15. Pascuala Black-and-White, Tzompantepec phase: (a) restricted-rim bowl with incurving wall and vertical rim (note zones of white and black on exterior; interior is gray); (b) small olla with exterior gadrooning; (c) bowl with outsloping everted rim and interior ledge (note the scalloped rim; exterior is white and interior is grayish black). Proveniences (all from A46-2S): a-606+617+630+658, b-614, c-636.

interior portion of the paste is black (10YR 3/1).

Forms. Simple, rounded-walled dishes (B1-1), dishes with modified rims (B3-2, B3-5, B3-6), restricted rim bowls (B5-2), and ollas (O1-1, O4).

Decoration. One Tzompantepec and one Tlatempa olla were modeled on their exteriors to resemble gourds; one Tlatempa bowl had two grooved horizontal lines on its rim, while a Tlatempa beveled-rim bowl had an excised line break (Motif 11d) on its scalloped interior rim.

Potential Misidentifications. Pascuala Black-and-White is more heavily smudged than Palmas Black-and-White.

Comparisons. Probably related to the Grupo de Cocción Diferencial at Xochitécatl (Serra Puche et al. 2004:59, 64, 65).

Palmas Black-and-White

Distinguishing Characteristics. Slipped vessels in which white and black slips are intentionally contrasted, usually with the black inside and in a band around the exterior rim. Transitions between the two colors are cloudy. The paste underlying light and dark areas of the surface has *not* taken on the color of the surface.

Illustrations. Figures 9.16 and 9.17

Frequency. 129 rims in the Chronological Sample.

Temporal Range. Texoloc, Tezoquipan, and possibly Tenexac. It seems to peak right at the transition from Texoloc to Tezoquipan.

Culture-historical Integrity. Acceptable, though relation to Pascuala Black-and-White could use further work.

Paste. Laguna ware. Color varies from brown (5YR 5/4), through dark gray (5YR 4/2) to pitch black (0/0). The very dark colors are more common than in other types of Laguna ware and are often uniform throughout the entire paste rather than limited to a darker core.

Surface Treatment. The dark slip may range from pitch black (0/0) through very dark gray (5Y 3/1) to very dark grayish brown (2.5Y 3/2). The darker versions are well burnished and shiny; the lighter ones are moderately well burnished and may be matte. The white slip may be of a powdery and rather matte variety resembling the snow white (value 10 or 9) of the "standard" Yauhtentzi White but more often is a moderately well-burnished white sullied with gray or brown streaks or patches that give it an overall appearance closer to 2.5Y 8/1 or 10YR 8/1. It is to be remembered, however, that the white slip used in the Tlaxcalan Formative is in general very susceptible to post-depositional changes in color and gloss. In between the dark and the light there is usually a cloudy transition zone that ranges through several shades of gray in the same vessel. The dark surface finish typically covers the entire inside of the vessel and a wide band descending from the rim on the outside, turning to white along a roughly horizontal transition zone on the collar or upper body of the vessel.

How exactly this color contrast was achieved is debatable. We hesitate to call Palmas a genuine example of differential firing as the color differences on the surfaces are not observable (at least with the naked eye) in the underlying paste. The darker–than-usual color of the average Palmas paste makes us think that the vessels were intentionally smudged, perhaps by being placed, in a late stage of firing, upside down in a layer of fuel, with the lower parts of the outside protruding above it. On the other hand, in a few vessels in which an overlap of dark and light slip was observed, the light seemed to be on top of the dark. The grayish transitional zone sometimes conveys the effect of the application of a very dilute paint rather than one of a firing cloud. It is therefore possible that a thin layer of white was sometimes passed over the surface after firing to accentuate the contrast.

Forms. A form that crops up in particularly close as-

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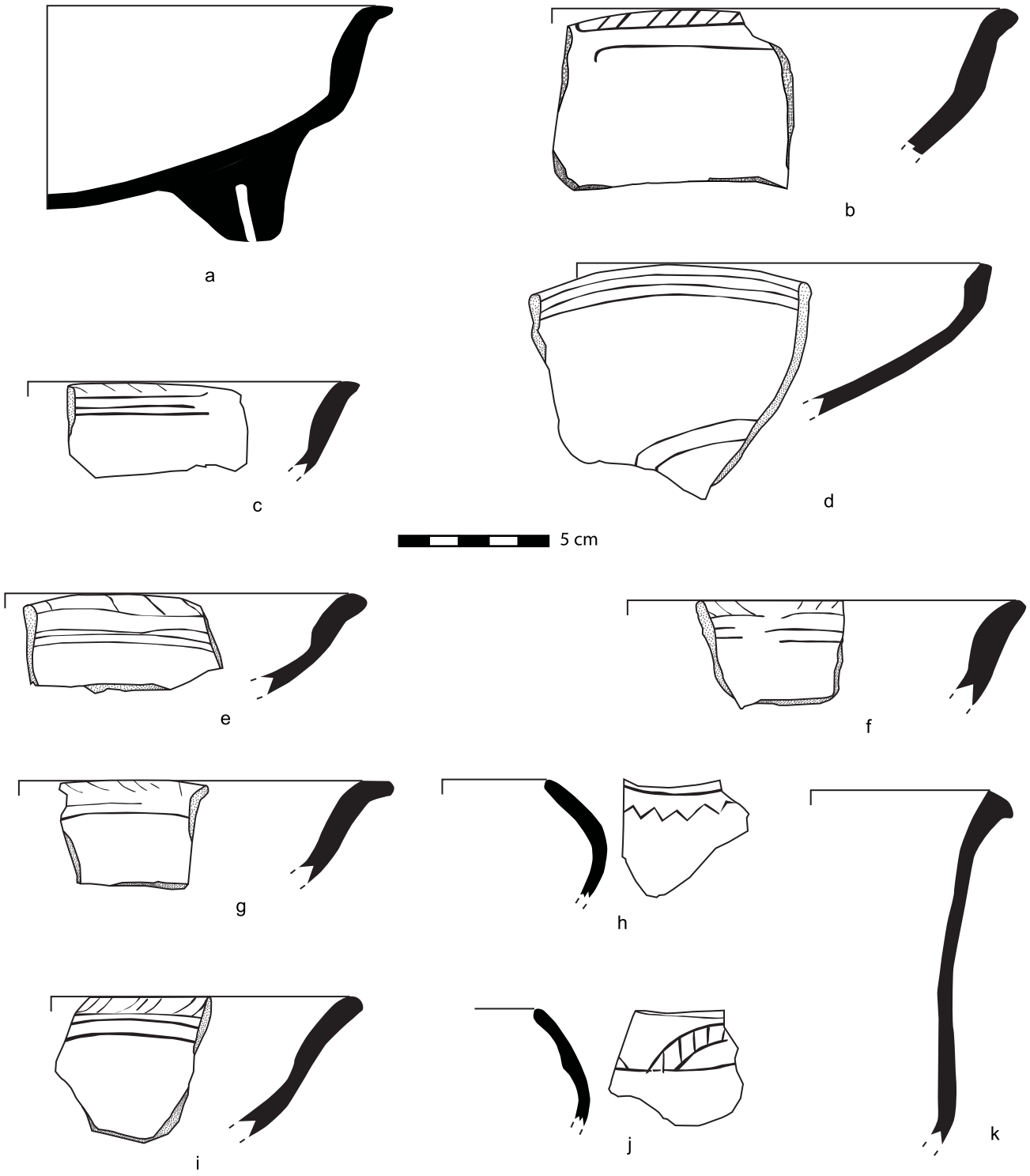

Figure 9.16. Palmas Black-and-White: (a–c, e–g, and i) composite silhouette bowls; (d) dish; (h, j) thin-walled tecomates; (k) composite silhouette vase with low shoulder. Proveniences: a-1479, b-104, c-1086, d and k-Las Mesitas road cut collection 12, e-343, f-1394, g-1469, h-1084, i-1186, j-1195.

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Figure 9.17. Palmas Black-and-White dish from Lot 1479; diameter 22 cm.

sociation with Palmas is a bowl or dish with an interiorly thickened and/or beveled rim; these vessels may be composite silhouette (B6-1b) or simple silhouette (B3-2). The "standard" composite silhouette bowl (B6-1a) is also very common. Thin-walled tecomates with gently rounded walls (T1-1) are fairly well represented. Minor forms include B2, B3-1, B3-3, B3-4, B3-5, B3-6, B4, O1-1, and O3.

Decoration. Post-slip grooving is common on the interior rim of bowls and the exterior rim of tecomates. Sets of parallel lines are common, either in short segments set diagonally across the rim or running in a circle around the circumference of the rim. The latter are often interrupted to form the mutiple line break motif (Motif 11). Less common are zigzags or wavy lines (motifs 6–8, 13). The rims of tecomates and collars of composite silhouette forms are sometimes molded.

Potential Misidentifications. Small rim sherds that do not reach down to the zone of white slip may be mistaken for Ardillas Black or Mesitas Brown. Pascuala Black-and-White is similar and possibly related but seems closer to a true differentially fired type in that the color contrasts visible on the surface penetrate into the paste.

Comparisons. Differentially fired types are common in the Mesoamerican Formative. The general trends seem to be for true differential firing to be replaced by imitations that consist of combinations of smudging and the direct application of contrasting slips (Cyphers 1992:90) and for a rim–body contrast to be joined or replaced by an inside–outside contrast (MacNeish et al. 1970:108–110). In Tlaxcala, Palmas was recognized as Texoloc Blanco Exterior Negro Interior by García Cook and Merino Carrión (1988:287). At Xochitécatl it was subsumed under Grupo de Cocción Diferencial (Serra Puche et al. 2004:59, 64–6), which may also include our Pascuala.

GRAY CLEAR THROUGH

This small group of sherds is readily distinguishable from the mass of brown, black, and smudged wares by its distinctive fine, light gray (Fermín) paste. The paste is evenly gray clear through the vessel wall. These sherds were imports to our region. We assign them to a single type.

Fermín Fine Gray

Distinguishing Characteristics. Fine-grained paste that is light gray clear through and highly burnished, with smooth and glossy gray surfaces. The paste contains a high proportion of volcanic ash and fine sand. It contrasts clearly in texture and color with the usual local paste (that is, Laguna ware). These vessels are probably imports from regions to the south, such as Puebla or Oaxaca, which are known for gray wares.

Illustration. Figure 9.18.

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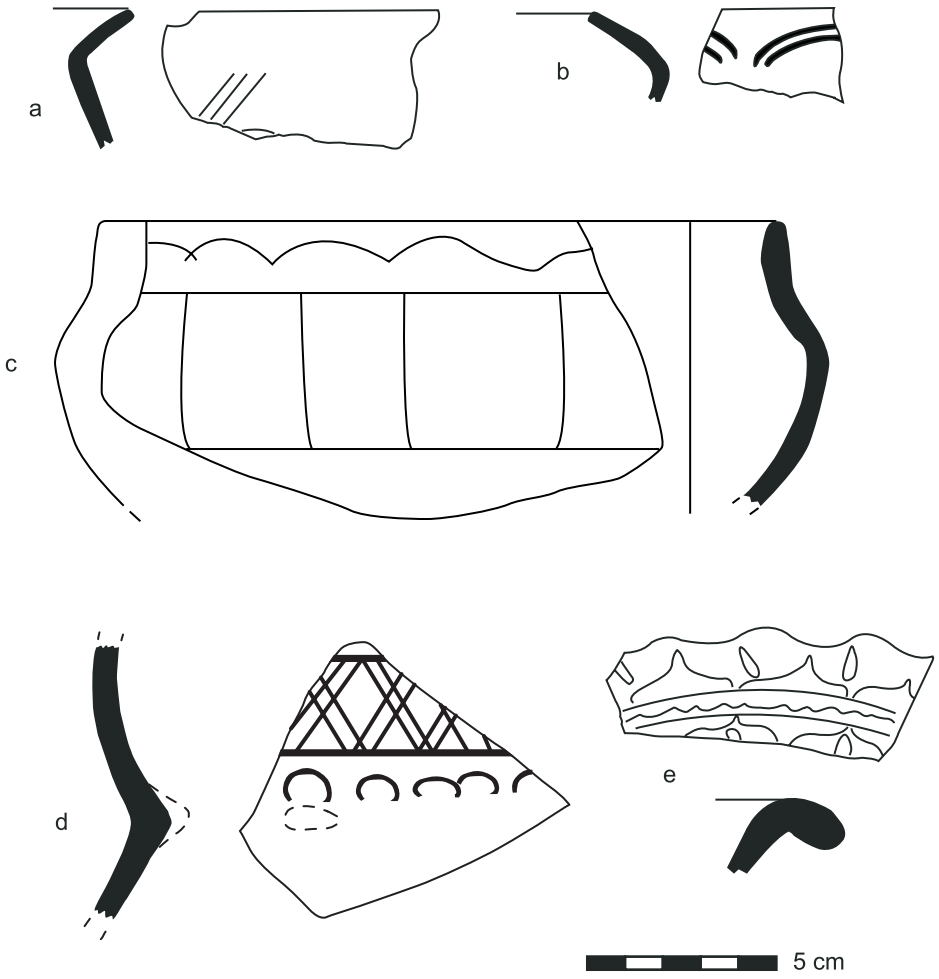

Figure 9.18. Fermín Fine Gray: (a) olla with exterior fine-line incising; (b) tecomate with shallow exterior incising; (c) restricted-rim bowl with incurving wall and vertical rim (note exterior incising); (d) composite silhouette bowl with unknown rim (note exterior excising and small nubbin handle); (e) bowl or dish with downcurving everted rim and scalloped lip, elaborately decorated with fine-line incising. Proveniences: a-1676[Lag-D2], b-1377(sh.1577), c-126[A19-1S], d-666[A54-2S], e-1721.

Frequency. Six rims in the Chronological Sample.

Temporal Range. Fermín Fine Gray is present from Tlatempa through Tenexac in very low quantities.

Culture-historical Integrity. Uncertain due to small sample size.

Paste. Fermín ware.

Surface Treatment. The surface of Fermín Fine Gray vessels is gray (GLEY1:4/N–5/N), highly burnished, and uniform in color. The color and luster of Fermín Fine Gray vessels were usually produced by careful burnishing rather than the application of slip. Occasionally we noted red pigment, possibly hematite, within the grooved and excised designs of Fermín Fine Gray vessels.

Forms. Rounded-walled bowls (B1-1), restricted-rim bowls (B5-2), bowls with downcurving everted rims (B3-4), tecomates (T1-1), and jars (O1-1).

Decoration. Shallow grooves, incising, or fine-line incising—the latter in complex designs appearing on vessel exteriors or interior rims.

Comparisons. Sherds of Fermín Fine Gray stand out in our collection as of distinct paste, and they are likely imported. We identified small numbers throughout our sequence. It is probable that they correlate with various distinct types from the Tehuacán Valley or Oaxaca; we suspect that multiple source locations are involved. Tlatempa-phase imports may be related to Socorro Fine Gray in the Valley of Oaxaca (Drennan 1976:22, 37–41). Later imports seem related to the range of burnished gray pottery at Monte Albán (Caso et al. 1967) and/or to Quachilco Gray in the Tehuacán Valley (MacNeish et al. 1970:120–134). Gris Fino (Serra Puche et al. 2004:97) has been identified at Xochitécatl and is a likely import there as well.

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ORANGE PASTE

A small selection of sherds from La Laguna with a uniformly orange paste and distinguished as a single type.

Apizaco Orange

Distinguishing Characteristics. Paste is typically fine, with volcanic ash or fine sand inclusions. It is uniformly orange.

Illustration. Figure 9.19.

Frequency. 14 rims in the Chronological Sample.

Temporal Range. Tenexac.

Culture-historical Integrity. Could relate to later Thin Orange traditions of the highlands.

Paste. The color of the paste is uniformly orange (2.5YR 7/6, 7/8, 6/6, or 6/8).

Surface Treatment. Polished without slip or slipped light red-orange (2.5YR 4/6–7/6).

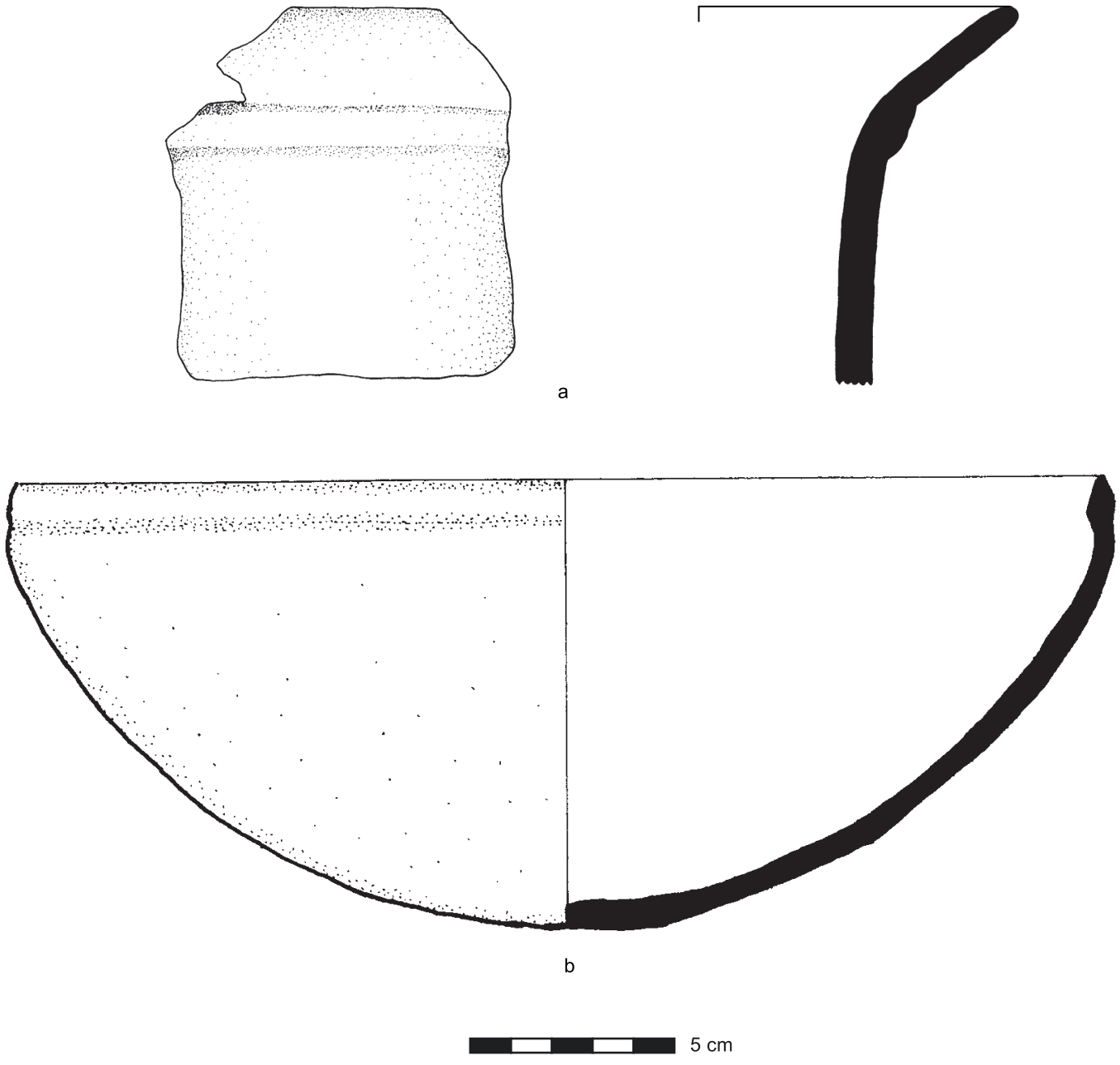

Figure 9.19. Apizaco Orange: (a) jar with outflaring rim (Form J2, PALL Lot 1461); (b) hemispherical bowl with beveled rim (Form BR1a, PALL Lot 1853, Feature 133).

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Forms. The most common form is the simple hemispherical bowl, a complete example of which was found covering a neonate burial in Area F of La Laguna (Figure 9.19b). Also found as jars.

Decoration. None.

Comparisons. An uncommon type that nevertheless appears to be diagnostic for Tenexac.

WHITE

White-slipped sherds divided readily into two types based on paste and slip qualities. The first, Ceniza White, is of minor importance at the beginning of the sequence and then disappears; the second, Yauhtentzi White, persists throughout. Vessel forms and the prevalence of decoration changed dramatically over the lengthy period of use of Yauhtentzi White, but we were not able to split this long-lasting type based on characteristics of paste or surface treatment.

Ceniza White

Distinguishing Characteristics. Distinguished by the inclusion of ash in the paste and a shiny, bright white slip.

Illustration. Figure 9.20

Frequency. Three rims in the Chronological Sample.

Temporal Range. A rare but readily distinguishable type in Tzompantepec and Early Tlatempa.

Culture-historical Integrity. Apparently strong, despite small sample size.

Paste. Ceniza ware.

Surface Treatment. Vessel surfaces are covered with a thick, shiny white slip that varies between pure white and light gray (2.5Y 8/1, 10YR 8/1, GLEY1:5/N-7/N). The slip is well burnished, lustrous, and hard. The pure, glossy white of the slip is distinctly different from the usual appearance of Yauhtentzi White and, together with the distinctive paste, merits identification of a type even with a small sample.

Forms. Our rim sample includes small jars with vertical necks and direct rims (O4) and a dish with an outcurving everted rim (B3-6). There is also a base fragment from a flat-based dish.

Decoration. The B3-6 dish has two shallow, circumferential post-slip incisions on the interior rim (Figure 9.20b), and the flat-based dish has multiple, parallel pre-slip incisions (Figure 9.20c).

Comparisons. None in the immediate region. The paste and surface treatment resemble those of Pilli Blanco Tardío (Niederberger 1976:123–125; Ramírez et al. 2000:49–50), but our collection is somewhat later and the forms are distinct.

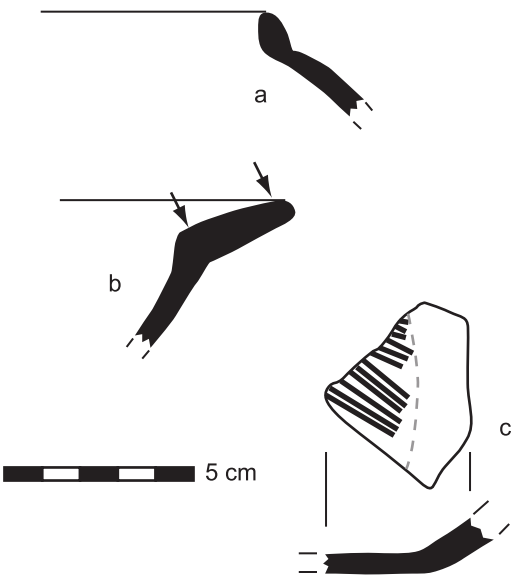

Figure 9.20. Ceniza White, Tzompantepec phase: (a) olla with vertical neck and rim; (b) dish with outsloping everted rim and interior ledge (note two parallel incised lines on interior rim); (c) flat base with excised decoration on interior. Proveniences (all from A46-2S): a-606, b-658, c-620.

Yauhtentzi White

Distinguishing Characteristics. White-slipped vessels in Laguna paste. Surfaces tend toward matte rather than glossy. During the Tlatempa phase, its time of greatest prominence, Yauhtentzi White is characterized by post-slip incising and excising that exposes the underlying reddish paste.

Illustrations. Figures 9.21 through 9.26.

Frequency. 1,037 rims in the Chronological Sample.

Temporal Range. An important component of Tzompantepec (32 percent), Early Tlatempa (24 percent), and Late Tlatempa (38 percent). The type declines in Texoloc (18 percent) but still constitutes a small percentage of Tezoquipan and Tenexac assemblages.

Culture-historical Integrity. Strong, with frequency gradually declining.

Paste. Laguna Ware.

Surface Treatment. Vessel surfaces are covered with a generally thick white slip with a matte finish. The surface is burnished and soft to the touch. In some instances the slip appears thin and powdery, but this is the result of post-depositional processes. The slip varies in color from pure white to yellowish-white (10YR 8/1–8/3, 2.5Y 8/1–8/4, 2.5Y 7/1). Almost all vessels are slipped on both the interior and exterior, although restricted rim vessels (jars, tecomates) do not have interior slip.

Forms. The Tzompantepec-phase collection is characterized by the presence of dishes with outsloping sides and direct rims (32 percent). Some of these have flat bases (Figure 9.22p–q), a feature that will not recur in the assem-

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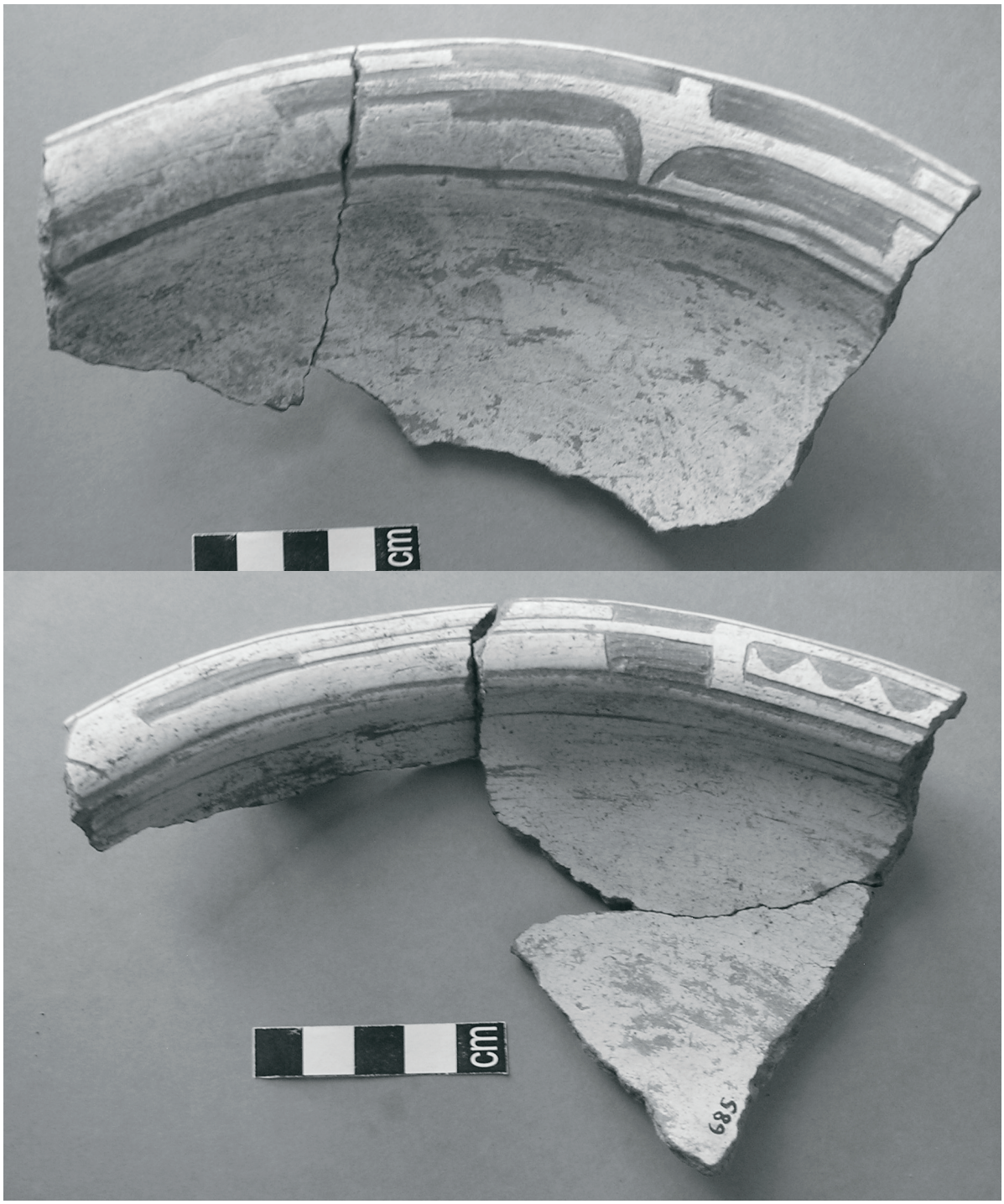

Figure 9.21. Yauhtentzi White, showing post-slip incised and excised designs. Proveniences, top to bottom: 915[A73-2S], 681+685[A54-2S].

blage until the Tenexac phase; others have rounded bases. Bowls with rounded walls (B1-1, B4) are important, as are restricted-rim bowls in various forms (B5-1, B5-2). Also present are B3-2, B3-5, B3-7, B3-8, O1-1, O4, and O5-1.

In Tlatempa, outsloping-walled bowls fall off dramatically, while rounded-walled bowls (B1-1, B4) and restricted-rim bowls (B5-1) remain important. Predominant in that phase, however, is a proliferation of modified-rim dishes (B3-2, B3-3, B3-4, B3-5, B3-7, B3-8). Bowls with outsloping everted rims and an interior ledge (B3-6) are particularly diagnostic of this phase (for example, Figure 9.23o–v). Also present are B10-1, B11, O1-1, O4, O5-1, T1-1, and a feeble trace of classic composite silhouette bowls (B6).

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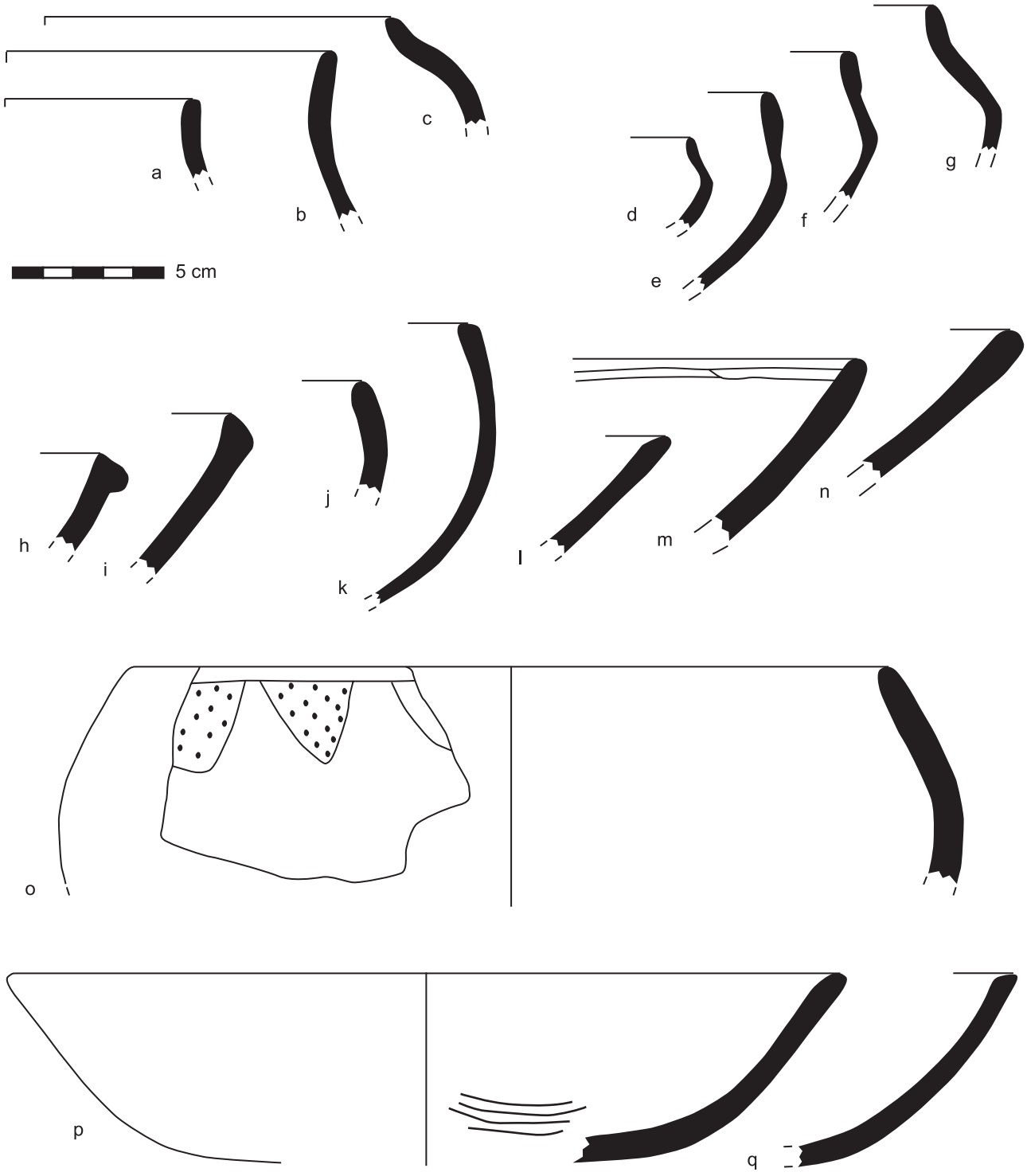

Figure 9.22. Yauhtentzi White, Tzompantepec phase: (a–c) small ollas; (d–g) restricted-rim bowls with recurved rims; (h) bowl with exterior thickening at rim; (i) bowl with slight recurving of rim to interior; (j, k, o) hemispherical bowls; (l–n, p, q) bowls with outsloping walls (note the almost flat bases of p and q). Proveniences (all from A46-2S): a-646, b-653, c-650, d-657, e-620, f-630, g-615, h-588, i-606, j-641, k-620+658, l-593+606, m-605, n-620, o-588, p-635+649, q-620.

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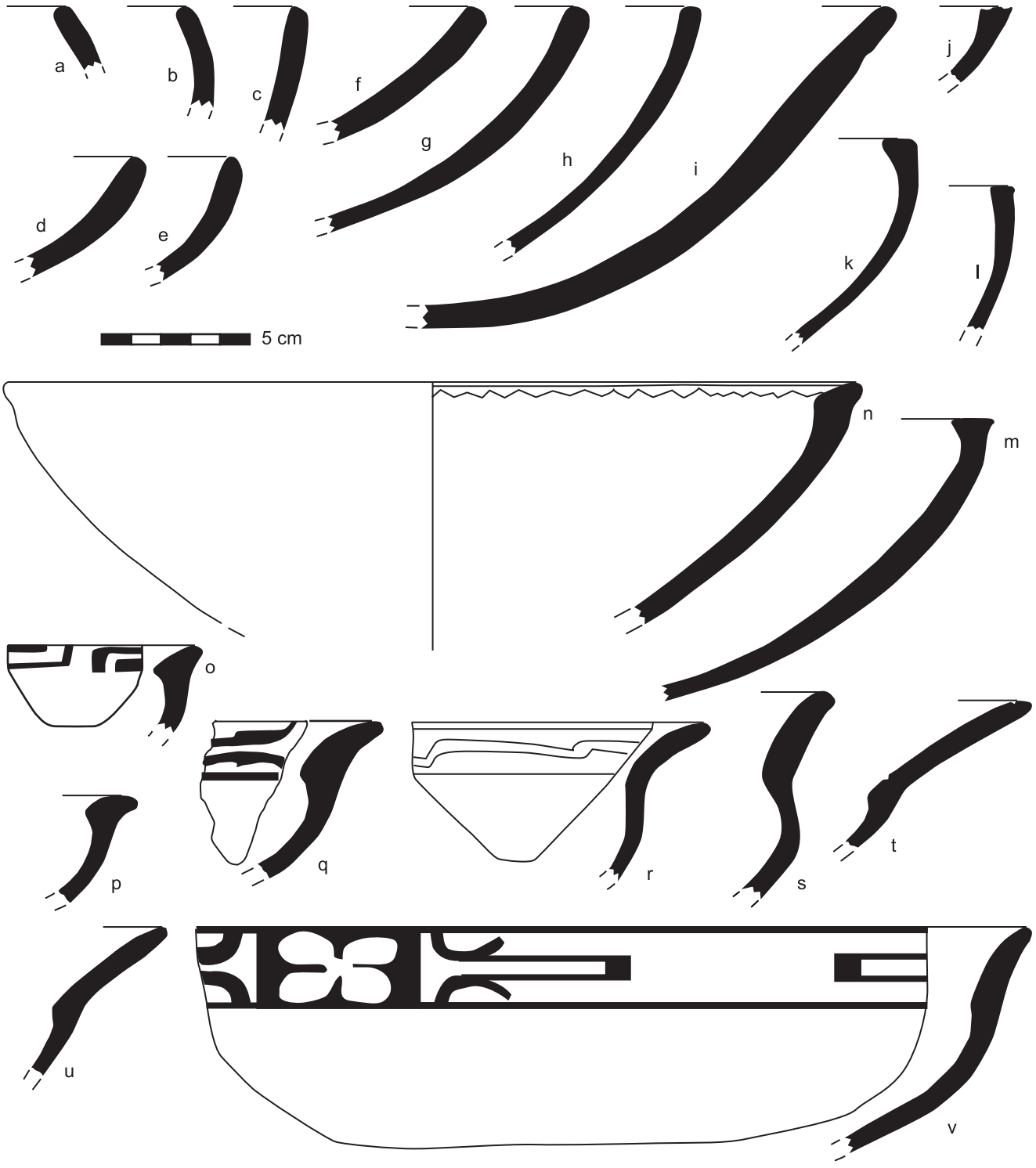

Figure 9.23. Yauhtentzi White, Tlatempa phase: (a, b) hemispherical bowls; (c–h) dishes with rounded walls; (i) dish with outsloping walls; (j–m) bowls with flattened lips; (n) bowl with beveled rim; (o–r, t–v) dishes with outsloping everted rims and interior thickening; (s) composite silhouette bowl. Proveniences (from A68-4S unless otherwise noted): a, c, r-963, b-845, d-909, e-934, f-849, g-830+837+842+859, h-734[A63-2S], i-931[A74-1S], j-29[A4-4S], k-933+934, l-28[A4-4S], m-844+886+888+953[A73-2S], n-744[A64-2S], o-860, p-111[A17-1S], q-527[nonfeature, Amomoloc], s-909+933+934+963, t, u-25[A4-4S], v-826+830+842.

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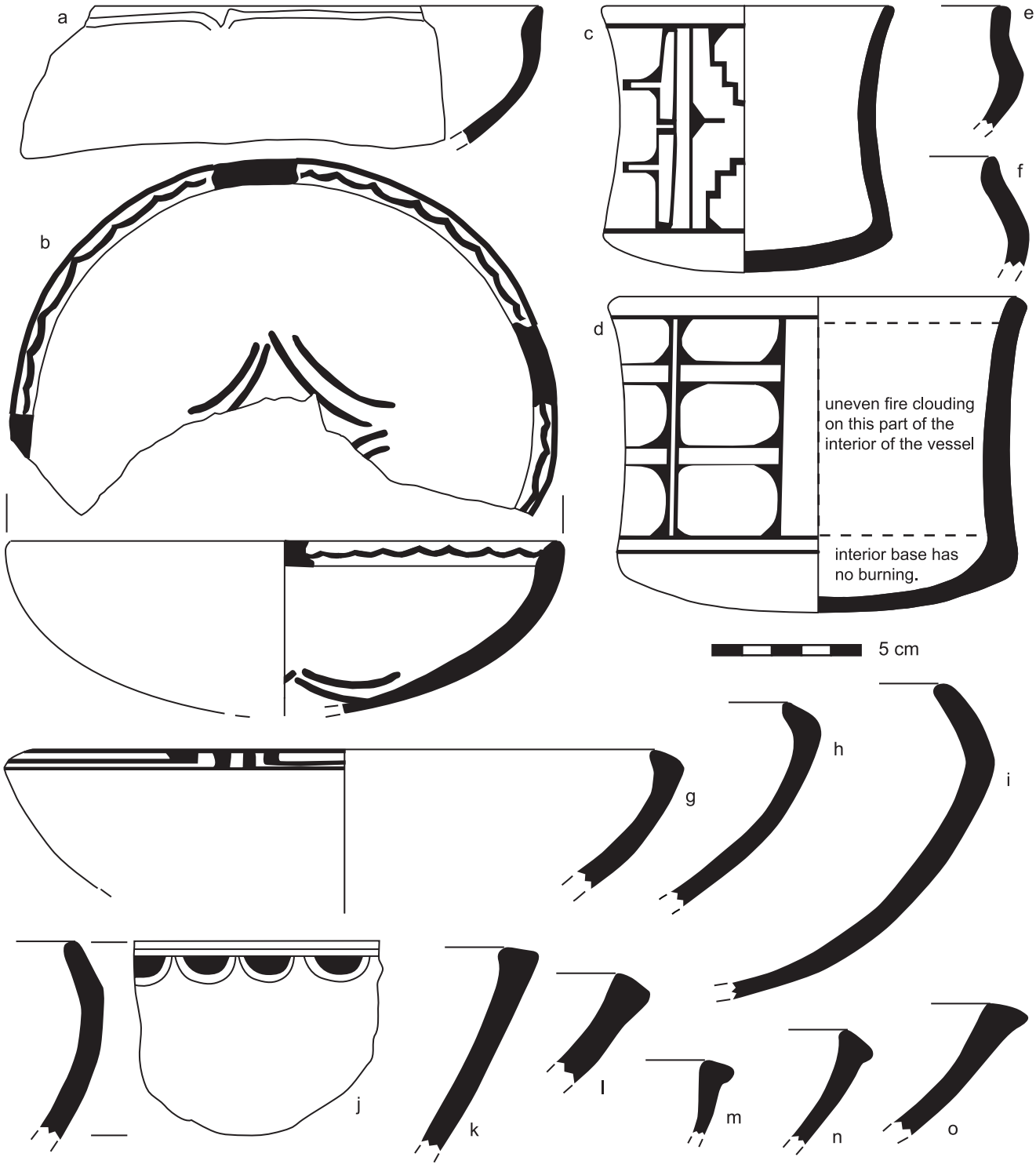

Figure 9.24. Yauhtentzi White, Tlatempa phase: (a–b) bowls with beveled rims; (c–d) vases; (e) restricted-rim bowl; (f) small olla; (g, k) bowls with slight interior recurving at the rim; (h–j) restricted rim bowls with incurving walls; (l–o) bowls with exteriorly thickened rims. Proveniences: (a–b) A4-4S, a-41, b-24; (c, d, i) A68-4S, c-895+933+962+963, d-843, i-845+889+909; (e, f, l, m) A73-2S, e-886, f-920, l-884, m-906; g-666+686+702[A54-2S]; h-734+740[A63-2S]; (j, n, o) nonfeature, Amomoloc, j-639, n-840, o-846+899, k-847[A71-1S].

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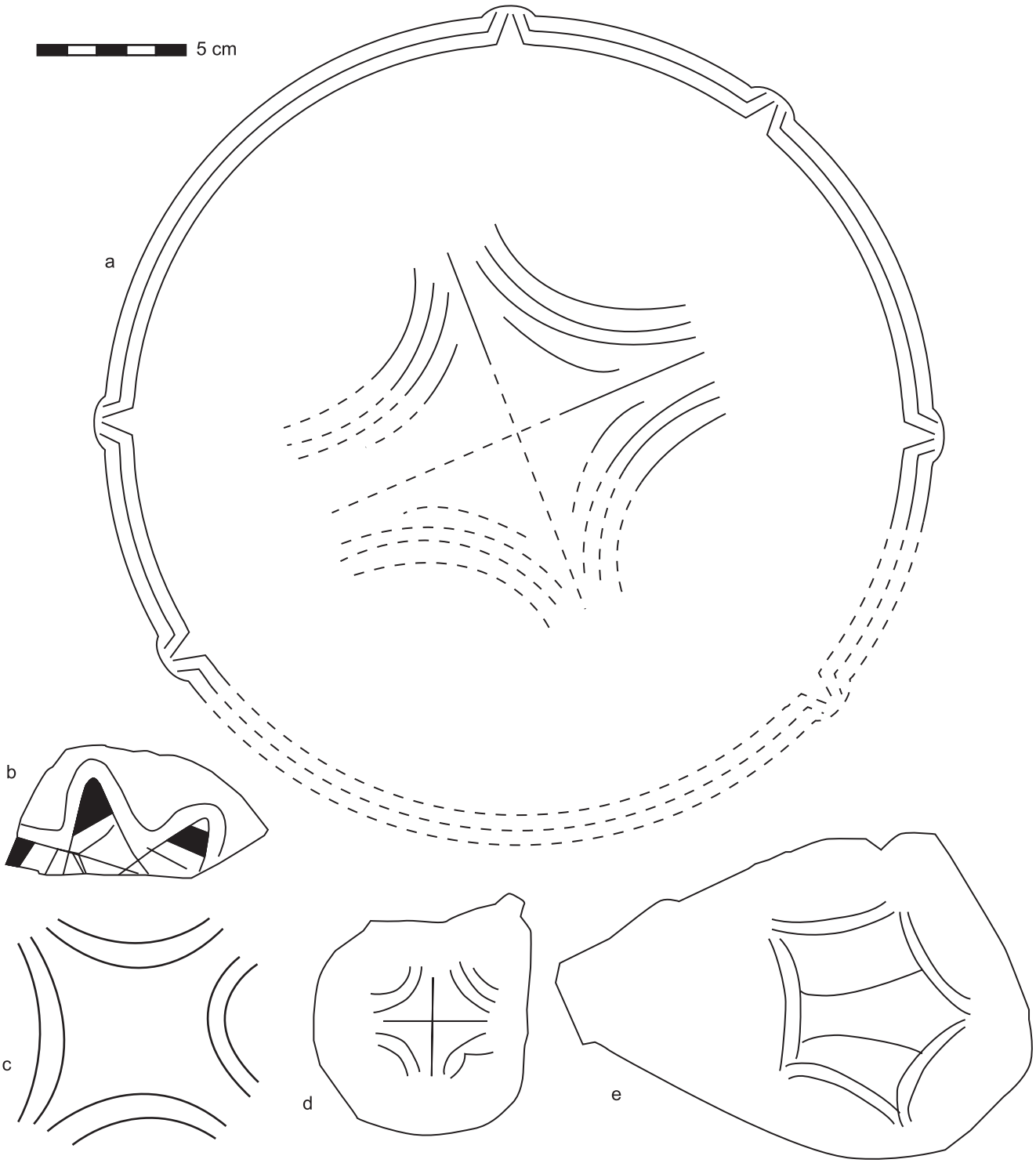

Figure 9.25. Yauhtentzi White, incised and excised interior bowl bases: (a) Tzomantepec phase; (b–e) Tlatempa phase. Proveniences: a-588+593+596+646+658[A46-2S], b-111[A17-1S], c-668[A53-1S], d-714[A57-2S], e-703[A54-2S].

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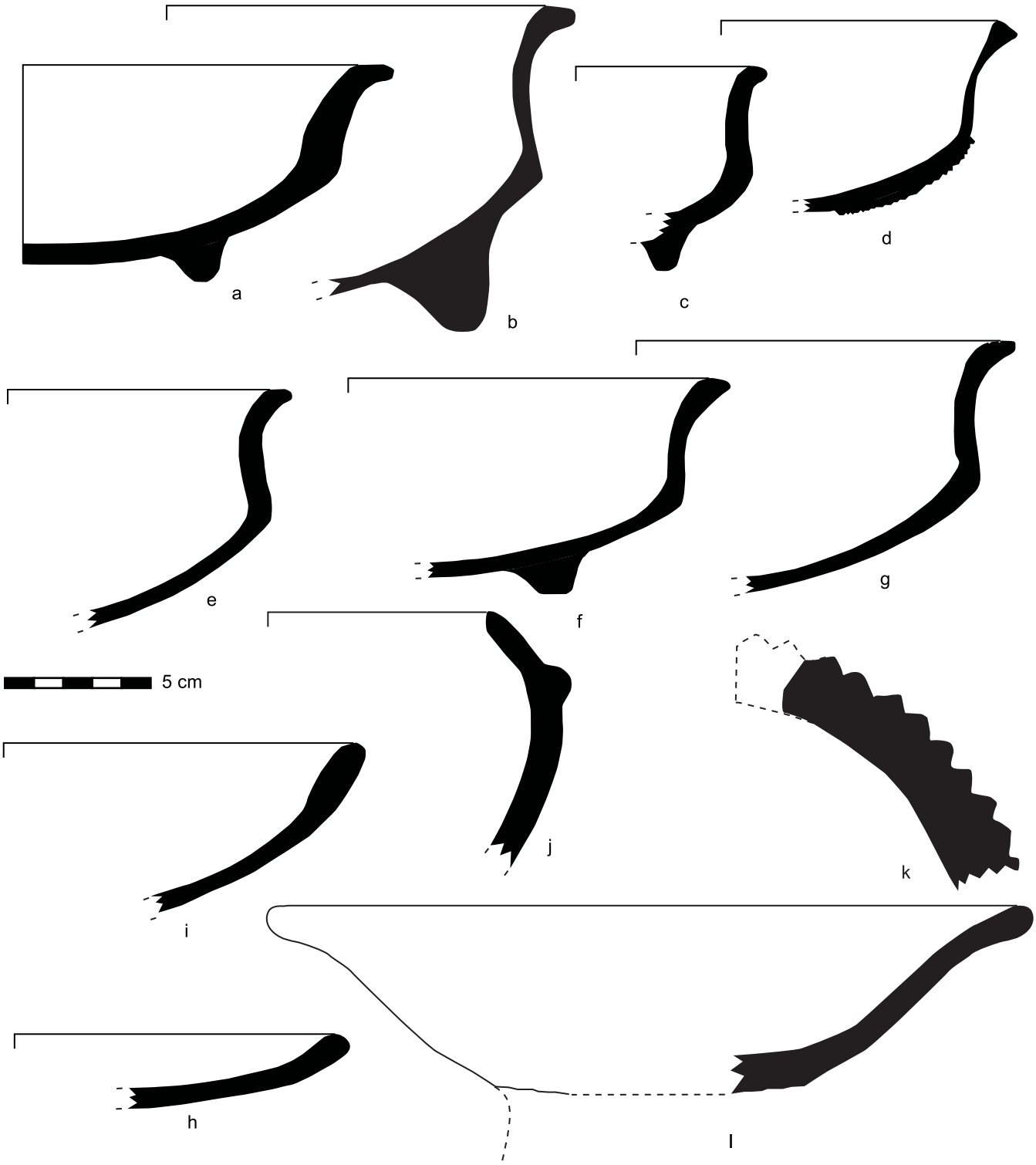

Figure 9.26. Yauhtentzi White, Texoloc and Tezoquipan phases: (a–g) composite silhouette bowls; (h) plate; (i) dishes with rounded walls; (j) tecomate; (k) basket-style handle; (l) probable censer; k and l seem to belong to the same kind of censer. Proveniences: a-1398, b-Las Mesitas road cut collection 12, c-1102, d-1042+1043+1047, e-1482, f-1087, g-1619, h-1157, i-1087, j-1662, k-375, l-1355.

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The Tlatempa patterns generally continue into the earlier part of Texoloc, though there is a declining overall frequency for the type and a rising importance of composite silhouette bowls (B6). The proliferation of modified-rim dishes (B3s) gradually falls out of the assemblage until, by Tezoquipan, all that remain are beveled- and everted-rim dishes (B3-2, B3-5). Other forms present in Tezoquipan are B1-1, B2, B4, B6-1b, B6-1c, O1-1, P2, and T. White-slipped pottery is rare in Tenexac (12 rims in the Chronological Sample). Forms include B3-2 (most common), B1 or B2, B3-4, B4, B5, and B6-1a.

Decoration. During the Tzompantepec phase, designs were grooved and/or incised on various parts of vessels, although exterior and exterior rim decorations were more common. Designs included simple horizontal lines (Motif 1; 43 percent), cross-hatching (Motif 5; 19 percent), upside-down triangles (Motif 14; 14 percent), and line breaks (motifs 11a, 11c; 10 percent), as well as one star on the interior base of a bowl (Figure 9.25a).

With the Tlatempa phase, there was a dramatic increase in the variety of motifs depicted on Yauhtentzi White vessels, and the location of the motifs shifted primarily to the interior rim of bowls (58 percent of decorated white vessels), though exterior decoration was still common (20 percent of decorated white bowls). The most common decoration involved simple incised, grooved, and excised horizontal lines running along the rim of a vessel (Motif 1; 37 percent). Excised motifs involving blocks and lines in a variety of configurations (motifs 51–53; 23 percent) were popular, as were line breaks (Motif 11a–e; 13 percent), wavy lines (grooved and excised; motifs 6–8, 13 percent), and stars (Motif 12; 4 percent—this statistic does not include decorated bases that were not attached to a rim sherd), among others. Occasionally, incised, grooved, or excised motifs, often resembling eyes, were coupled with scalloping along the rims of dishes. Among vessels with exterior decoration, cups with elaborate excised designs make up a small but interesting proportion of the sample (Figure 9.24c–d).

In the Texoloc phase, incising decreases, and grooving and excising predominate. Designs continue to be located along the interior rim of vessels (67 percent) and on the exterior (18 percent). Simple horizontal lines continue to be the dominant decorative motif (Motif 1; 43 percent), but the excised block and line combinations so popular in the Tlatempa phase (motifs 51–53) drop to 6 percent of the decorated white sample. Line breaks continue to be important design motifs in the Texoloc phase (Motif 11a–c; 12 percent), as well as grooved and excised wavy lines or semicircles (Motif 8; 24 percent). Stars (Motif 12), the most seemingly "iconographic" motifs of the Tlatempa phase, are notably absent from the Texoloc sample at Tetel.

Potential Misidentifications. This is the primary white type in the collection, readily distinguishable from Ceniza White by paste and the quality of the surface finish. It is also readily distinguishable from Zahuapan Coarse (which often has a thin, fugitive white wash) in the thickness of the slip and the quality of surface finish. See also Yauhtentzi Red-on-White, which is essentially Yauhtentzi White with painted decorations in red slip.

Comparisons. This type subsumes Tzompantepec Blanco-Amarillento, Tlatempa Blanco, Tlatempa Blanco Inciso, Tlatempa Blanco Excavado, and Texoloc Blanco, previously identified in Tlaxcala by García Cook and Merino Carrión (1988). Also essentially the same type are Blanco Esgrafiado y/o Excavado (Serra Puche et al. 2004:55) and Laguna White Incised: Variety 75 (Snow 1966:208).

We note general similarities with Cesto Blanco Tardío (Niederberger 1976:132–134) and Cesto Blanco Zacatenco (Ramírez et al. 2000:81–83) in the Basin of Mexico and with Amatzinac Blanco at Chalcatzingo (Cyphers 1987:211–222). By the Tetelpan phase in the Basin of Mexico, white-slipped bowls had begun to have rounded bases and outcurving walls similar to popular Yauhtentzi White bowl shapes during the Tlatempa and Texoloc phases (Niederberger 1987:Figure 569). The classic double line breaks of the Manantial phase were replaced by motifs emphasizing scalloping lines during the Tetelpan phase (Niederberger 1987:figures 475, 476, 568), and while none of the common Tetelpan motifs would be out of place in Amomoloc or Tetel, the excised decoration so popular on Tlatempa-phase bowls in Tlaxcala is notably missing at Tlapacoya–Zohapilco.

At Chalcatzingo, Cantera-phase Amatzinac White bowls are almost comparable to Yauhtentzi White bowls, yet the common shape seems to have a slight break where the rounded base meets the wall. It has walls that flare outward more than Tlaxcalan examples and has occasional downcurving rims (Cyphers 1992:figures 3.13, 3.15, 3.21, 3.22). The Middle Formative motifs at Chalcatzingo are much more heterogeneous than those depicted for the Basin of Mexico (Cyphers 1992:figures 3.23, 3.26, 3.27) and include excised blocks, lines, and wavy lines. While many are similar to those found in our Tlatempa- and Texoloc-phase motifs—certainly the building blocks of the motifs in Chalcatzingo are quite comparable—they are combined in distinct ways that would be strikingly out of place if found at Amomoloc or Tetel. The elaborate designs on the interior bases of bowls in the Basin of Mexico and Chalcatzingo are also quite distinct from the simple stars and circles found on the interior bases of Yauhtentzi White bowls in central Tlaxcala.

In the Tehuacán Valley, double line break motifs appeared on white pottery (Canoas White and Coatepec White), though the vessel shapes are different than those found in Tlaxcala (MacNeish et al. 1970:figures 32, 62). Flat-based bowls seem to be more common than rounded bowls, yet there are still some similarities in rim shape, as we see some interior thickening (MacNeish et al. 1970:figures 34, 35, 42, 62). Classic double line breaks (our Motif 11) comprise the majority of interior rim decoration on Tehuacán's white-slipped bowls, and, as in the Basin of Mexi-

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co, excised block motifs are notably absent from the design repertoire.

In the Valley of Oaxaca, double line break motifs began to appear in the San José phase, usually on Atoyac Yellow-White bowls with flat bases and outleaning or vertical walls, and increased in popularity during the Middle Formative (Flannery and Marcus 1994:140). While horizontal lines that curve up to meet the rim (our motifs 11a and 11c) and wavy lines (motifs 6–8) are quite common in the Valley of Oaxaca, they involve variations that make the Oaxacan examples distinct from those found in Tlaxcala (Flannery and Marcus 1994:figures 12.19–12.21). The excised designs (motifs 51–53) so popular at Chalcatzingo and in Tlaxcala are absent in the Valley of Oaxaca as well.

RED AND RED-AND-SCRAPED

Monochrome reds proved inseparable from bichromes in which red-slipped areas appeared in juxtaposition with areas left scraped and unburnished. Note that combinations of red slip with (well-) burnished or slipped brown are distinguished as an entirely different type-class. That decision seems to better represent patterning in the assemblage than would rigid adherence to an a priori distinction between monochrome and bichromes in this case.

Laguna Red

Distinguishing Characteristics. Slipped red over the entire surface of the vessel, except the inside of closed forms. Sometimes incised.

Illustrations. Figures 9.27 and 9.28.

Frequency. 933 rims in the Chronological Sample.

Temporal Range. Minor type in Tlatempa, rising markedly in Texoloc and reaching maximum popularity in Early Tezoquipan. Continues into Tenexac.

Culture-historical Integrity. Strong.

Paste. Laguna ware. Apart from the other attributes mentioned in the ware description, paste may be reddish (5YR 5/6, 5YR 6/4). Occasionally there is a gray core.

Surface Treatment. The red slip is well burnished on all surfaces. It often displays subhorizontal streaks of slightly different hue, suggesting stick polishing. The tones of red vary widely. More than half are a rather light red, approaching orange (hue 2.5YR, value 4–5, chroma 6–8). This can be regarded as the "standard" Tlaxcalan red. More intense red (10R 4/6 to 4/8) is common, dark red (2.5YR 3/6) is rare, and yellowish red (5YR 4/6) is very rare. There is also a sizable group of rather dark and dusky reds (hue 7.5R–10R, value 3–5, chroma 1–6). Where these colors are found, however, they tend to coexist in a very wide range on the same vessel, in the form of clouds or streaks of different tones, often ranging to also include the previously described lighter tones. They are also more common on the outside than the inside of vessels. This set of observations leads us to believe that these dark and dusky reds are the result of manufacturing slips, probably at the firing stage, and that the lighter tones were usually aimed for. Incisions are rare in this type. When they occur, they come in the form of post-slip incising or grooving of the rim or the outside of the collar or upper body of the vessel.

Forms. Tecomates, ollas, and rounded-walled bowls dominate the Tlatempa collection (T2, O1-1, O1-2, B1-1). Also present are B3-5, B3-6, B3-7, B3, B3-8, and B10-1. Tecomates in particular continue to be prominent in Texoloc (37 percent) but thereafter decline. Also present in Texoloc are B1-1, B3-4, B3-5, B3-6, B4, B5-1, B5-2, B6-1a, B6-1b, B11, O1-1, O3, and O4. Particularly common in Tezoquipan are composite silhouette bowls and dishes (23 percent, with much of the 17 percent unidentified bowls probably composite silhouette as well). Rounded-walled bowls (B4) are also important. Other forms in that phase include B1-1, B3-2, B3-5, B3-6, B3-8, B5-1, B8, B9-1, B11, F, F2, O1-1, P2, T1-1, and T2. The basic Tezoquipan pattern of composite silhouette and rounded-walled bowls continues into Tenexac, but a notable addition to the assemblage is outsloping- and outcurving-walled bowls, at least some with flat bases (B2, B2-3, B2-4).

Decoration. Incised lines occasionally run along the circumference of the interior or exterior rim, with the multiple line break being the most common motif (Motif 11). The outside of the collar or upper body of a few vessels is incised with horizontal or stepped lines (Motif 13).

Potential Misidentification. The simplicity of the surface treatment of Laguna Red means that it is often a residual type for any reds, especially when dealing with small rim sherds from vessels that may have carried a more elaborate surface treatment somewhere further along the profile or circumference of the vessel. This problem is compounded by the fact that, with the possible exception of Laguna Dark Red, there is little distinction between the tones of red observed in our different types. The problem is minor for Gazca White-on-Red and Xalmonto Red-and-White, as the white paint or slip is usually applied near the rim. De Haro should be distinguishable on the basis of paste. The problem is somewhat more serious for small sherds of Potrero Red-on-Brown, but these will usually display a different surface treatment on at least one side. The problem is major for Laguna Red-and-Scraped and Tejales, as the scraped bands that distinguish the former appear some way down the profile of the vessel and the peculiar incisions that distinguish the latter may not cover the whole circumference of the vessel. These two types will therefore have to be lumped with Laguna Red for most analytical purposes.

Comparisons. For this type we have kept the name introduced by Snow (1966:201). However, due to the different weights we give to scraping (more) or incising (less) combined with red slip, we would put some of the sherds that Snow classifies as Laguna Red in Laguna Red-and-Scraped, while we would subsume most of his Laguna Red Incised type in our Laguna Red. García Cook and Meri-

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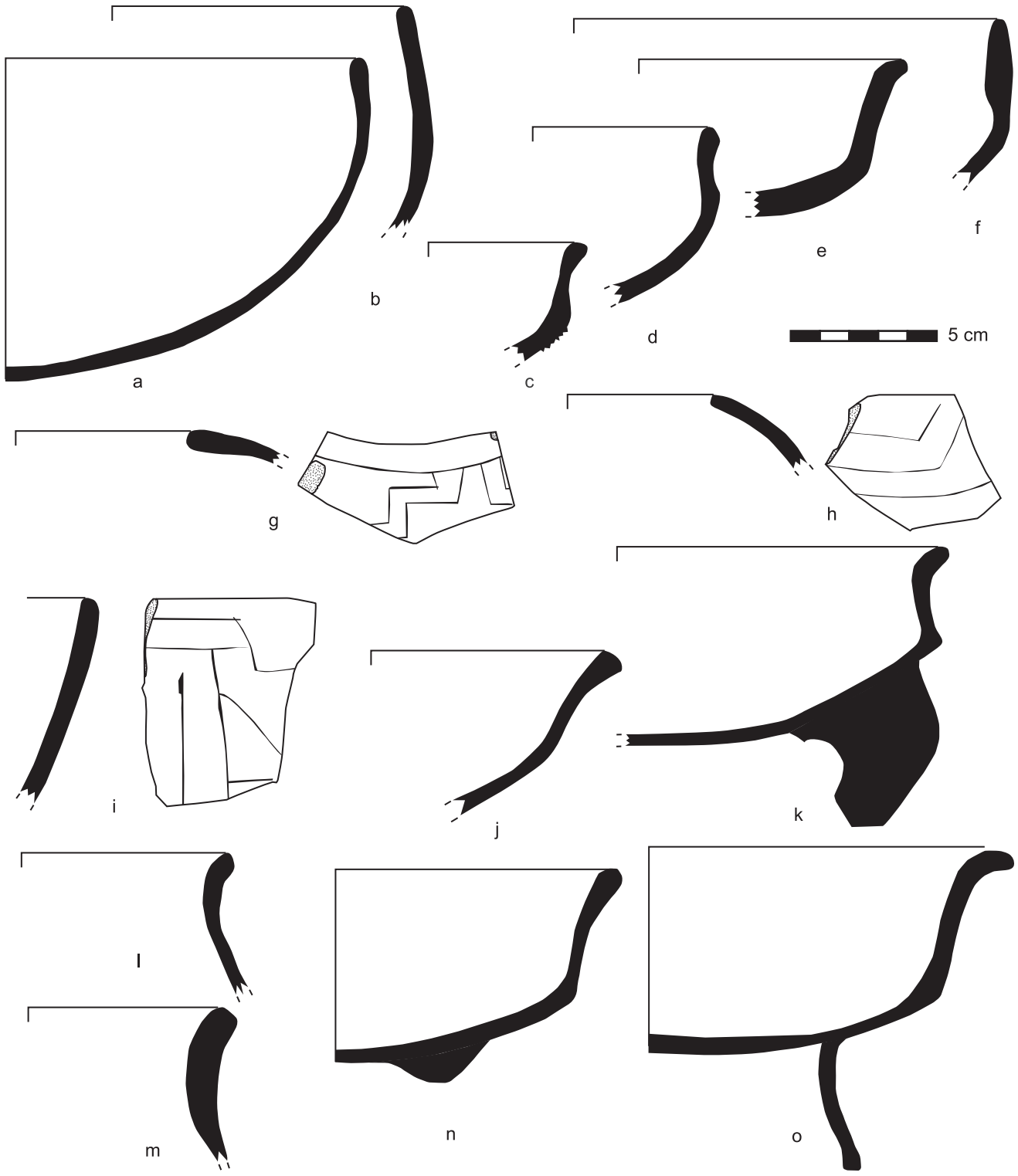

Figure 9.27. Laguna Red: (a–b) hemispherical bowls; (c, e, j, k, n, o) composite silhouette bowls; (d–f) unrestricted composite silhouette bowls with vertical collars; (g–h) tecomates; (i) kidney-shaped bowl; (l–m) ollas. Proveniences: a-1428+1449, b-1248, c-1210, d-1405+1406+1408+1490+1491, e-1248, f-1210, g-1450, h-1437, i-1190, j-343, k-1316+1391, l-1065, m-1391, n-1398, o-1447.

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no Carrión (1988) recognize the existence of red-slipped vessels since the Tzompantepec phase. Their Tlatempa Rojo appears to correspond best to our Laguna Dark Red, described below. Starting with the Texoloc phase, García Cook and Merino Carrión's descriptions of reds resemble our observations of Laguna Red. The sum of their Texoloc Rojo, Tezoquipan Rojo Interior y Exterior, and Tezoquipan Café Rojizo would be the equivalent of the sum of our Laguna Red, Laguna Red-and-Scraped, and Tejales Red. At Xochitécatl, the sum of our Laguna Red and Laguna Red-and-Scraped would correspond to the sum of Grupo Rojo and a certain proportion of the Rojo Esgrafiado type (Serra Puche et al. 2004:54–55, 85–89). Their description and illustrations of the streaky surface finish match our observations. In the Basin of Mexico, a close equivalent of Laguna Red is the type described by Ramírez et al. (2000:109–110) as Ticomán Rojo. They give an exhaustive list of its prior identifications in the Basin, Puebla, and Morelos. At Tlapacoya (Barba 1956:66–67, Plate 6) and Temamatla (Ramírez et al. 2000:109), the usual tones of red seem to be much darker than the Tlaxcalan average, though Barba describes variations in color within the same vessel and attributes them to poor control of the firing process. Vaillant (1931) describes many of the reds at Ticoman as dull, while Plunket and Uruñuela (personal communication 2005) find the Tlaxcalan reds particularly intense. The range of tones we observed in Vaillant's reference collection from Ticomán, however, matches closely the one we knew from our Tlaxcalan materials. We have not been able to find a meaningful association between the tone of red and any particular contexts in our sample, but the distinctions may be worth pursuing on a larger cross-regional scale.

Laguna Dark Red

Distinguishing Characteristics. An early variant of Laguna Red. The difference is a subtle difference in the red tones, with the average Laguna Red being more of an orange-red than the deep red of Laguna Dark Red. Because this difference seems to have chronological significance, we chose to separate the types, though the distinction between them is difficult to make at times.

Illustration. Figure 9.29.

Frequency. 86 rims in the Chronological Sample.

Temporal Range. Laguna Dark Red is present in low frequencies during the Tlatempa and Texoloc phases.

Culture-historical Integrity. Appears strong, but that is not entirely certain due to small sample size and differences in recording practices between investigators.

Paste. Laguna ware.

Surface Treatment. The surfaces of Laguna Dark Red vessels are covered with a dark red slip (10R 5/4, 7.5R 4/4–5/4) and are highly burnished.

Forms. Common forms include rounded-walled dishes (B1 and B4; 37 percent), tecomates (T1-1 and T2; 28 percent), and ollas (O1-1 and O4). Modified-rim bowls include B3-4, B3-5, B3-6, and B3-7. Minor forms include B2, B6, and B10.

Decoration. Simple horizontal lines (Motif 1), diagonal lines (Motif 3), and line breaks (Motif 11) were grooved and excised onto the exterior body and interior rim of bowls during the Tlatempa and Texoloc phases.

Potential Misidentifications. Only the analysts who actually worked with early materials (Jennifer Carballo and Lesure) were convinced of the distinctiveness of this type. The tones of the red clearly overlap with that of Laguna Red. Laguna Dark Red should be regarded as an early variant of Laguna Red.

Comparisons. García Cook and Merino Carrión (1988:279) mention a minor proportion of red sherds in the Tlatempa phase, among which rounded-walled bowls and tecomates were prominent. Zaltepec Rojo at Tlapacoya (Niederberger 1976:147–148) is very close in color and has a similar emphasis on rounded vessel forms rather than composite silhouettes; its maximum frequency is in the Zacatenco phase. That type is also reported by Ramírez et al. (2000:89) from Temamatla.

Laguna Red-and-Scraped

Distinguishing Characteristics. Vessels partially slipped red, with significant areas left scraped—neither slipped nor burnished—to contrast with parts covered in a burnished red slip.

Illustrations. Figures 9.30 and 9.31.

Frequency. 697 rims in the Chronological Sample.

Temporal Range. Tzompantepec through Tenexac, peaking in Late Tezoquipan or Tenexac.

Culture-historical Integrity. This type persists throughout the entire occupation, but expands dramatically in the Tezoquipan and Tenexac phases. The main problem is that throughout the Formative many olla rims and necks display some red slip and some scraping. In small sherds it is difficult to judge if these are intentionally juxtaposed in the way described below. If such olla fragments are disregarded, the culture-historical integrity of this type is strong. If they are included, it is much weaker.

Paste. Laguna ware.

Surface Treatment. A well-burnished red slip is applied to some parts of the vessel, while others are left unburnished and unslipped. The red slip is of the same kind as in Laguna Red, though the average tone is somewhat darker, hovering around 10R-2.5YR 4/6. The normal range of tones covers hues 10R to 2.5YR, values 3 to 5, and chromas 4 to 8. Hue 7.5R and lower chromas (2–3) seem to be, as with Laguna Red and for the same reasons, deviations from the norm due to frequent manufacturing mishaps. The scraped surfaces are rough to the touch (and on a functional level may have allowed a better grip). The color of the scraped surfaces obviously depends mostly on the paste and its firing and was observed to range from light red (2.5YR 6/6) through reddish brown (5YR 5/4) to

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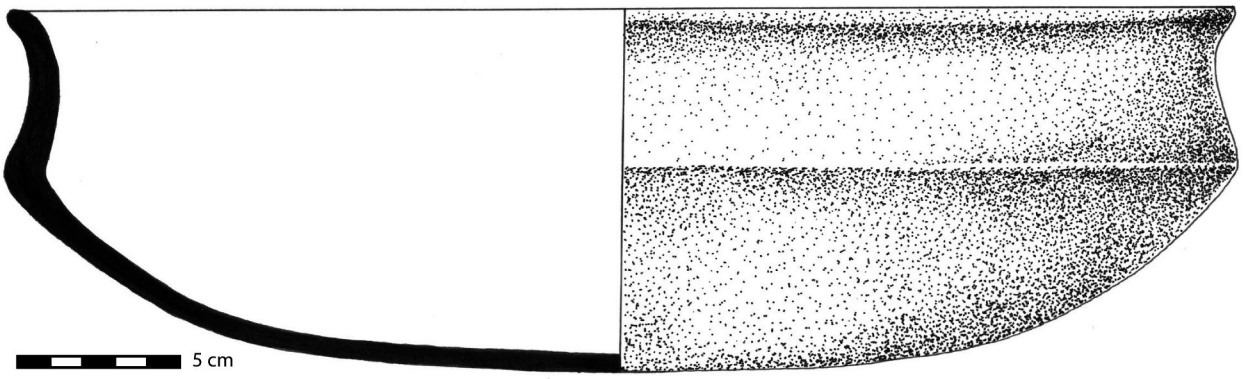

Figure 9.28. Laguna Red composite silhouette basin from lots 1349 and 1357. Drawing by Juan Bazán Ortiz.

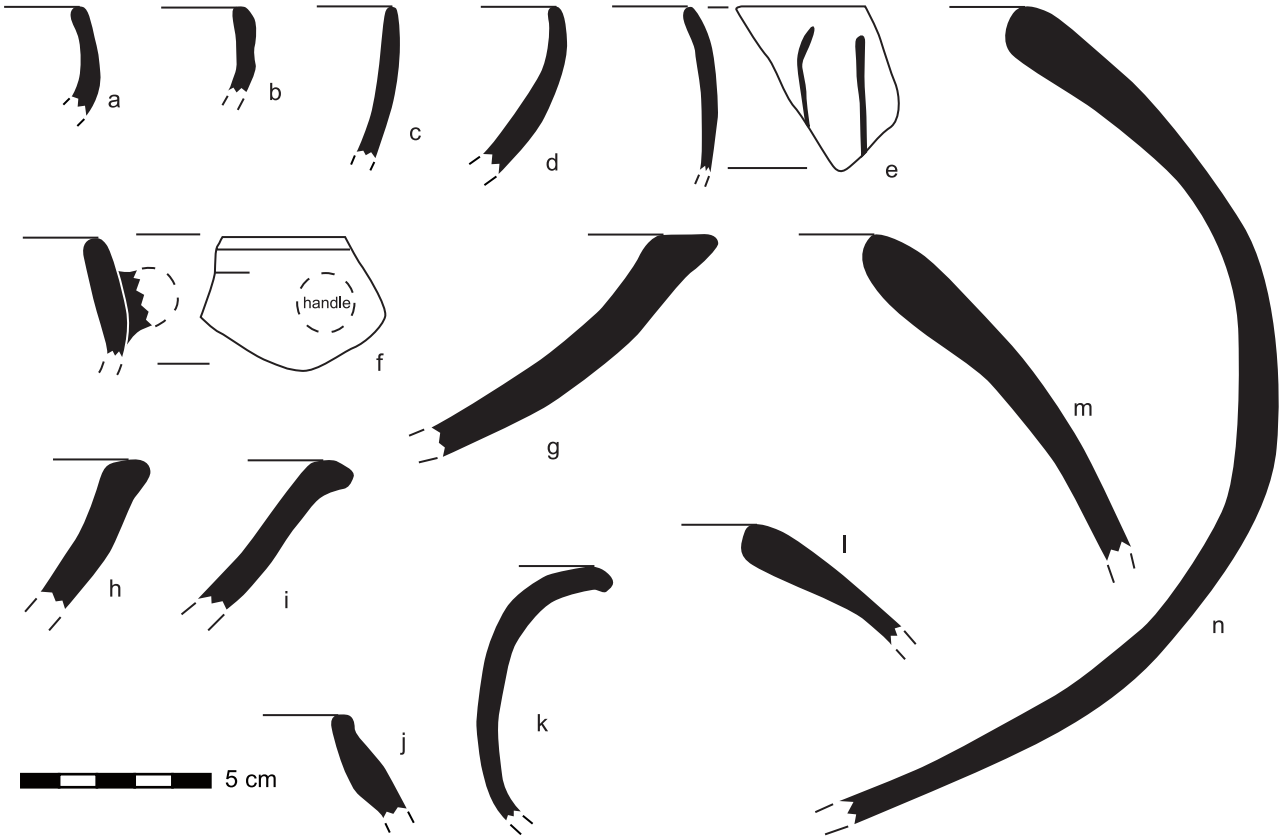

Figure 9.29. Laguna Dark Red: (a–d) rounded-walled bowls; (e, f) hemispherical bowls; (g, h) bowls with flattened rims; (i) bowl with exteriorly thickened rims; (j) small olla with vertical neck; (k) olla with outcurving neck; (l–n) tecomates. Proveniences: (a–c, e, j) A15-1S, a, j-108, b, e-113, c-112, d-532[A23-2S]; (f–h, k) nonfeature, Amomoloc, f-731, g-567, h-566, k-717, i-852+950[A73-2S]; (l, m) A68-4S, l-933, m-934+963, n-936+937[A67-1S].

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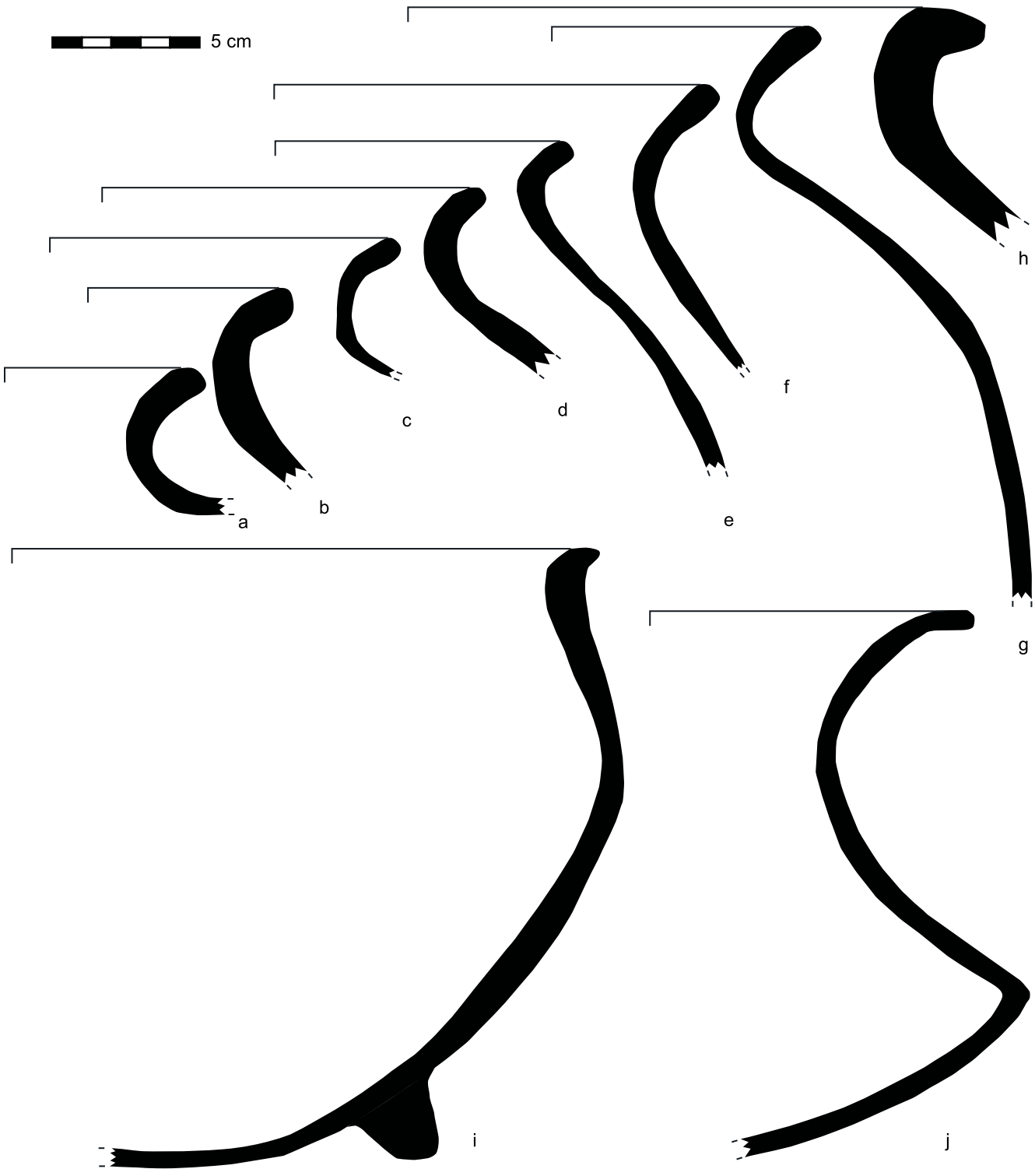

Figure 9.30. Laguna Red-and-Scraped: (a–h) ollas; (i) composite silhouette basin; (j) shouldered jar with rounded base. Proveniences: a-1250, b-1083, c-1191+1249, d-1084, e-1219, f-1032+1038+1043+1047+1049+1110, g-1084+1086, h-Las Mesitas surface collection, i-1313+1316+1391, j-1084+1087.

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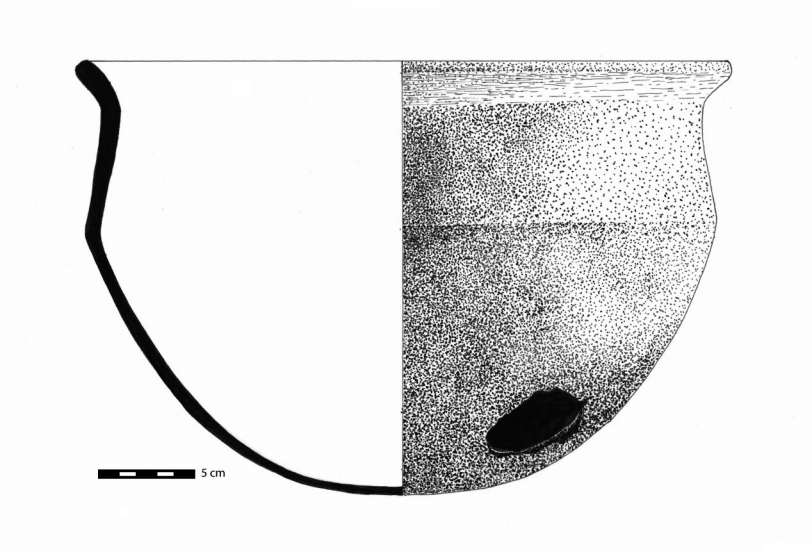

Figure 9.31. Laguna Red-and-Scraped composite silhouette basin from Lot 1404. Drawing by Juan Bazán Ortiz.

brown (7.5YR 4/3). Grayer variants (chromas lower than 4) are also sometimes found. The most common scraping marks are rather conspicuous striations. They run subhorizontally, though diagonal and even vertical marks have been observed. Rougher and finer variants of this scraping can be distinguished by the respectively higher or lower relief of the striations. A less common kind of scraping comes in the form of tiny "pock marks," as if a coarse cloth was put on the wet clay. Still rarer kinds of scraping create surfaces resembling very coarse sandpaper or surfaces with sunken semicircular marks probably left by the potter's fingernails.

The boundary separating red from scraped is sharp and horizontal and runs along the whole circumference of the vessel. On ollas, the typical pattern is a wide band of red slip on the interior rim and neck and on all the exterior but for a wide band on the rim and neck. The inside of the neck may have a sharply delimited band of fine scraping, contrasting with the red slip above and with rough scraping below. On open composite silhouette forms, mostly large and deep bowls or "basins," the inside is all red while on the outside the boundary coincides with the shoulder. The exterior rim and collar may be scraped while the body and base are red, or the exact opposite. A third characteristic pattern is found on composite silhouette jars with rounded bases (Form F2). Above the shoulder the pattern resembles that of ollas in that the red slip is found in a wide red band below the rim on the outside, as well as on the outside of the vessel below a scraped band below the rim but above the low-placed shoulder. The exterior below the shoulder, however, is carefully scraped.

Forms. Throughout the Formative, this type is represented overwhelmingly by ollas. In Tzompantepec through Texoloc it is practically limited to ollas, with less than 10 percent being represented by other vessel forms. In Tezoquipan and Tenexac, about two-thirds of Laguna Red-and-Scraped vessels are still represented by ollas, but the range of vessel forms expands radically. Among the most characteristic ones are composite silhouette bowls of individual serving size (B6-1a), large and deep composite silhouette bowls or "basins" (B8), and peculiar composite silhouette jars that resemble inverted mushrooms (F2). The latter seem to be always Laguna Red-and-Scraped, though a few sherds that do not include the base were classified as Laguna Red. Other occasionally represented forms include B1-1, B2, B4, B5-3, B6-1b, B6-1c, and B6-2.

Decoration. Decoration is virtually absent in this type.

Potential Misidentifications. Small sherds of Laguna Red-and-Scraped will inevitably be classified as Laguna Red (see above). A failure to distinguish scraped from burnished brown surfaces may lead to a confusion of Laguna Red-and-Scraped and Potrero Red-on-Brown. Unincised fragments of Xalmonto collars that have lost their white slip, exposing the underlying scraped surface, may be mistaken for Laguna Red-and-Scraped. The faintest trace of white slip should be sufficient to place the sherd in Xalmonto.

Comparisons. Practically all authors seem to have subsumed this type under their equivalents of Laguna Red (see above) or under types that combine red with brown. García Cook and Merino Carrión (1988:285–287, 297) seem to have merged several types combining red slip with scraping, burnishing, or addition of a brown to yellow slip—that is, our Laguna Red-and-Scraped, Potrero Red-on-Brown, and perhaps De Haro Polychrome. These appear to be merged in their Texoloc Rojo y Café and Tezoquipan Rojo Sobre Café Claro types. They admit that the former

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should probably be split and describe the latter as a continuation of sorts of the former, though associated with different vessel forms. Our take on this is that the transition from Texoloc to Tezoquipan sees a virtual disappearance of Potrero, a dramatic expansion of Laguna Red-and-Scraped (including its first appearance in significant numbers on vessels other than ollas), and the most pronounced overall change in vessel forms in the entire Formative sequence. At Xochitécatl, Laguna Red-and-Scraped is subsumed under Grupo Rojo and Grupo Rojo Sobre Café (Serra Puche et al. 2004:54–55, 84–85). The latter seems to be a fairly good correlate of our Laguna Red-and-Scraped—that is, one that does not mix in Potrero Red-on-Brown. In Vaillant's reference collection from Ticomán, sherds resembling Laguna Red-and-Scraped are present but in much lower frequencies than those resembling Potrero. Two or three of the bowls illustrated by Manzanilla (1985) for the second occupation of Cuanalán evoke Laguna Red-and-Scraped in their arrangement of red and scraped surfaces above and below the shoulder. These cross-ties, as well as observations inherent to our Tlaxcalan sample, make us suspect that Laguna Red-and-Scraped peaks later than Laguna Red.

RED-AND-WHITE

Red-and-white is the most common bichrome type-class in the collection as a whole. It divides readily into three types based on (1) the extent of coverage of the vessel surface in red versus white and (2) the relative positioning of one color with respect to the other.

Yauhtentzi Red-on-White

Distinguishing Characteristics. A decorative variant of Yauhtentzi White distinguished by bands of red slip applied over white. Red typically appears near the rim, on either the interior or exterior of bowls, dishes, and vases—very often in combination with post-slip excised or incised motifs.

Illustrations. Figures 9.32 through 9.34.

Frequency. 565 rims in the Chronological Sample.

Temporal Range. Yauhtentzi Red-on-White is present in the Tzompantepec phase at a low frequency (1 percent) and increases considerably in Early Tlatempa (26 percent). Along with Yauhtentzi White, it is a diagnostic type of the Tlatempa phase, continuing into the Late Tlatempa phase in high frequencies (19 percent). By the Texoloc phase, it diminishes considerably (7 percent at Tetel; absent entirely at Las Mesitas and La Laguna).

Culture-historical Integrity. Strong.

Paste. Laguna ware.

Surface Treatment. Yauhtentzi Red-on-White vessels have areas of red or dark red slip (10R 5/4–4/4, 4/3, 10YR 5/6–4/6) applied over a white slip (2.5Y 8/4–7/4, 8/3, 10YR 6/3, 2.5Y 8/4–7/4) that covers the entire body of the vessel. In general, the red slip is restricted to areas near the rim of the vessel, usually along the thickened interior rim of dishes, the lip, or the upper exterior.

Forms. Forms are almost entirely bowls, particularly beveled-rim dishes (B3-2), outsloping everted–rim dishes with interior ledges (B3-4), rounded-walled dishes and bowls (B1-1, B4, B5), and kidney-shaped bowls (B11). Also present in small numbers are forms B2, B3-3, B3-4, B3-5, B3-8, B6, B10-1, O1-1, and T1-1.

Decoration. For the Tzompantepec phase, the single example we have of a Yauhtentzi Red-on-White vessel is a globular bowl with red upside-down triangles along the exterior of the vessel near the rim (Figure 9.32a). In the Tlatempa phase, a related form existed: a small globular bowl with a broad red band painted on the exterior just below the rim, within which were placed various incised designs, including scrolls (Motif 22) and line breaks (Motif 11) (Figure 9.32e–f).

In the Tlatempa phase, the most common decorated form is a dish with painted, incised, grooved, and/or excised decoration on the thickened interior rim. Simple horizontal lines within the red band of paint predominate (Motif 1; 30 percent), but wavy lines (motifs 6–8; 21 percent), line breaks (Motif 11a–e; 22 percent), and stepped motifs (Motif 13, 9 percent) are also common, among several other motifs. A few examples of elaborately decorated cups also appear (Figure 9.34b–d).

In the Texoloc phase, it is still common for Red-on-White dishes to be decorated along the interior rim, but the number and variety of motifs depicted decrease dramatically.

Potential Misidentifications. The type is readily distinguishable from Xalmonto Red-and-White because the body of the vessel is primarily white rather than red and the red is applied on top of the white slip. It is distinguishable from Gazca White-on-Red in the order of application of the colors and in the fact that the vessels are predominantly white rather than red.

Comparisons. This type matches Tlatempa Rojo Sobre Blanco, previously identified in Tlaxcala by García Cook and Merino Carrión (1997:164–165 [1988]). Rojo Sobre Blanco Esgrafiado (Zacatón Borde Pintado) (Serra Puche et al. 2004:66–67), Zacatenco Rojo Sobre Blanco (Ramírez et al. 2000:90; Niederberger 1987:633), and La Pastora Red-on-White (McBride 1974) also appear to be essentially the same types.

Gazca White-on-Red

Distinguishing Characteristics. Red-slipped vessels with geometric motifs painted in fine white lines on top of the red slip. Never incised.

Illustrations. Figures 9.35 and 9.36

Frequency. 69 rims in the Chronological Sample.

Temporal Range. Texoloc and Tezoquipan phases.

Culture-historical Integrity. Strong.

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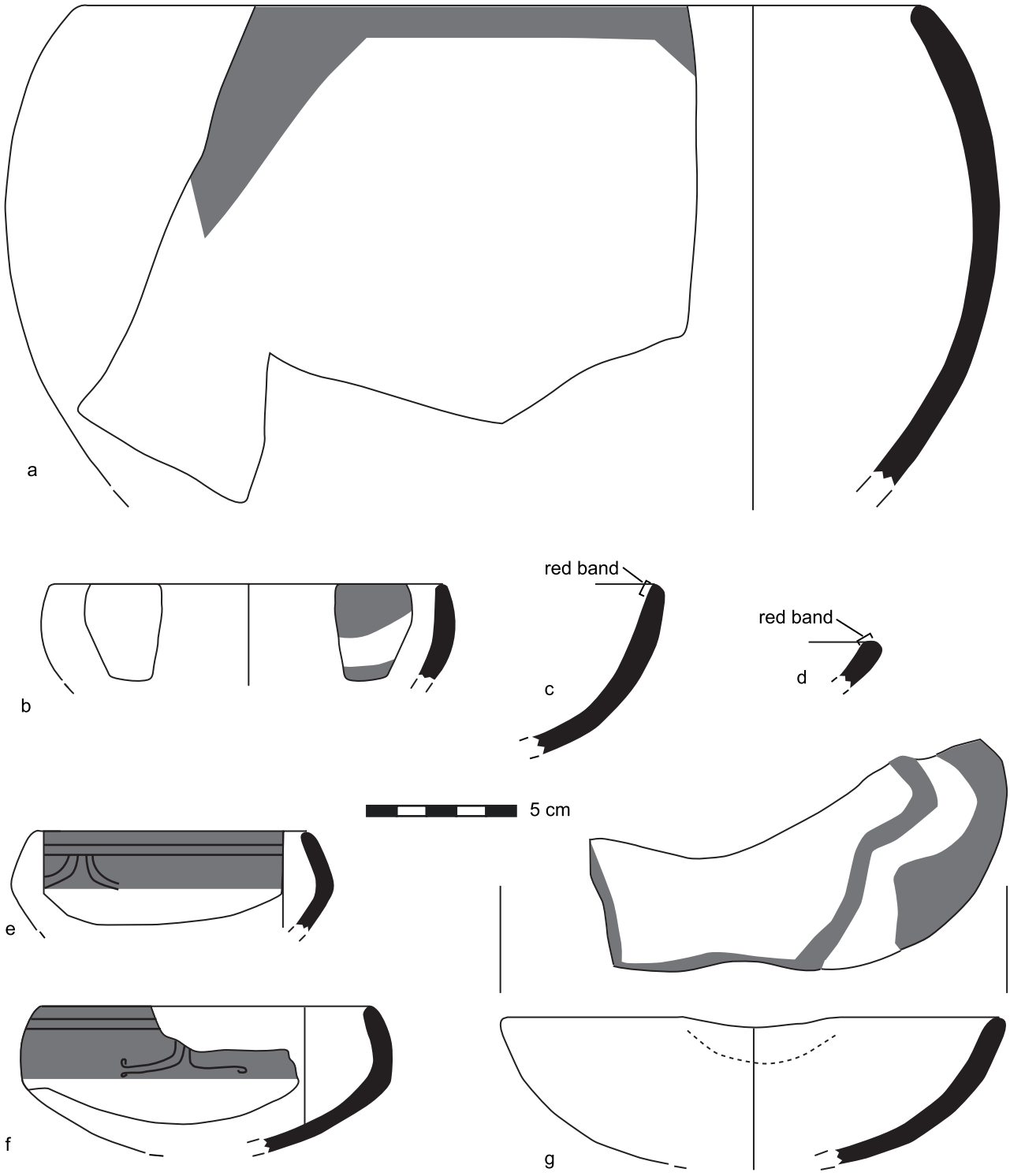

Figure 9.32. Yauhtentzi Red-on-White, Tlatempa phase: (a) hemispherical bowl; (b–d) rounded-walled bowls; (e, f) restricted-rim bowls with incurving walls; (g) kidney-shaped bowl. Proveniences: a-606+631[A46-2S]; b-109[A13-3S]; (c, d) A68-4S, c-963, d-893, e, f-915[A73-2S], g-667[A23-2S]. Red slip indicated by gray shading.

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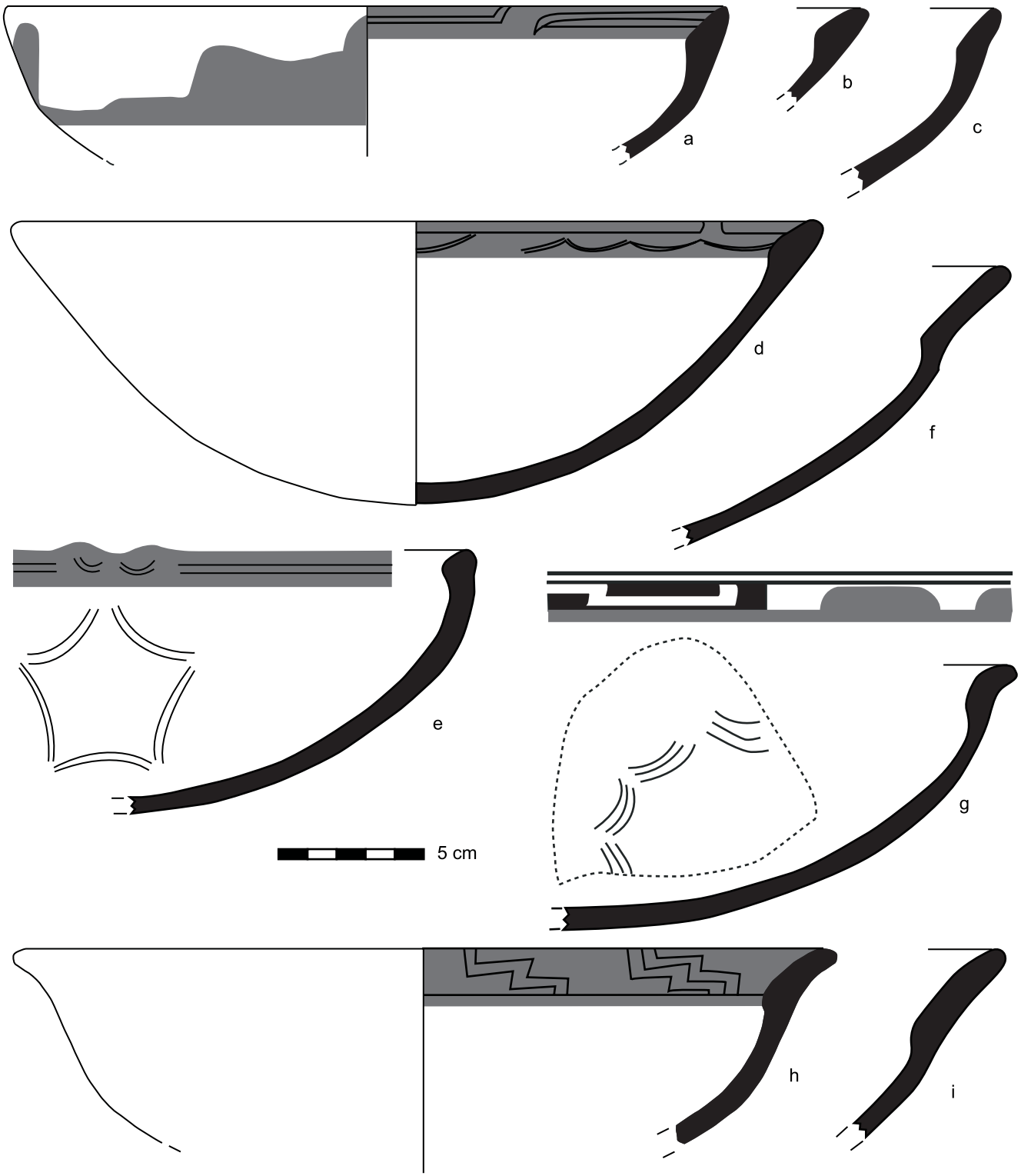

Figure 9.33. Yauhtentzi Red-on-White, Tlatempa phase: (a–e) bowls with beveled rims; (f–i) bowls with outsloping everted rims and interior ledges. Proveniences: a-714[A57-2S], b-963[A68-4S], c-666[A54-2S], d-28+39[A4-4S], e-729+730[A59-2S] (note scalloping on rim and incised star on interior base), f-744+772[A64-2S], g-665+666+696+702 [A54-2S] (note painted and excised design on interior rim and incised star pattern on interior base), h-522+534[A23-2S], i-909+934[A68-4S]. Red slip indicated by gray shading.

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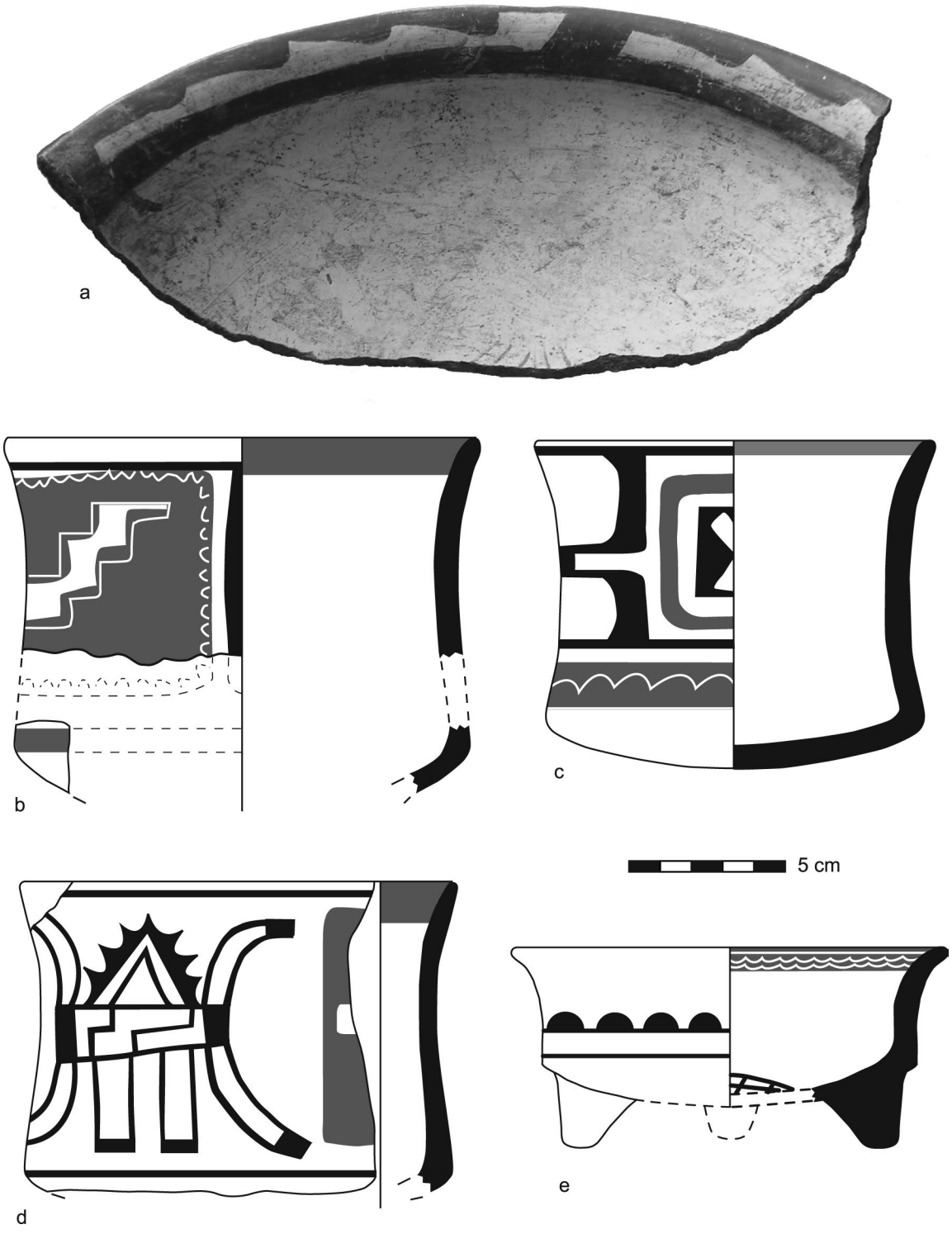

Figure 9.34. Yauhtentzi Red-on-White, Tlatempa phase: (a) dish with outsloping everted rim and interior ledge (note corner of grooved decoration on interior base); (b-d) vases; (e) composite silhouette dish. Proveniences: a-962[A68-4S]; b, c-A54-2S, b-666+696+703, c-665+666+681+696+749; d-899+915+956+957[A73-2S]; e-597[A47-1S]. Red slip indicated by gray shading.

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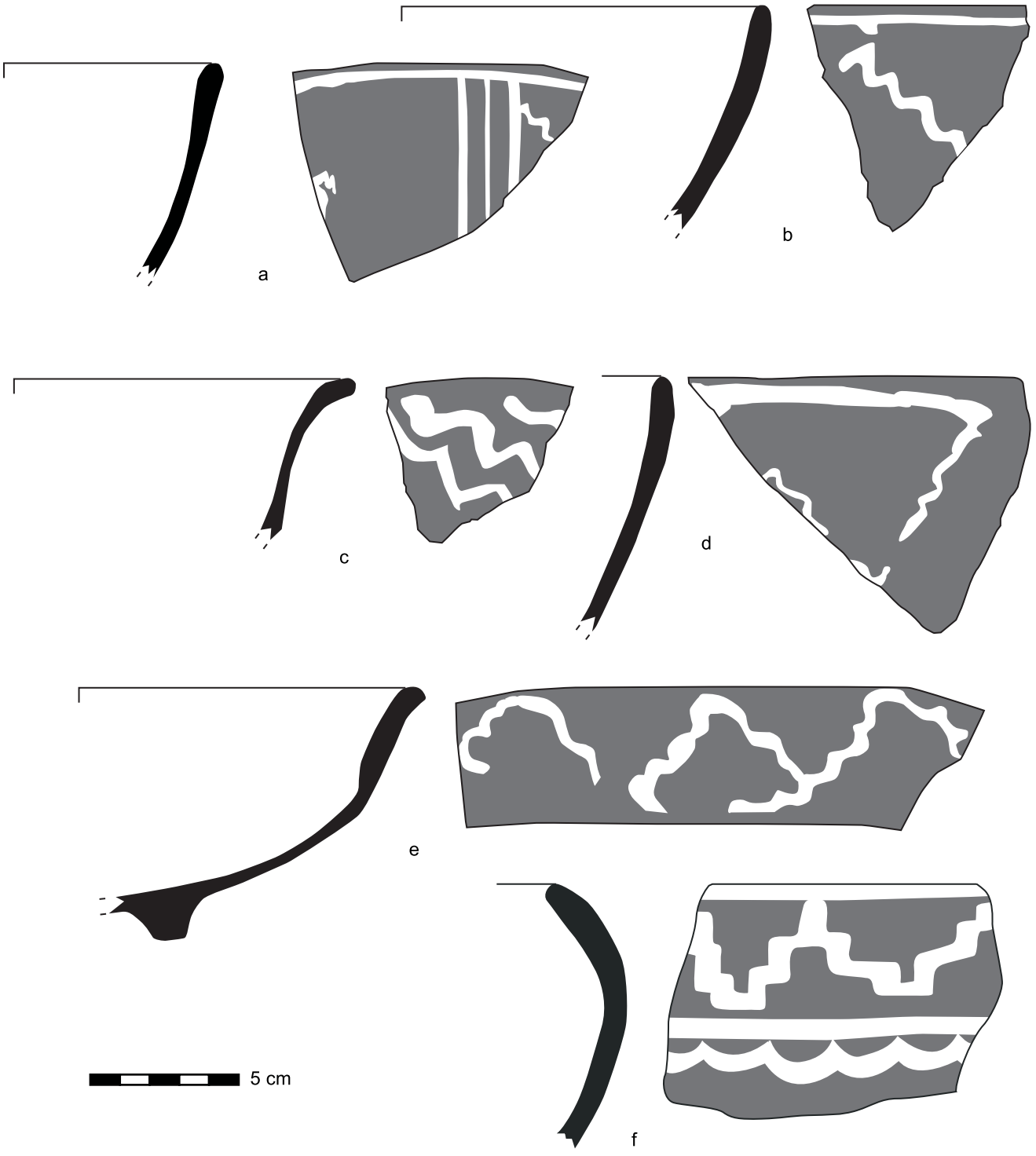

Figure 9.35. Gazca White-on-Red: (a) bowl with thickened rim; (b, d) kidney-shaped bowls; (c, e) composite silhouette bowls; (f) tecomate. Proveniences: a-1187, b-1087, c-1157, d-1089, e-1195+1220+1225+1271, f- 72, 82[A11-2S].

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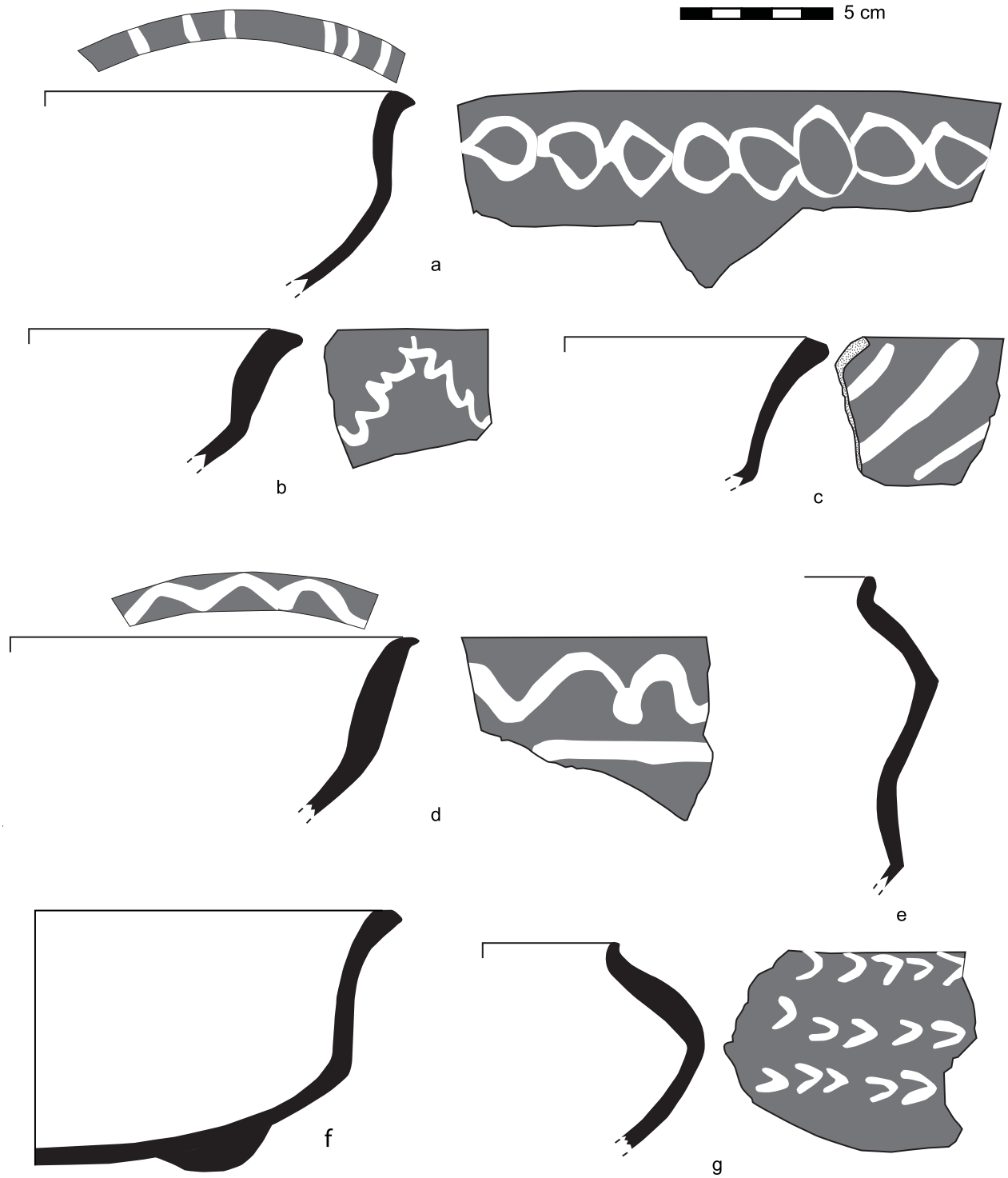

Figure 9.36. Gazca White-on-Red: (a–d, f) composite silhouette bowls; (e, g) tecomates. Proveniences: a-1071+1083+1077, b-1195, c-1071, d-1100, e-Las Mesitas road cut collection 12, f-1395+1398+1420+1445, g-1156+1186.

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Paste. Laguna ware.

Surface Treatment. The entire outside surface of the vessel is slipped red. So is the inside, except in the tecomates. The most common tone of the slip is a rather intense red (hue 2.5YR–10R, value 4–5, chroma 6). The slip is uniformly well burnished but often displays subhorizontal streaks of slightly different hue. Darker tones of red (hue 2.5YR, value 3–4, chroma 2–3) are not uncommon. Intermediate tones are rare. The vessels in darker tones often display patches or small areas of the lighter tones, leading us to think that the lighter ones were usually intended and the darker ones are accidental. On top of the red slip, a white paint (2.5Y 8/1–7/1) is applied in lines forming geometric motifs. The lines are of uniform width, not exceeding a few millimeters. The lines do not cover much surface area and are typically applied on the outside of the collar or upper body of the vessel, as well as on the narrow horizontal surface of some rims. The white paint is powdery (chalk-like) and often crackled.

Forms. Composite silhouette dishes (B6-1a, B6-1b) are the most common forms in this type. Kidney-shaped bowls (B11) are also exceptionally common given their relatively minor frequencies in the collection. Different varieties of tecomates are third. Other forms present in small numbers are B1-1, B3-2, B3-5, B4, O1-1, and O5-2.

Decoration. The white paint traces straight (motifs 1–3), wavy (Motif 8), or stepped lines (Motif 13), occasionally zigzags or scrolls (Motif 22). The multiple line break motif is absent.

Potential Misidentifications. The white paint is very sensitive to post-depositional damage. In many cases it has eroded completely, but its former presence can be recognized because it has left the underlying red slip shinier than in areas where no paint had been applied. These shiny lines stand out when the sherd is wet, fading into the color of the background slip as it dries. Failure to recognize the existence of paint will lead to the misidentification of Gazca as Laguna Red. Confusion with Laguna Red-and-Scraped should not occur, as scraped surfaces are practically nonexistent in Gazca. Xalmonto can also be easily distinguished in that the white is used in the manner of slip, covering large surface areas rather than being painted in fine lines. Xalmonto often carries incisions, which Gazca lacks.

Comparisons. Gazca is subsumed under Snow's (1966:204, 205) varieties 130 and 135 of Laguna White-on-Red. Gazca is also a good match for Blanco Pintado Sobre Rojo Pulido at Xochitécatl (Serra Puche et al. 2004:89–92). Serra Puche et al. (2004:92) correlate that type with Tezoquipan-Tezoyuca Blanco Sobre Rojo, described briefly by García Cook and Merino Carrión (1988:297). For our material we do not find the postulated link to Terminal–Formative Tezoyuca in the Basin of Mexico convincing (see Noguera 1943:figure 1, sherds 24–28; Parsons 1971:270–272; Sanders et al. 1975:plates 34–35, tables 23–24; Teotihuacan Mapping Project reference collection). Tezoyuca white-on-reds are more densely painted with white, the range of motifs is broader than in Gazca, and the step motif is rare. Polychrome combinations with orange- or buff-colored slips are common. Further, the Tezoyuca examples are overwhelmingly hemispheric bowls, whereas in our case and at Xochitécatl, composite silhouettes predominate. It should be noted that García Cook and Merino Carrión (1988:297) mention the importance of simple bowls in the case of their Tezoquipan-Tezoyuca Blanco Sobre Rojo, suggesting a divergence between their sample and ours. Instead of a Tezoyuca link, we propose one with Ticomán. Several sherds in the AMNH collection from that site match Gazca, two of them being illustrated under Ticomán Polychrome (Vaillant 1931:plates 72a–b). A correlation with the Blanco Sobre Rojo (Último) excavated at Tlapacoya (Barba 1956:73–74, 81; plates 11, 16h–j) also seems very plausible, especially in view of the decorative motifs represented, the association with composite silhouette forms, and the author's emphasis on the erodibility of the white paint. Barba thinks the paint was in many cases applied after firing the vessel. She also establishes the tie with Vaillant's finds at Ticomán. At Ticomán and Xochitécatl, the surface finish we describe for Gazca is sometimes combined with wider white bands characteristic of Xalmonto, and at Ticomán with red-and-brown slip combinations characteristic of our Potrero. Such hybrid surface finishes are rare in our sample from Tlaxcala.

Xalmonto Red-and-White

Distinguishing Characteristics. Vessels combining red and white slips, with each covering large surface areas, though the vessels are more red than white. Frequently incised. The boundary between red and white, often delimited with an incision, may take the form of a geometric motif such as a stepped pattern.

Illustrations. Figures 9.37 through 9.39.

Frequency. 266 rims in the Chronological Sample.

Temporal Range. Tlatempa through Tezoquipan, apparently continuing to Tenexac.

Culture-historical Integrity. Relatively strong, though surprisingly long lasting.

Paste. Laguna ware.

Surface Treatment. The red slip is usually intense and may reach tones that are close to orange (hue 10R–2.5YR, value 4–5, chroma 6–8). Some sherds fall outside this range, however, being darker or less intense red (hue 10R–5YR, value 3–4, chroma 3–4). The darker tones are not correlated with any other attribute or with any particular contexts, and we attribute them to manufacturing accidents. The red slip is uniformly well burnished but often displays subhorizontal streaks of slightly different hue. The white slip (2.5Y 8/2, 8/3) is matte and appears to be thinner and more easily weathered than that applied to the Yauhtentzi whites, but it is generally thicker and less easily weathered than the paint of the Gazca type. The red and white slips

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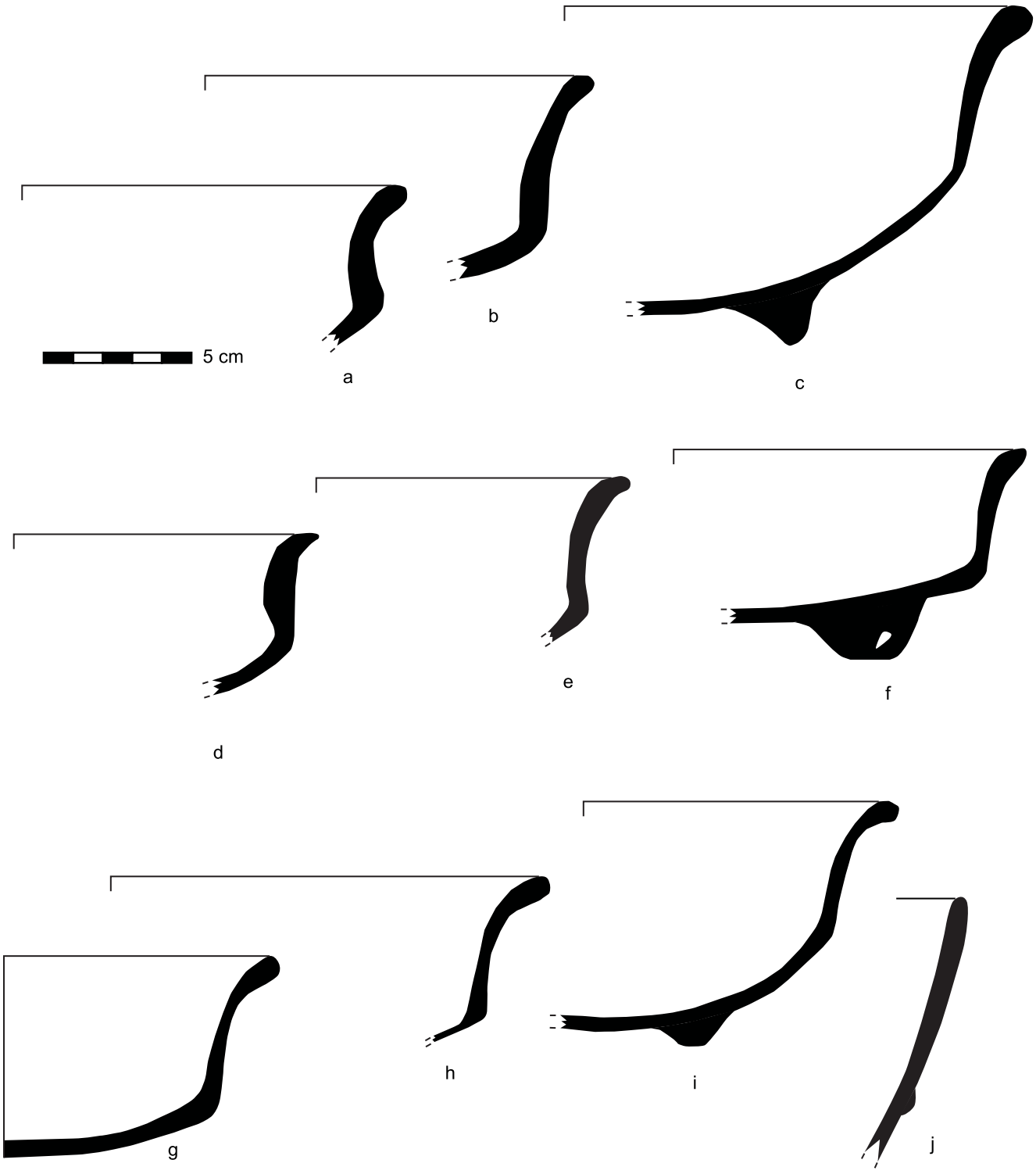

Figure 9.37. Xalmonto Red-and-White: (a–i) composite silhouette bowls and dishes; (j) kidney-shaped bowl. Proveniences: a-1192, b-1070, c-1447, d-1379, e-1260, f-1248, g-1395+1398+1420, h-1220, i-1086+1087, j-250.

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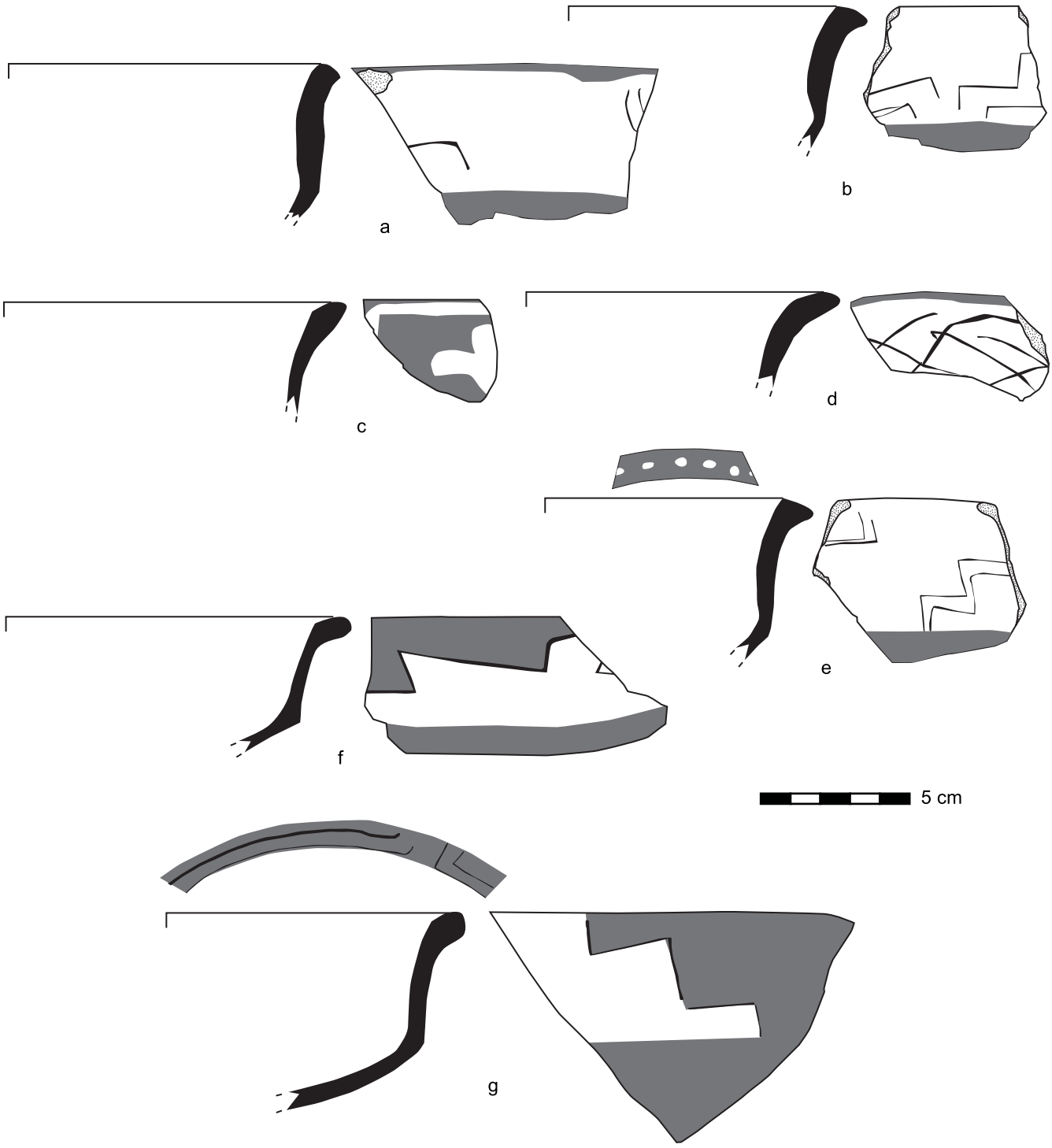

Figure 9.38. Xalmonto Red-and-White: (a–g) composite silhouette bowls and dishes. Proveniences: a-1084, b-1194, c-1476, d-1196, e-1256, f-1662, g-1703.

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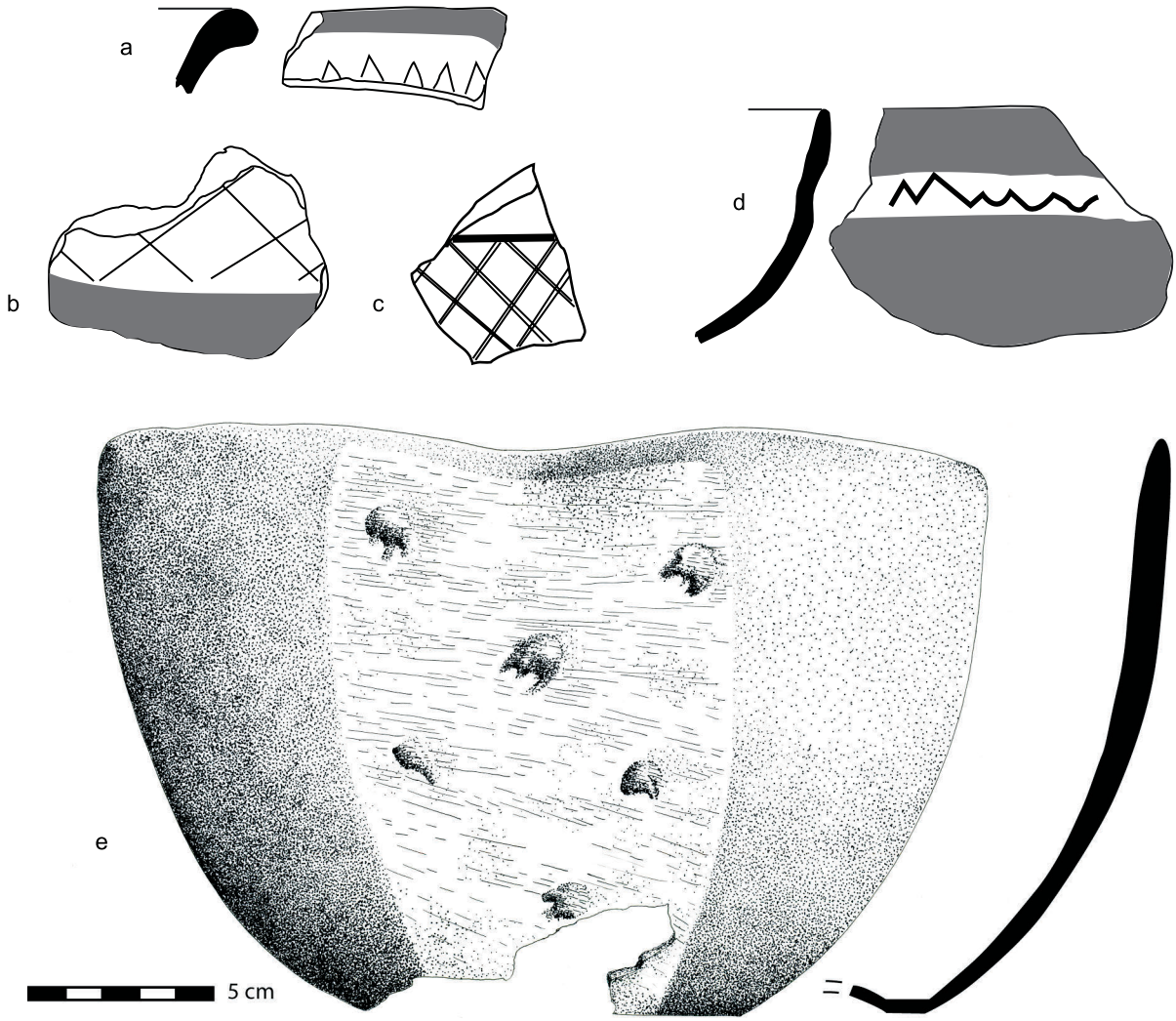

Figure 9.39. Xalmonto Red-and-White: (a–c) composite silhouette bowls with exterior incising on white-slipped areas; (d) probably a kidney-shaped bowl, also with exterior incising on the white band; (e) kidney-shaped bowl with appliqué nubbins in the white-slipped area. Phases: (a–d) Tenexac; (e) Tezoquipan; note that red in e is shown with heavy stippling. Proveniences: a-d-1691[Lag-D2], e-1220+1267+1269+1270+1271. Drawing by Juan Bazán Ortiz.

are typically applied directly over a well-scraped or lightly burnished surface. The white may also overlie the red, but in these instances we often notice that the red slip was applied thickly and carefully in areas that were to stay red, and thinly and carelessly in areas that were to be covered in white. The entire vessel, both inside and out, is slipped, with white covering less surface area. The white is generally confined to the outside and specifically to the collar in composite silhouette bowls. In a few sherds, white lines were also painted on the inside of the rim, in the manner of the Gazca type. Incising is very common. If the distinction between grooving and incising is made, the former is dominant; the latter usually limited to the inside of the rim. The grooves were cut through the red slip. Their relation to the white slip is more variable and ambiguous. They typically separate red from white but are often executed rather carelessly, not quite sticking to the boundary between the two slips. There are two potentially typeable deviations from the surface finish described, but each is represented in our collection by a few vessels only. In the first one—an early (Tlatempa phase) variant—the entire inside is slipped red while the outside is slipped white but for a red strip at the rim. In the second one, red slip or paint was applied over white slip.

Forms. Composite silhouette bowls with unmodified rims (B6-1a) predominate in this type. In the Texoloc, Tezo-

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quipan, and Tenexac phases, other composite silhouette bowls (B6-1b, B6-1d), rounded-walled bowls (B1-1, B4), and beveled-rim bowls or dishes (B3-2) are also present. Rare but unique to this type in our collection are deep, kidney-shaped bowls (B11) with multiple appliqué nubbins on the exterior (see further discussion in the next paragraph). Other forms include B8, B9-1, B9-2, B10, O1, and O4. In the Tlatempa phase, the type appears in low frequency, with forms confined to rounded-walled, beveled-rimmed, and kidney-shaped bowls (B1-1, B3-2, B5, and B11).

Decoration. The decoration is formed by alternating areas of red and white and is often accentuated by grooving the boundary between them. Decoration is most common and tends to be most elaborate on the outside of the collar or upper body of the vessel but also appears with frequency on the inside of the rim. There is a wide range of decorative motifs in the type, but the stepped mountain stands out as the most closely associated with it (Motif 13). The "treads" of the steps are often slanted toward the center axis of the mountain rather than horizontal. This is especially true of the highest step on each side. Isolated steps or L-shaped motifs of different widths are also common (Motif 17). Several of them are often set side by side, paralleling or mirroring one another. The inside of the rim of some Xalmonto bowls is incised with the multiple line break motif (Motif 11). Another noteworthy decorative scheme, observed on the upper exterior body of kidney-shaped or rounded-walled bowls, consists of square white panels with appliqué nubbins, also slipped white (Figure 9.39e).

Potential Misidentifications. As with most other types, the white slip is quite erodible. Where it is missing completely, Xalmonto could be misidentified as Laguna Red-and-Scraped. However, the decorative forms should be sufficient to distinguish the two, as the scraped surfaces in Laguna Red-and-Scraped are typically wide horizontal bands while the white surfaces in Xalmonto form geometric designs rather than following the whole circumference of the vessel. Also, when the white slip erodes, the scraped surface that is exposed tends to have a lower chroma than in Laguna Red-and-Scraped. In other cases it preserves patches of weak red slip that underlie the white. The distinction between Xalmonto and Gazca rests on the nature of the white: a slip in the former; a sparingly applied paint in the latter. The presence of any incisions will also point to Xalmonto. Occasional sherds of De Haro with very pale tones of the usually yellow or buff-colored slip could presumably be confused with Xalmonto. However, the harder paste of De Haro and the differences in decorative scheme should allow the correct identification.

Comparisons. Several authors have described Xalmonto and tried to capture its full spectrum by splitting it according to the order in which the slips were applied and to the presence or absence of incisions. Snow (1966:203–212) describes three varieties of Laguna White-on-Red (two of them he lumps with what we call Gazca), one of Laguna White-on-Red Incised, two of Laguna Red-on-White, and one of Laguna White-and-Red. García Cook and Merino Carrión (1988:296–297) have Tezoquipan Rojo Interior Blanco Exterior, Tezoquipan Rojo Interior Blanco Inciso Exterior, Tezoquipan Rojo Interior Blanco Sobre Rojo Inciso Exterior, and Tezoquipan Blanco Pintado de Rojo Sobre Rojo Exterior-Rojo Interior. All but the last one are common varieties of our Xalmonto. At Xochitécatl the varieties are labeled Rojo Sobre Blanco, Rojo Sobre Blanco Esgrafiado, Blanco Sobre Rojo, and Blanco Sobre Rojo Esgrafiado (Serra Puche et al. 2004:77–84). We did not consider such splitting to be warranted in our collection, especially as we had very few examples of red being applied on top of white. The designs illustrated by García Cook and Merino Carrión (1988:Plate 12) and Serra et al. (2004:figures 28–31, photos 25–28) are also a perfect match for those we found associated with Xalmonto. A few sherds in Vaillant's collection from Ticomán appeared to match Xalmonto, and Sanders et al. (1975:plates 24a, 24e) illustrate a few from Cuanalán, but all in all they do not seem to be very common in the Basin of Mexico.

WHITE-AND-BROWN

A distinctive color combination identified as a single type.

San José White-and-Brown

Distinguishing Characteristics. Bowls and dishes with white exteriors, white rims, and brown to black interiors. This pattern of coloring is achieved through surface treatment (slip and burnishing) not through differential firing. The type is quite distinctive, and well-preserved examples cannot easily be confused with any other types described here.

Illustrations. Figures 9.40 through 9.42.

Frequency. 143 rims in the Chronological Sample.

Temporal Range. Tlatempa through Tezoquipan.

Culture-historical Integrity. A candidate for further work. Although the type is most common in late Tlatempa, we have identified it in small quantities in Tezoquipan and even Tenexac contexts.

Paste. Laguna ware.

Surface Treatment. San José White-and-Brown vessels are covered with a thin matte white slip on the exterior and rim (2.5Y 8/1, 8/4, 10YR 8/2) and a brown to black slip on the interior (10YR 3/1, 3/2, 4/1). Sometimes the interior coloring is the result of burnishing alone. In very rare cases, white and brown are reversed between interior and exterior.

Forms. At its peak of popularity, in Late Tlatempa and Texoloc, the main forms were rounded-walled dishes and bowls (B1-1, B4); dishes with rounded walls, thickened rims, and flattened lips (B3-3); and kidney-shaped bowls (B11). In Tezoquipan, beveled-rim dishes (B3-2) and classic composite silhouette bowls (B6-1a, B6-2) appeared. Other

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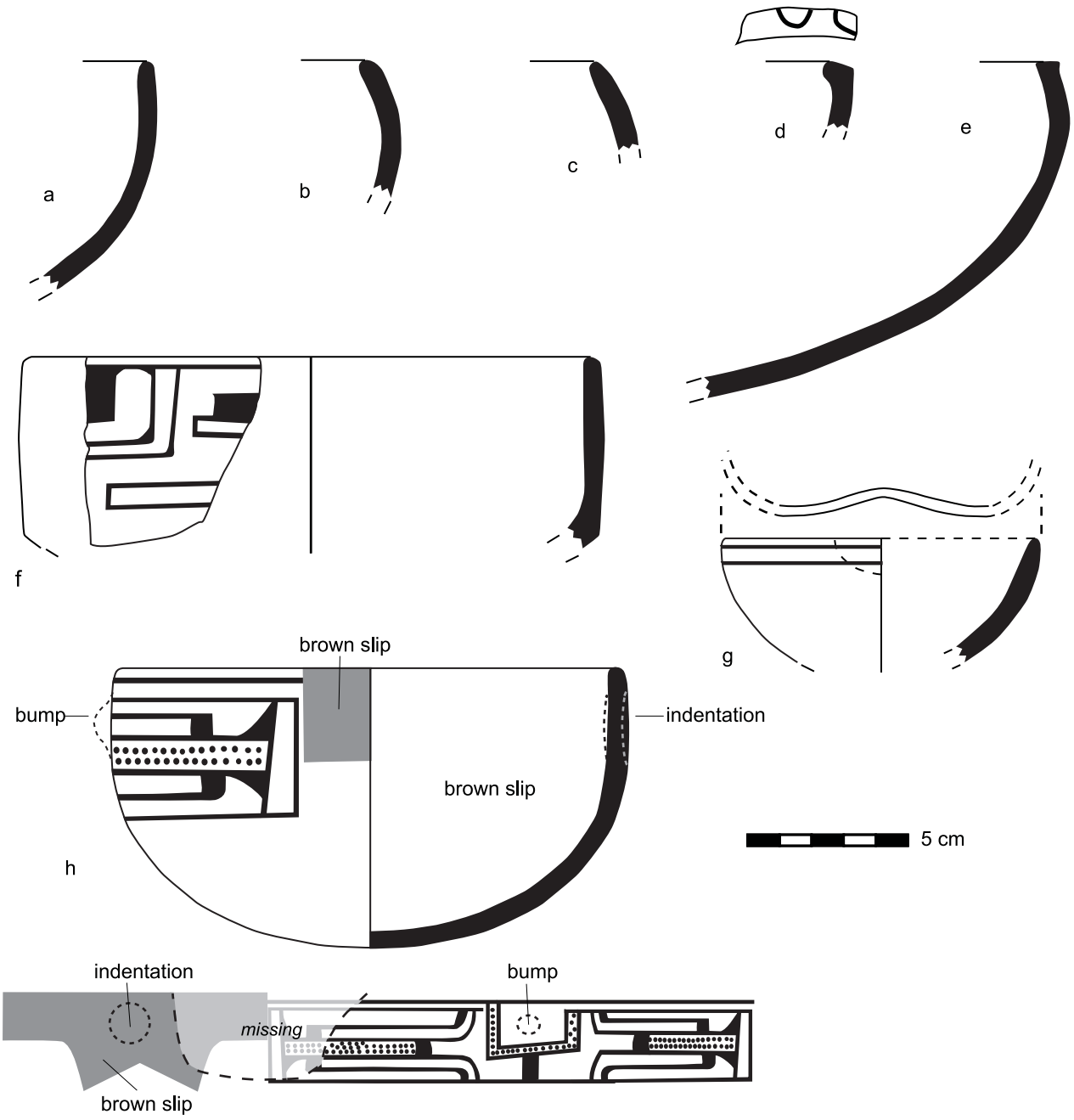

Figure 9.40. San José White-and-Brown, Tlatempa phase: (a) rounded-walled bowl; (b, c) hemispherical bowls; (d) bowl with slight interior recurving at rim; (e) bowl with flattened lip; (f) bowl with vertical wall; (g) kidney-shaped bowl; (h) rounded-walled bowl with rollout of exterior decoration illustrated below profile. Proveniences: (a, b, g) A68-4S, a-861, b-909, g-894; (c, d, h) A64-2S, c-744, d-747+774+775, h-747, e-29[A4-4S], f-661[nonfeature, Amomoloc].

forms present in small numbers include B3-5, B3-6, B10-1, O1-1, and T.

Decoration. During the Tlatempa phase, the majority of decorated San José White-and-Brown vessels were globular bowls with excised exterior decoration, although simple bowls with decorated interior rims and lips were also common. Motifs varied from simple horizontal lines (Motif 1; 31 percent) to wavy lines (motifs 6–8; 17 percent), excised block and line combinations (motifs 51–53; 15 percent), and line breaks (motifs 11a, 11b, 11d, 11e; 13 percent).

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During the Texoloc phase, simple decoration in the form of horizontal lines, line breaks, and wavy lines continued to be excised on bowl exteriors, but the more elaborate motif combinations noted for the Tlatempa phase disappeared.

Comparisons. The type was identified by García Cook and Merino Carrión (1988:287) as Texoloc Blanco Exterior-Negro Interior. We have not had success in finding similar types in other regions of Formative Mesoamerica.

Figure 9.41. San José White-and-Brown, Tlatempa phase: Photograph of rounded-walled bowl depicted in Figure 9.40h. Provenience: 747 [A64-2S].

RED-AND-BROWN

Red on slipped or burnished brown occurs in some variety in the collection. After protracted debate, we have distinguished four types, two of which (Potrero Red-on-Streaky Brown, Laguna Dark Red-on-Buff) form a very minor part of the assemblage, being present only at the very beginning of the sequence. Note that red in combination with scraped (unburnished) areas is assigned to a different type-class (Red and Red-and-Scraped).

Potrero Streaky Red-on-Brown

Distinguishing Characteristics. Portions of vessels were covered with a thin red wash, irregularly burnished to produce the uneven (streaky) alternation between reddish brown and brown tones.

Illustrations. Figure 9.43.

Frequency. 10 rims in the Chronological Sample.

Temporal Range. Tzompantepec and Early Tlatempa.

Culture-historical Integrity. Uncertain due to small sample size.

Paste. Laguna ware.

Surface Treatment. The surface of Potrero Streaky Red-on-Brown vessels is irregularly burnished, so it varies in color between red and various tones of brown and reddish brown (10R 4/3–4/4, 10R 4/2–3/2).

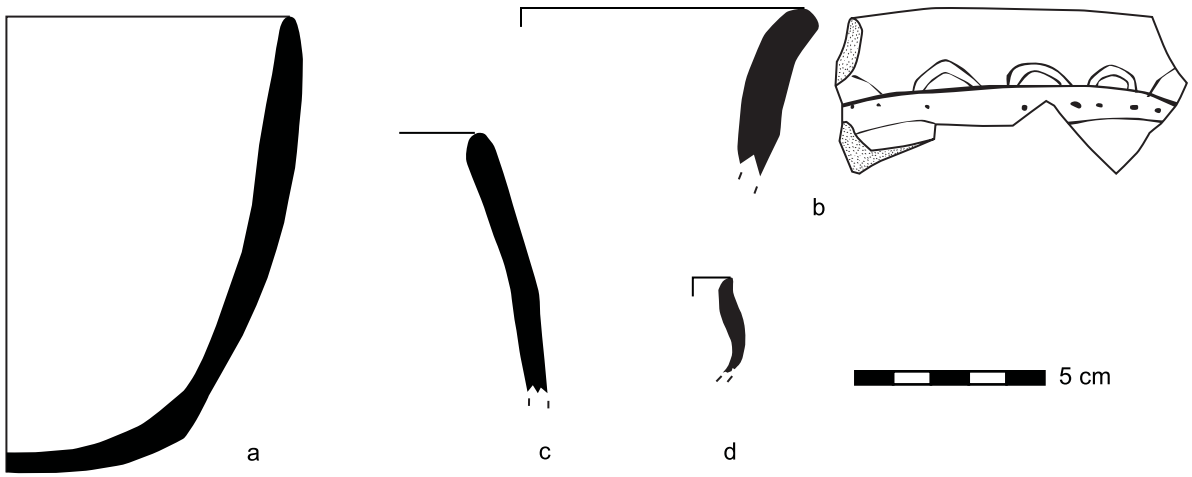

Figure 9.42. San José White-and-Brown, Texoloc and Tezoquipan phases: (a) composite silhouette bowl with low shoulder; (b) composite silhouette bowl; (c) kidney-shaped bowl; (d) olla. Proveniences: a-1186, b-1218+1220, c-1186, d-1084.

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Forms. Bowls with exteriorly thickened rims (B3-7), rounded-walled bowls (B1-1, B4), beveled-rimmed dishes (B3-2), and tecomates.

Decoration. One beveled-rim bowl from the Tlatempa phase had a single excised line running along its interior rim.

Comparisons. This seems to be what García Cook and Merino Carrión (1988:276) called Tzompantepec Rojo.

Laguna Dark Red-on-Buff

Distinguishing Characteristics. This type is characterized by dark red banded decoration found on the rim and exterior body of burnished buff jars.

Illustrations. Figure 9.44.

Frequency. 39 rims in the Chronological Sample.

Culture-historical Integrity. Uncertain due to small sample size.

Surface Treatment. The surface is well burnished with a buff color (7.5YR 4/2, 5/4), upon which bands of dark red slip are applied (10R 4/3). The necks and interiors of

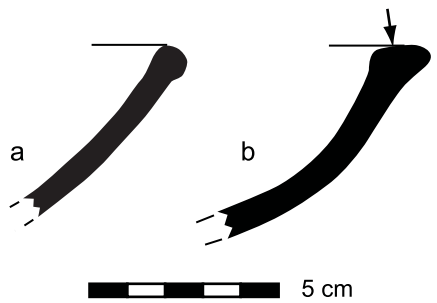

Figure 9.43. Potrero Streaky Red-on-Brown, Tzompantepec and Tlatempa phases: (a) bowl with exterior thickening at rim; (b) beveled rim bowl (excised line on rim indicated by arrow). Proveniences: a-601[A46-2S], b-915[A73-2S].

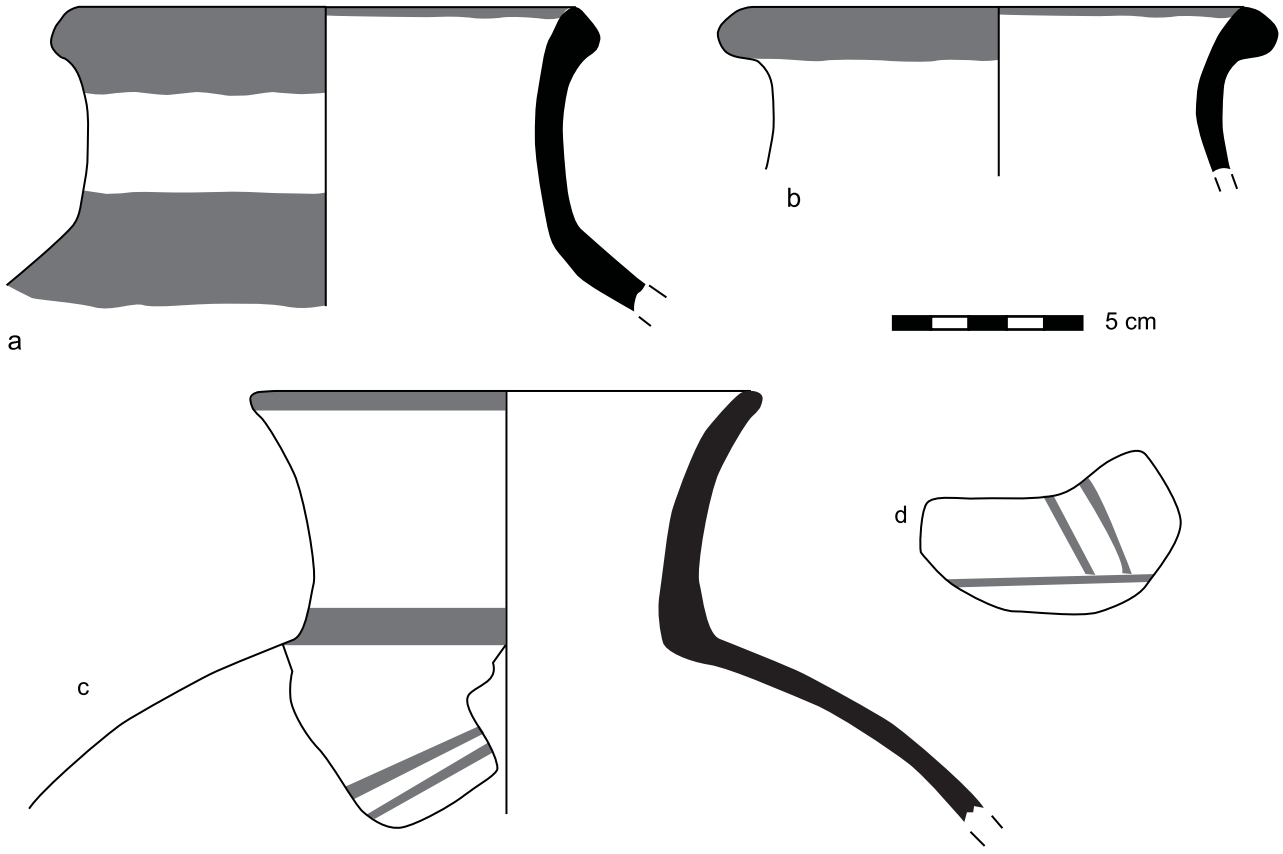

Figure 9.44. Laguna Dark Red-on-Buff, Tzompantepec and Tlatempa phases: (a, b) ollas with exteriorly thickened rims; (c, d) olla with outcurving neck and direct rim; body sherd of same vessel. Proveniences: (a, b) A46-2S, a-643+657, b-631; (c, d) d-734[A63-2S].

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jars are scraped (that is, unburnished and unslipped) (7.5YR 6/4), while the rims and exteriors receive the dark red-on-buff surface treatment. It is likely that this is an early manifestation of the later Laguna Red-and-Scraped type that becomes common for jars during the Texoloc and subsequent phases, and often it is difficult to distinguish between them when rim sherds do not extend below the neck of a vessel.

Forms. Ollas.

Decoration. All vessels within this type are decorated in some way by red bands, by definition of the type. (Otherwise they would be typed as Amomoloc Plain jars.) Decoration typically consists of a thin red band on the jar lip, another band running around the base of the exterior neck, and diagonal red bands on the exterior body. Occasionally the bands on the exterior body meet or cross each other, ending at a separate horizontal band running around the base of the jar.

Potential Misidentifications. When only a red-banded rim is found (and nothing connecting to the body), it is difficult to distinguish between Laguna Dark Red-on-Buff and Laguna Red-and-Scraped jars. Both have red slip along the rim, although the Laguna Dark Red-on-Buff slip is somewhat darker than the more orange-red associated with Laguna Red-and-Scraped, and both have scraped necks. It is only the exterior bodies of these types that are quite different. Laguna Dark Red-on-Buff jars are buff with a variety of decorative red bands, while Laguna-Red-and-Scraped jars are slipped entirely in red below the neck.

Comparisons. This type may match Texoloc Rojo y Café described by García Cook and Merino Carrión (1988).

Potrero Red-on-Brown

Distinguishing Characteristics. Burnished brown vessels (slipped or unslipped) with areas of red slip, often in a band around the interior rim of dishes and bowls. Note that in this type the brown areas are by definition burnished; for red and scraped, see instead Laguna Red-and-Scraped. Open bowls have a band of red slip encircling the rim and upper interior. The rest of the vessel is burnished brown. Also in the case of open bowls, interiors are usually well burnished while exteriors are only roughly burnished. Incised motifs may appear on either the interior or exterior, or on both. Potrero Red-on-Brown is basically a decorative variant of Mesitas Brown, and it is a diagnostic type for the Texoloc phase. In some senses it represents the new "aesthetic" for the Texoloc phase, suggesting a preference for decorated red-and-brown (often composite silhouette) bowls as opposed to the white wares so prevalent during the Tlatempa phase.

Illustrations. Figure 9.45.

Frequency. 190 rims in the Chronological Sample.

Temporal Range. Tlatempa through Tezoquipan, with maximum popularity in the Texoloc phase.

Culture-historical Integrity. Strong, as long as the type is successfully distinguished from González Red-on-Brown.

Surface Treatment. Potrero Red-on-Brown vessels are characterized by the application of red slip (10R 4/6, 10R 5/4–5/6) over a highly burnished brown surface (7.5YR 6/3). Typically the red is restricted to the interior and/or rim of the vessel. Both interior and exterior surfaces are burnished, but generally the interior is more shiny and uniform.

Forms. Principally a type of the Texoloc phase, an era in which the diagnostic bowl form B3-4 constitutes 39 percent of the Potrero collection. Also important at that time are composite silhouette bowls (B6-1a, B6-1b, B6-2). Other forms in minor frequencies are B3-5, B3-6, B3-8, B4, B5-1, B8, B10-1, O1-1, and T. In the preceding Tlatempa phase, rounded-walled bowls (B1-1, B4) predominate in a small collection. In Tezoquipan, rounded-walled vessels are important (B4); also present are B3-2, B3-4, B3-5, B5-3, B8, B9-1, and B11.

Decoration. The few decorated Tlatempa examples included painted bands on the interior and exterior of three vessels, as well as one example each of steps (Motif 13), triangles (Motif 14), dots (Motif 9), and wavy lines (Motif 8) excised on the exterior of vessels. In the Texoloc phase at Tetel, grooved decoration on the downcurving everted rims of composite silhouette vessels predominates; the most common Texoloc motifs include line breaks (motifs 11a, 11c, 11e; 29 percent), simple horizontal lines (Motif 1; 27 percent), wavy lines (Motif 8; 20 percent), and triangles (Motif 14; 10 percent). In the Texoloc and Tezoquipan phases, vessels are often decorated with incised motifs on both the interior and exterior.

Potential Misidentifications. It can be somewhat difficult to distinguish from González Red-on-Brown, though vessel walls of the latter are usually thinner and of hard-fired Metl paste. Common vessel forms for the two types are also distinctly different. In eroded collections, Potrero could perhaps be confused with the two polychrome types, De Haro and Yano.

Comparisons. Identified as Texoloc Rojo y Café by García Cook and Merino Carrión 1988:285–287) and as Grupo Rojo Sobre Café at Xochitécatl (Serra Puche et al. 2004:84–85). A red-on-brown generically similar to Potrero is the predominant type at Ticomán (Vaillant 1931:275–281) and Cuanalán (Manzanilla 1985; Sanders et al. 1975: Table 37).

Tejales Incised

Distinguishing Characteristics. Combines red slip with large areas that are scraped or burnished in the color of the clay and with a characteristic set of incisions.

Illustration. Figure 9.46.

Frequency. 10 rims in the Chronological Sample.

Temporal Range. Tlatempa through Tenexac.

Culture-historical Integrity. Appears to be strong, but a larger sample is needed.

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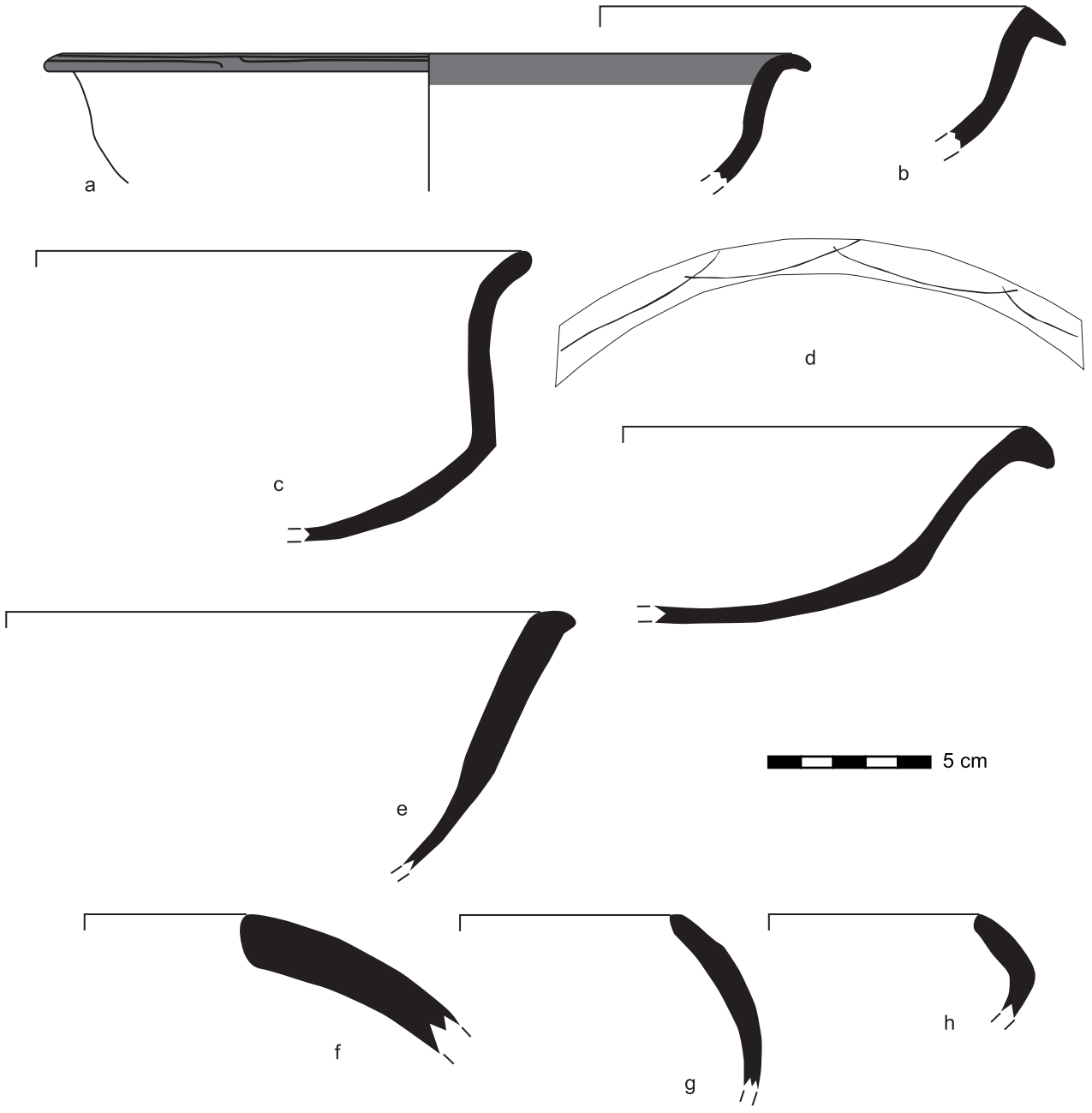

Figure 9.45. Potrero Red-and-Brown, Texoloc to Tezoquipan phases: (a, b, d) dishes with downcurving everted rims; (c) composite silhouette bowl with unmodified rim; (e) composite silhouette bowl with interior rim thickening; (f) tecomate with thick walls; (g) tecomate with thin, gently rounded walls; (h) tecomate with thin walls and shoulder. Proveniences: a, b-112[A15-1S], c-286, d-Las Mesitas road cut collection 12, e-221+286, f-1269, g-1496, h-1450.

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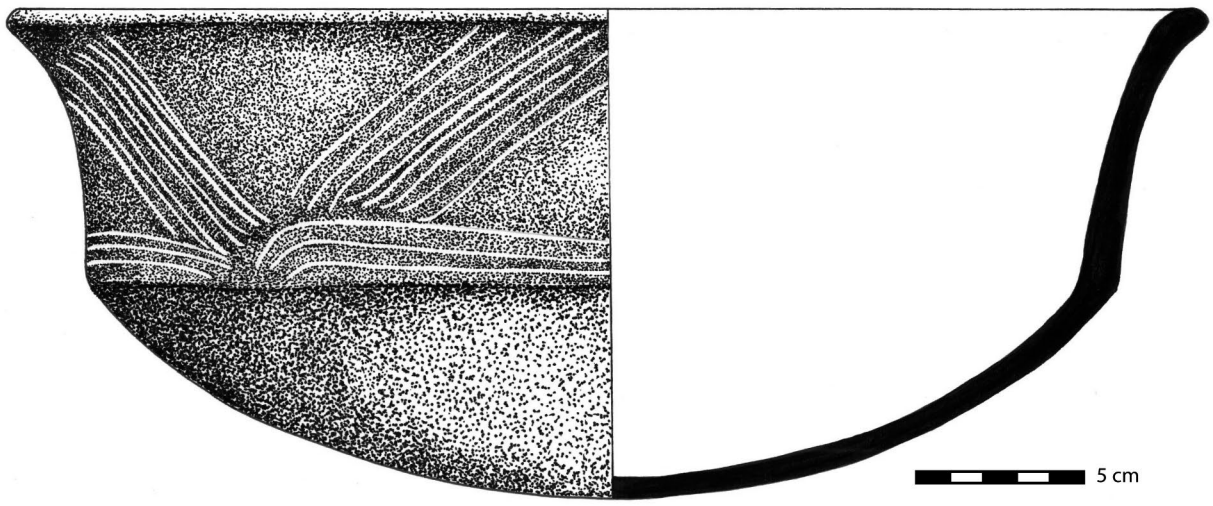

Figure 9.46. Tejales Incised composite silhouette basin from Lot 1117. Drawing by Juan Bazán Ortiz.

Paste. Laguna ware.

Surface Treatment. A well-burnished red slip is applied to some parts of the vessel. Other parts are burnished in the brownish color of the underlying clay or are only scraped. The red slip is of the same kind as in Laguna Red-and-Scraped, hovering around 10R–2.5YR 4/6. The brown surfaces are moderately well to poorly burnished and may actually come in the most varied tones of brown, buff, and gray, often ranging through several of them within the same vessel. The boundary separating red from scraped or red from burnished brown is horizontal and runs along the whole circumference of the vessel. It tends to be sharper on the outside than on the inside of the vessel. Red slip typically covers the upper part of the vessel, from rim to shoulder on the outside and from rim to somewhere on the collar on the inside.

Forms. Almost exclusively composite silhouette bowls (B6), most of them large and deep "basins" (B6-2) exceeding an individual serving size.

Decoration. The interior rim and exterior collar bear post-slip incisions. The incised lines are very narrow, rarely exceeding a width of 1.5 mm. They tend to be narrowest on the rim, where they may be less than .5 mm wide. They are somewhat carelessly executed and rarely trace a perfectly straight line, as if a tool were drawn with some difficulty over an already leathery or dry clay surface. On the rim interior the dominant motif is that of the multiple line break (Motif 11). On the exterior of the collar is decoration based on lines running diagonally at an angle of about 45°: a checkered pattern, triangles, or chevrons, often mounted on segments of the multiple line break motif (motifs 3, 11, and 14).

Potential Misidentifications. The scope for the misclassification of rim sherds of this type is limited, as it is based on a very specific set of decorative attributes usually visible near the rim and running along the whole circumference of the vessel. The most serious problem is presented by those few sherds of Laguna Red that bear incisions. These should be distinguishable by their greater width (they are often more properly described as grooving rather than narrow-sense incising) and different decorative motifs. It is important to stress that Tejales is not just any kind of incised Laguna Red or incised Laguna Red-and-Scraped. The incisions found on the rim of Tejales vessels are not as diagnostic as those found on the collar, and very small incised rim sherds of Potrero, or of Xalmonto lacking white slip, could also possibly be confused with Tejales.

Comparisons. Most authors would subsume Tejales under their equivalents of Laguna Red or Laguna Red-and-Scraped (see above). For the last Formative construction stage at Xochitecatl, however, Serra Puche et al. (2004:85–89) describe and illustrate several specimens (Figure 35a) that are virtually identical to ours under their Rojo Esgrafiado. The description of their subtypes b and c in particular repeats several of the observations we have made above. (Note that in a rather confusing aspect of Spanish usage, *incisión* corresponds to excising and grooving, while *esgrafiado* corresponds to narrow-sense incising). A typical specimen of a Tejales B8 basin is illustrated by Muller (1990:Plate 7L) at Cuicuilco. Incised triangles filled with diagonal lines or hatches also appear on the exterior collar of burnished brown and red-on-buff composite silhouette vessels at Cuanalán (Sanders et al. 1975:Plate 16).

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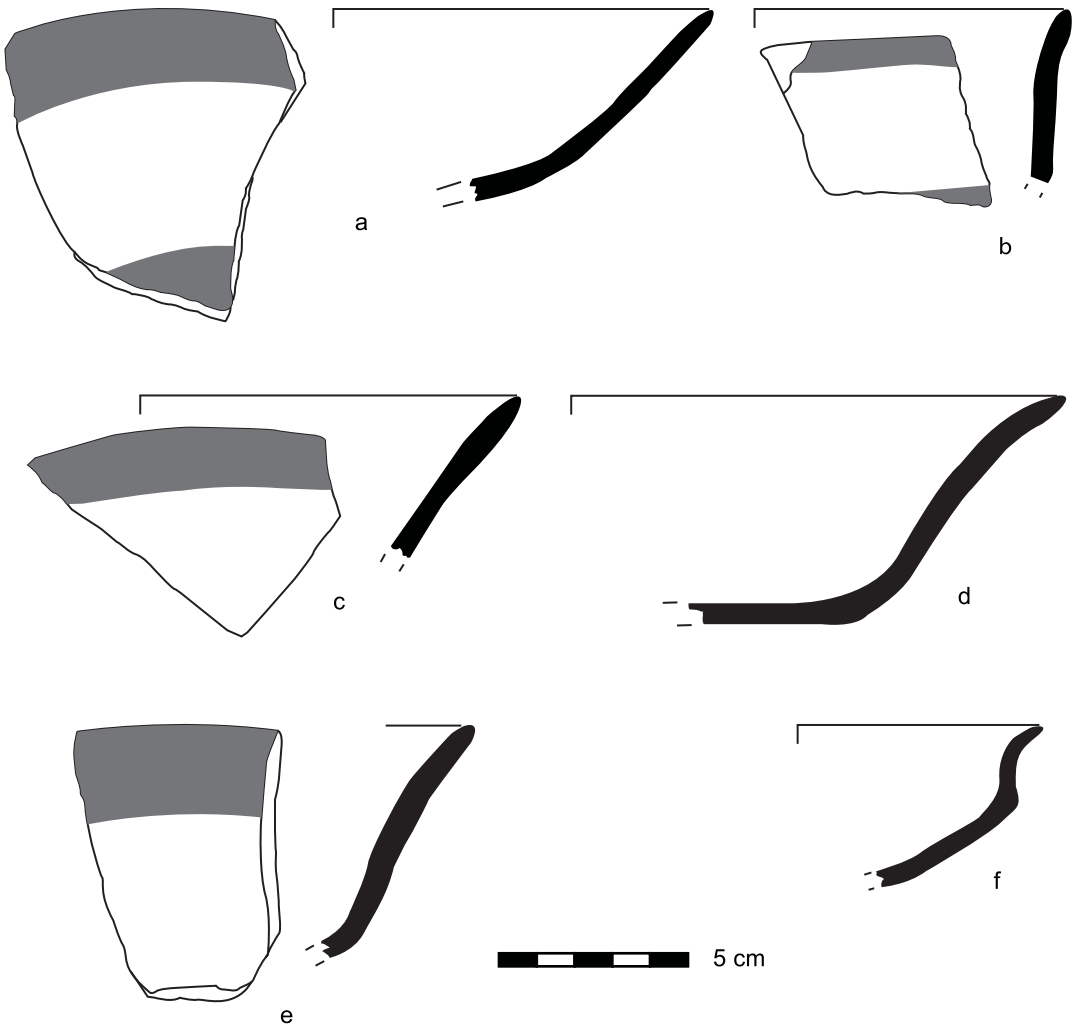

Figure 9.47. Gonzalez Red-and-Brown: (a, c, d) bowl with outsloping walls and flat bases; (b, e, f) composite silhouette bowls with rounded bases. Proveniences: a-1670, b, c-1676, d-1690-91, e-Laguna, f-1691[Lag-D2].

González Red-on-Brown

Distinguishing Characteristics. Red-on-burnished-brown vessels in hard-fired Metl paste. Generally thin-walled bowls with outsloping to outcurving sides and either flat or rounded bases. Brown areas are burnished rather than slipped and are usually a light tan ranging to darker brown in some cases.

Illustrations. Figure 9.47.

Frequency. 65 rims in the Chronological Sample.

Temporal Range. Tenexac.

Culture-historical Integrity. Strong.

Surface Treatment. Burnished brown surfaces range from light (most common) to dark (7.5YR 4/2, 7.5YR 4/4, 7.5YR 6/4, 5YR 3/3, 5YR 4/4, 5YR 5/4, 5YR 6/4). Red slip appears as a band along the interior rim and in the interior base (10R 3/5, 10R 4/6, 10R 5/6). Occasionally the entire interior is red.

Forms. More than half are outsloping-walled dishes (B2) with bases rounded (B2-1), rounded below a marked shoulder (B2-2), or flat (B2-3). In some cases walls are outcurving (B2-4), a rare trait in our collection. Rounded-walled hemispherical or restricted-rim bowls (B4, B5) are also present, as are classic composite silhouettes (B6) with low-rise collars and of diminutive size. Other forms include B1 and B10.

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Decoration. Red slip is applied as a paint, mainly confined to rim bands and solid areas (for example, interior bases). Incising is entirely absent.

Potential Misidentifications. Compared to Potrero Red-on-Brown, González tends to be lighter in color. The walls are also thinner and the paste harder. The vessel forms are distinctive; for example, B2 is virtually unknown in Potrero while B3-4 is unknown in González. The burnished tan interiors can be quite similar to those of De Haro Polychrome, but the exteriors do not have white slip—they are often only roughly burnished—and the common vessel forms are different.

Comparisons. González Red-on-Brown appears similar to Tenanyecac Rojo Sobre Café in the variable tone of the browns and degree of burnishing; our forms correspond only roughly to those identified by García Cook and Merino Carrión (1988:306–308). González also seems similar to Tzacualli-phase Red-on-Natural at Teotihuacan (Rattray 2001:133, 147–149).

POLYCHROME

Polychrome pottery is rare in our collection and confined to the last half of the sequence. We identify three types, both of which are elaborations on a basic scheme of red-on-burnished-buff.

Xilomantla Polychrome

Distinguishing Characteristics. Vessels with white and red slip applied atop burnished brown.

Illustration. Figure 9.48.

Frequency. One rim in the Chronological Sample.

Temporal Range. Texoloc.

Culture-historical Integrity. Appears strong, but the sample size is small.

Paste. Metl paste; hard fired with thin walls.

Surface Finish. In our small sample, the interiors are a burnished brown to tan. Red and white slips are applied side by side (rather than one on top of the other) on the exterior. Slip seems somewhat carelessly applied.

Form. Deep bowls with vertical to outsloping walls and direct rims.

Decoration. Incised line break motifs appear near the rim. Incisions are post-slip, atop the red.

Potential Misidentifications. The white slip is thick and opaque, in contrast to the thin, translucent white of De Haro Polychrome.

De Haro Polychrome

Distinguishing Characteristics. Vessels with red-on-white exteriors and burnished buff interiors, in Metl paste. White slip is thin and translucent and thus sometimes difficult to notice until exteriors are compared to interiors; the latter are not slipped white. The interior is usually decorated with a red band around the rim and sometimes further painted bands or other designs in red. Simple, rounded-walled bowls dominate the collection. Sherds are hard fired and well burnished. In terms of surface finish and paste characteristics, they stand out among typical Tezoquipan-phase sherds in Laguna paste. De Haro appears to have been a fine service ware.

Illustrations. Figures 9.49 and 9.50.

Frequency. 108 rims in the Chronological Sample.

Temporal Range. Primarily the Tezoquipan phase, though apparently (Late?) Texoloc through Tenexac.

Culture-historical Integrity. Acceptable, though further work on the Tenexac occurrences is warranted. The combination of attributes is complex enough that persistence of 500-plus years would seem surprising, but our evidence appears to show persistence of this suite of traits as a local tradition.

Paste. Metl paste, sometimes with a gray core. Volcanic ash and fine sand inclusions are noticeably less than is typical in Laguna ware. De Haro constitutes the earliest appearance of Metl paste in the sequence, hundreds of years before it becomes the norm in Tenexac assemblages of the first century A.D.

Surface Finish. The interiors of De Haro vessels are primarily unslipped, well-burnished buff (5YR 6/4). The exteriors are covered with a thin white slip that varies from cream to orange in color (7.5YR 8/4 to 7.5YR 8/6), but ranging to gray and sometimes translucent with the underlying brown showing through. The thin red slip was painted on, typically in wide bands (10R 4/6).

Forms. Bowls with rounded walls and apparently generally rounded bases, often with beveled rims or lips (B3-2). The other common form is a rounded-walled bowl with a direct rim (B4). Both forms appear mainly in sizes appropriate for individual service, with rim diameters generally less than 25 cm. Other forms occurring in minor frequencies are B2, B3-8, B5-1, B5-2, B6, B11, O1-1, and T1. The composite silhouette dishes are tiny (with rim diameters less than 15 cm). Half the Texoloc–Tezoquipan collection consists of the beveled-rim form (B3-2) whereas in Tenexac the emphasis shifts to a direct rim (B4).

Decoration. Designs in red include bands around the rim of the exterior and/or in the interior, simple designs in bands of red, and curvilinear designs that do not appear as if they were carefully executed.

Potential Misidentifications. De Haro is perhaps most likely to be confused with González Red-on-Brown. The thin white slip on the exteriors of De Haro is a crucial difference, but the range of vessel forms is also distinctive and González vessels are all usually less well burnished.

Comparisons. De Haro Polychrome appeared in late Texoloc as a distinctively hard-fired, fine service ware and reached its maximum popularity in the Tezoquipan phase. The contrast in pastes with the typical Laguna ware of this era raises the possibility that De Haro might represent imported vessels, a possibility that David Carballo is investi-

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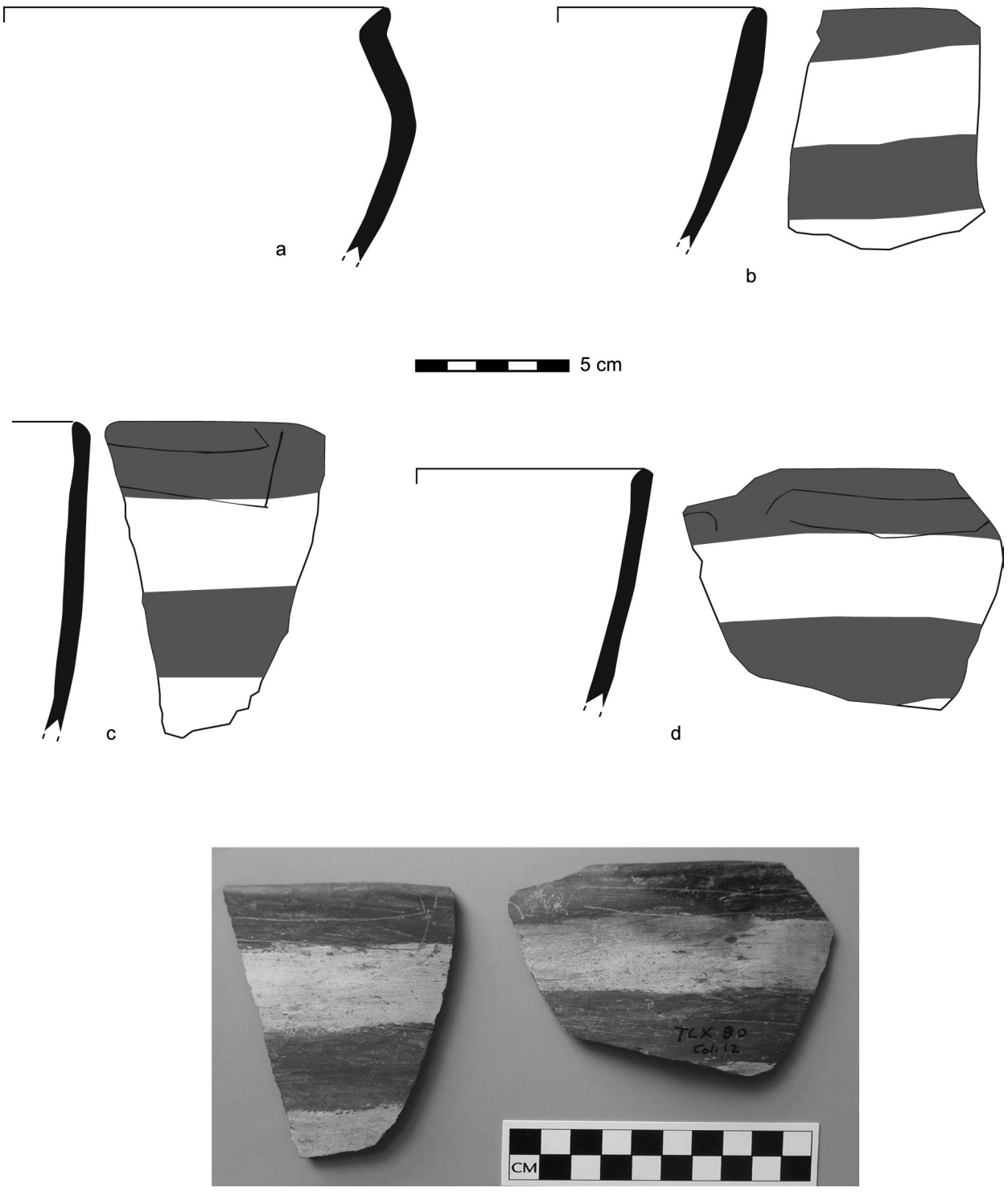

Figure 9.48. Xilomantla Polychrome: (a) composite silhouette bowl; (b, d) bowls with thickened rims; (c) kidney-shaped bowl; at bottom: photo of c and d. Proveniences: a-221[A30-3S], b-232[A35-2S], c-Las Mesitas surface collection, d-Las Mesitas road cut collection 12.

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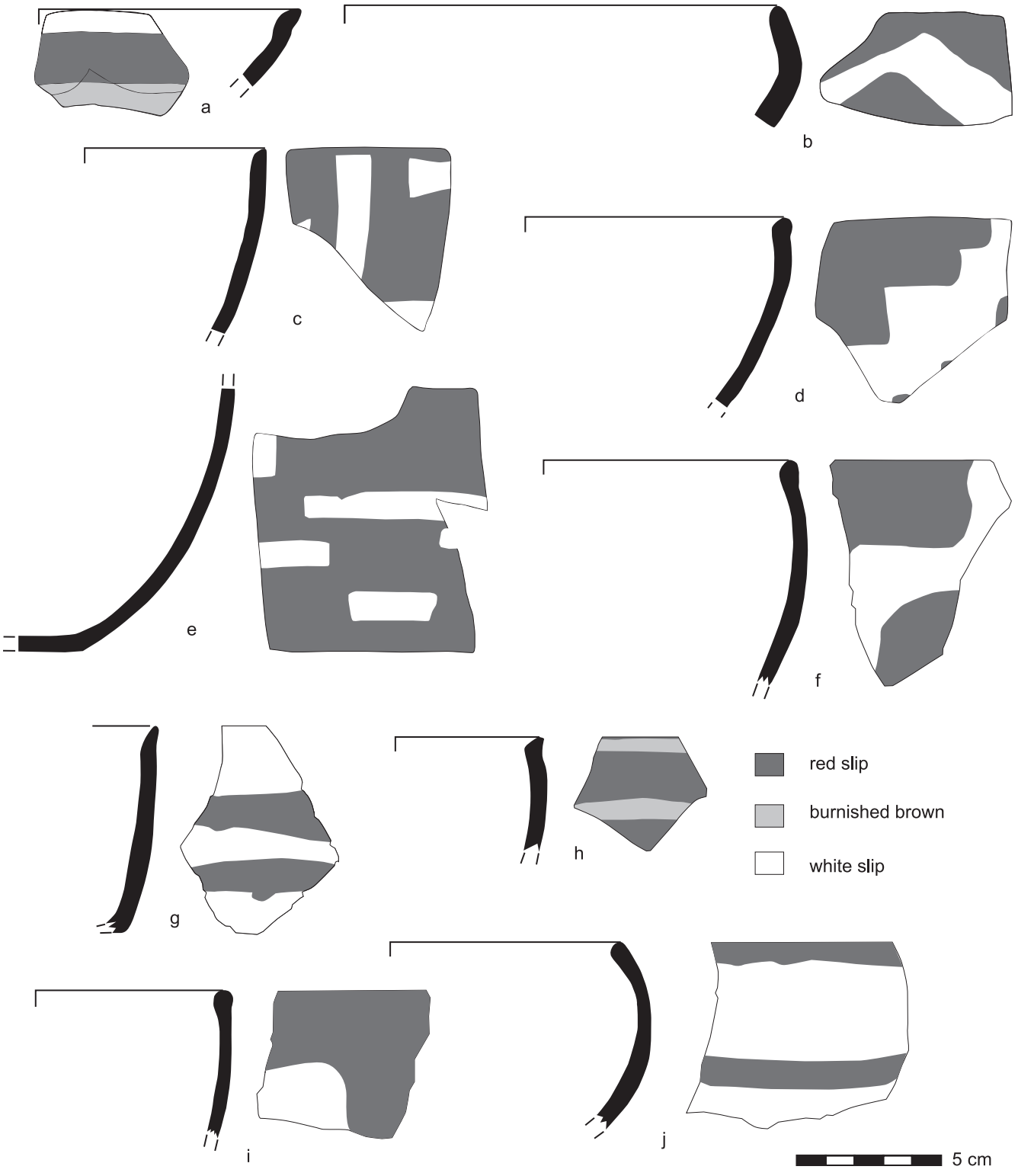

Figure 9.49. De Haro Polychrome: (a, d, f–i) bowls with beveled rims; (b, c, e, j) dishes or bowls with rounded walls and rounded or flat bases. Proveniences: a-1818, c-1862, d-2088, e-1862, f-1083, g-1662, h-1364, i-1068, j-1445.

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Figure 9.50. De Haro Polychrome; exteriors (above) and interiors (below) of the same set of sherds.

gating with composition analysis. Still, we have been frustrated in our efforts to identify a likely external source for this type. Red-and-white on burnished buff is a persistent decorative template in the Basin of Mexico from Ticomán 1 through Tzacualli—that is, essentially throughout the entire span of the occupation of La Laguna—with significant fluctuations in prominence and changes in the details of decorative schemes and vessel forms. However, De Haro is similar to that material—Ticomán, Tezoyuca, or Tzacualli polychromes (McBride 1974; Rattray 2001; Sanders et al. 1975; Vaillant 1931)—only at a generic level. The biggest difference is that white, in the Late and Terminal Formative cases in the Basin of Mexico, is applied as painted lines or designs, generally as a last step after the application of red. In the case of De Haro, in contrast, the white is a slip that covers the entire exterior of the vessel prior to the application of red. We also are unable to find precedents beyond our area for the thin, translucent quality of the De Haro white slip; the tone of the burnished buff underneath modifies the quality of the white to make it unlike any other white in our collection. Given the information available, we propose that De Haro Polychrome represents a local-

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ized Tlaxcalan tradition rather than an imported ware and that this tradition was cohesive and resilient over several hundred years.

Yano Polychrome

Distinguishing Characteristics. Vessels with burnished brown bodies, areas of red slip, and black paint applied atop the red. Rare in the collection and confined to the end of the sequence (Tenexac). Similar in some respects to De Haro Polychrome, but the vessel forms tend to be different (composite silhouettes are important), and areas of red slip are more extensive.

Illustration. Figure 9.51.

Frequency. Four rims in the Chronological Sample.

Temporal Range. Tenexac.

Culture-historical Integrity. Appears strong, though the sample size is small.

Paste. Metl paste.

Surface Finish. Interiors are usually an unslipped, well-burnished buff. Exteriors are slipped red (2.5YR 5/4, 10R 4/6), sometimes in combination with orange. Designs in black paint were applied to the red surface.

Form. Composite silhouette bowls, bowls with outsloping or vertical walls (base unknown), and bowls or dishes with rounded walls.

Decoration. Designs in black paint include parallel diagonal bands and curvilinear shapes. The sample is small and fragmentary, but at least some of the black designs appear to have been "positive" rather than "negative" in that the black paint was not used to create a background from which the underlying red would emerge visually as a design (e.g., Sanders et al. 1975:plates 49a, 49e; Smith 1987:figures 11, 35, 39).

Comparisons. At this point, Yano Polychrome appears only generically similar to what would be its approximate contemporaries of the first or second centuries A.D. in nearby regions. Lacking in particular is the white used in combination with black or with red-on-buff at Los Teteles de Ocotitla in Tlaxcala (García Cook et al. 1976:láminae 4–5) or at Teotihuacan and other sites of the Basin of Mexico (Rattray 2001:149; Sanders et al. 1975:Plate 52). Red-on-buff and the application of dark-colored paint over red are in keeping with Tzacualli-phase assemblages from Teotihuacan without in themselves constituting reliable diagnostic traits (see Rattray 2001:147–151 and Figure 37; Smith 1987:figures 32, 38). Closer external ties might become apparent with a larger sample from our area.

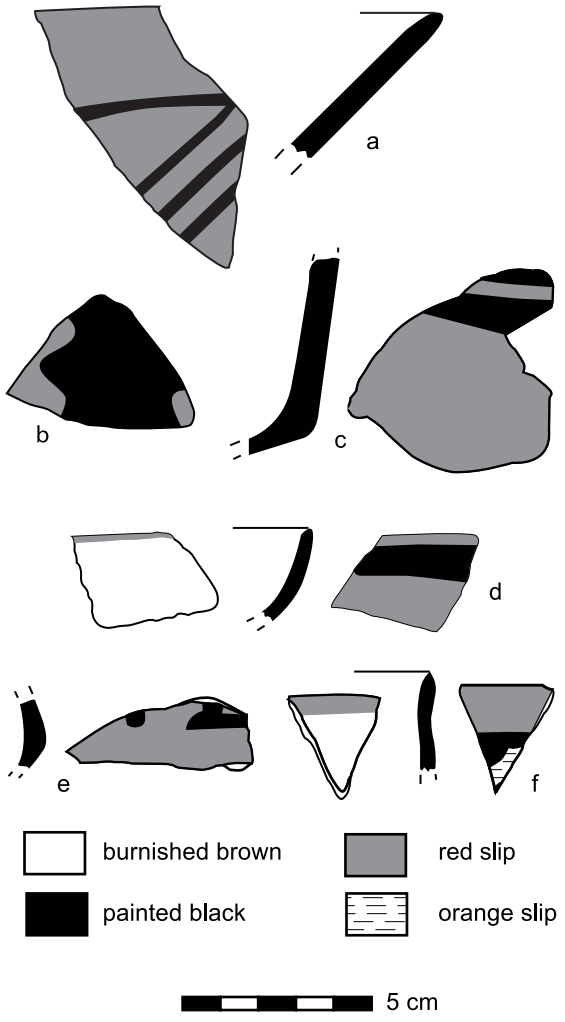

Figure 9.51. Yano Polychrome: (a) bowl with outsloping walls (exterior roughly burnished buff); (b) bowl body fragment (interior burnished buff); (c) composite silhouette bowl with rounded based (interior burnished buff); (d) rounded-walled bowl; (e) composite silhouette bowl body fragment (interior burnished buff); (f) bowl with vertical upper walls, base form unknown. Proveniences: a, b-1676[Lag-D2], c, d, e, f-1690-91[Lag-D2].

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CHAPTER 10

Stylistic and Chronological Analyses of Figurines

Richard G. Lesure

IN RECONNAISSANCE and excavations from 2000 through 2004, we recovered 980 fragments of clay figurines. Those, along with 77 figurines from units of the Chronological Sample excavated by David Carballo in 2005–2006 (see Chapter 8), are described in this chapter. Of the full collection of 1,057 fragments considered here, 50 were identifiable as zoomorphic, while 542 were anthropomorphic head (188), torso (224), or head-with-torso fragments (130). Other pieces were mostly limbs. I present here a stylistic and chronological analysis of the collection. A second chapter, to appear in Volume 3 of the monograph series, will interpret the figurines in social terms.

STYLE IN FIGURINE STUDIES

Over the past decade, I have explored relations between different interpretive approaches to the study of prehistoric figurines (Lesure 2002, 2005, 2011a). In an initial attempt at a general scheme, I identified four modes of analysis—iconography, use, social analysis, and symbolic studies (Lesure 2002:588–594). The relations of those to each other can be understood with the aid of a four-cell interpretive matrix derived from the intersection of two decisions concerning what I was then calling the "meaning" of figurines. First, do meanings reside in surface phenomena explicitly recognized by social actors or in a habitus or structure only imperfectly perceived by participants? Second, should meanings be treated as autonomous systems of ideas to be understood in terms of their internal relationships or, alternatively, as social products that require study in terms of their relations with external (social) circumstances? The four modes of analysis identified in studies of figurines were understandable as distributed across the cells of this matrix. In other words, each is founded on a different set of basic decisions about the nature of *meaning*, a term I used very broadly. My broad use of *meaning* to cover all insights to be derived from the figurines raised some objections; I have more recently begun referring instead to the "signification" or simply the "significance" of figurines. The point of differentiating the modes within an interpretive matrix is that they are thereby seen to be complementary rather than contradictory.

When I wrote the 2002 paper, I was unsure how another analytical mode, stylistic analysis, could be integrated into this scheme (Lesure 2002:606–607). Since many studies of prehistoric figurines are primarily devoted to stylistic analysis, my inability to account for that mode was clearly a drawback. A solution is to be found by discarding the idea that the two decisions about signification need to be binary. The second decision—the analytical choice about where meaning resides—can instead be understood as ternary in structure. The signification of figurines may be treated as an autonomous set of ideas, as embedded in social circumstances or—I would now add—as emerging from the objects themselves. In other words, the significance of images may be construed as residing in subject matter, social context, or form (Lesure 2011a:49-53).

Like the other two options, the third analytical choice concerning meaning can be linked to its own interpretive mode: stylistic analysis. The concept of style, I suggest, gets at an element of meaning that emerges from figurines themselves. Gell (1998:163) makes this very clear: "Artworks do not do their cognitive work in isolation; they function because they co-operate synergically with each other, and the basis of their synergic action is style." Thus, for instance, while iconographic elements in a work refer to subject matter, stylistic elements *reference other works in the same style*. This is how "meanings" emerge from the im-

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ages themselves. When cast in that light, stylistic analysis can be identified as a key interpretive tool for exploring questions arising from this third response to the question of where signification resides. Further, there are actually two modes of stylistic analysis, corresponding to investigation of the interplay of form within a single period (synchronic stylistic analysis) and to the investigation of sequences of changing forms (diachronic stylistic analysis) (Lesure 2011a:51–52). My new interpretive matrix (Figure 10.1) has six cells, each corresponding to a distinct dimension of the signification of images, prompting its own questions for investigation. Each cell is associated with a particular analytical mode.

It is not necessary to review this scheme in detail here. Of more pressing concern is the challenge of identifying "style" in collections of representational art such as prehistoric figurines. Clearly, styles need to be inferred from the works themselves, through a process that establishes relations among works (Ackerman 1963:165, 182). Stylistic analysis, according to Schapiro (1953:289), involves identifying elements of form, relations between elements, and more vague "qualities" of works. These characterizations resonate with traditional typological work in archaeology and raise the possibility that taxonomy can be a tool of stylistic analysis without becoming an end in itself. Traditional typologies of Mesoamerican figurines thus provide a starting point for the present study.

One other issue from classic art historical treatments of style is worth emphasizing. Distinctions of technique, material, and subject matter may coincide with divisions between styles, but they often diverge (Schapiro 1953:289). Subject matter in particular can vary considerably within the same style; it can also crosscut style. Thus, to identify style, one needs a working understanding of subject matter (and vice versa).

OVERVIEW OF ANALYTICAL APPROACH

Scholars of the Formative period in central Mexico classify figurines using a two-level, alphanumeric taxonomy created in the early decades of the 20th century by Clarence Hay and George Vaillant. Types published by Vaillant are based primarily on figurines from Zacatenco, El Arbolillo, and Ticomán in the Basin of Mexico and from Gualupita in Morelos (Vaillant 1930, 1931, 1935; Vaillant and Vaillant 1934). They have proved valid in adjacent regions as well and are still in use today, with various modifications (Niederberger 1976; Reyna Robles 1971) as well as some significant revisions to Valiant's sequence (Tolstoy and Paradis 1970).

The regional effectiveness of the typology is perhaps its most striking feature. Some of the types, with whole suites of characteristic attributes, are identifiable across regions as large as 50,000 km^2. The regional resonance of such types has justified a characteristic taxonomic exercise. Analysts sort their collections and then match up the resulting groupings to types in the Hay–Vaillant taxonomy. For instance, Sánchez de la Barquera (1996) divides Formative figurines of the Atlixco Valley, Puebla, into some 40 previously defined types and subtypes.

There are two basic problems with this taxonomy and the analytical strategies with which it has come to be associated. First, the types themselves are a motley collection of categories, with an uneven sensitivity to stylistic phenomenon. For instance, there have been few systematic efforts to distinguish style and subject matter in the designation of types (though see Reyna Robles [1971:132] on the iconographic status of Type G2 together with my comments here under the Gazca grouping of the Ehco type). Certain types are well defined and have widespread distributions. Others are dubious as taxonomic categories or restricted in their distribution. A few "types" may be residual categories, leftovers from one of Vaillant's analyses that have acquired, over the years, a false taxonomic legitimacy.

A second problem is that taxonomic relations between the local and the regional are poorly worked out. This problem manifests itself at two points in an analysis. First, during the table sorting of a collection, groupings of like images are "identified" as local expressions of regional types according to idiosyncratic criteria. But good stylistic analyses do not end at the sorting table. As a second step, they move on to consider diachronic relations between types. Vaillant was attentive to that concern, and Reyna Robles (1971) has made further strides toward conceptualizing region-wide sequences. Yet most analysts, most of the time, confront the task of inferring diachronic relations between types from the perspective of a particular local sequence. The implications of that vantage point for stylistic analyses have not been seriously considered.

In the sections that follow, I consider each of the above issues in turn: the creation of valid taxonomic categories that are sensitive to specifically stylistic phenomenon, the relations between the regional and the local at the taxonomic (table-sorting) stage of analysis, and the identification of diachronic sequences of types as viewed from a local perspective but with regional configurations explicitly in mind.

Principles for Constructing Types

Taxonomic convenience and identification of chronological markers have been the most salient principles governing the creation of types among Formative figurines, but above I have laid the basis for a more theory-driven choice of principles. One dimension of the original significance ("meaning") of figurines, I argued, emerged from the objects themselves. That dimension is accessible through analysis of style, and taxonomy is our means for extracting style from the material. If we are planning to use our taxonomy to investigate the signification of these objects as objects, then we need taxonomic principles that pro-

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Analytical Decision #1: The Significance of Images is...	**Analytical Decision #2:** Significance Derives From... **Subject Matter**	**Form**	**Social Context**
A surface phenomenon	What did the image depict? (*iconography*)	How did the figure's form relate to objects in circulation at its time of manufacture? (*synchronic stylistic analysis*)	What was the image used for? (*analysis of use*)
A structural phenomenon	What symbolic implications did the subject matter have? (*iconology or symbolic analysis*)	How was the figure's form determined by its position in a sequence of changing forms? (*diachronic stylistic analysis*)	How did the image express or even constitute social relations? (*social analysis*)

Figure 10.1. A "map" of possibilities for interpreting prehistoric images. Responses to two basic analytical decisions create a matrix of six possibilities. A characteristic question corresponds to each cell of the matrix. Efforts to respond to those questions can be identified as distinctive analytical modes (in italics).

mote the isolation of stylistic phenomena. (The principles would be most useful if they also helped elucidate *variation* among stylistic phenomena. I will take up that issue in the following two sections.) Luckily, traditional typological principles are not so far off the mark. Stylistic phenomena are extremely time sensitive, and "taxonomic convenience" moves us a long way toward isolating style. We need more a shift in emphasis than a fundamental change of procedure. My specific proposals are: to analyze style always with the question of subject matter in mind; to find a balance between situationally flexible and formalized procedures for creating taxonomic groupings; and, finally, to adopt *attribute density*, *coherence*, and *frequency* as explicit criteria for constructing types.

Style and Subject Matter. Stylistic elements in a work reference other works. As long as multiple relevant works are available, therefore, archaeologists are able to observe categories of interest directly in the objects they recover. Still, iconic images also contain references to the subject matter of the image. If we are to isolate "style," an important analytical concern will be distinguishing between stylistic and iconographic elements. This is not to deny that subject matter can become style (Ackerman 1963:167–168) or style, subject matter (Schapiro 1953:305). Indeed, the unstable border between the two may provide an analytical terrain for pursuing theories of embodiment in the study of prehistoric figurines (Lesure 2005). Nevertheless, to identify domains of instability, we need to make a serious stab at actually distinguishing the two.

Iconographic analyses of prehistoric imagery present innumerable challenges, since subject matter needs to be identified without the textual references that pervade interpretation in any historic case. A variety of strategies are nevertheless available (Lesure 2002:589–590, 2011a:54–58). My approach in this chapter is to proceed with stylistic analysis through direct comparisons of figurines, all the while developing and refining an understanding of subject matter for individual groupings and the collection as a whole. Still, I consider subject matter in a disbursed fashion, type by type; a synthetic treatment is postponed until my planned figurine chapter for Volume 3. I have attempted to make the types presented here primarily sensitive to style. Cases in which I am unsuccessful (especially matrons, babies, and zoomorphic figures) are not, I will argue, simply analytical failures. They register the salience of subject matter in these few cases, but their minor importance in the collection as a whole "proves the rule" of the more pervasive importance of style.

Taxonomic Flexibility Versus Formalism. The Hay–Vaillant typology lies toward one extreme of a spectrum of variation in taxonomic procedures. I am not thinking here of the familiar debate over whether types reflect the mental categories of ancient artisans or of modern analysts; surely a bit of both is involved. More significant is how rules governing analytical procedures are conceptualized. On the one hand, there is an anything-goes approach that seizes on whatever patterns emerge from the material and dubs those "types." The Hay–Vaillant typology is an example. The advantage of this sort of approach is its flexibility to adapt to what is unique about a particular set of materials. One disadvantage is that the work of different investigators can yield idiosyncratic results. It is common these days to emphasize the positive side of that pattern—the more interpretations, from differently situated investigators, the better (e.g., Joyce 2009). However, it is still rare for a single collection to be studied more than once. When each collection

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is classified according to idiosyncratic rules, the results of multiple studies tend to add up to very little. Often, as well, individual investigators, faced with the task of reinventing the wheel, choose decidedly suboptimal shapes. Usually the patterns they extract seem to really be present in the collection, but the resulting typology muddles variation of qualitatively different sorts—stylistic and iconographic, for example, or coherent styles and residual categories.

On the other extreme from taxonomic flexibility are formalized approaches to typology, with more clearly specified procedural rules. An example familiar to Mesoamericanists is the type-variety method of pottery classification (Gifford 1976). The advantages of formalization correspond to the disadvantages of more freewheeling approaches. Rigorous conceptual design yields greater replicability. It can also help sort out qualitatively different kinds of patterning. The disadvantage of formalization is the danger of forcing unique patterns into predetermined categories. For example, despite proclamations of flexibility, the type-variety method has tended in practice to make a variety of a priori assignments of attribute classes (paste, surface treatment, vessel form, design motif) to typological level (ware, type, variety).

While my approach here is more formalized than that of Vaillant, I have tried to avoid predeterminations of substance (for example, that differences in paste should be represented at the type rather than varietal level). My rules constituting taxonomic categories are more abstract than that (see next section), and my types and varieties preserve much of Vaillant's anything-goes approach. Still, the type-variety method has been inspirational. For instance, my distinction between stylistic and iconographic analysis of figurines is to some degree modeled on the type-variety division between taxonomic and modal analysis (Sabloff and Smith 1969).

Principles for Constructing Types. My procedure is to identify types among groupings of figurines from the sorting table according to three principles. First, typeable figurines bear many attributes. They have, in other words, a high *attribute density*. This allows the analyst to create robust definitions involving multiple traits.

Second, the patterns across these multiple traits should reinforce each other, creating a sense of *coherence*. This criterion is definitional to any typology sensitive to style; visual coherence is the basis of any "synergistic cooperation" among objects. Coherences of different sorts can be identified, and those at play in art historical analyses of works by a Manet or a Picasso can be complex indeed. For my purposes, simple correspondences in design scheme and identity or divergence of particular traits prove sufficient. Even among such obvious correspondences it is possible to distinguish coherence of two kinds. Visual cross-referencing between figurines can be either *redundant* or *reticulate* (Figure 10.2). Redundancy is the more straightforward of the two; coherence derives from sameness across multiple attributes. A reticulate pattern of coherence is instead netlike or polythetic in structure. Any particular figurine shares some traits with one member of the type, other traits with a second member, perhaps still other traits with a third, and so on.

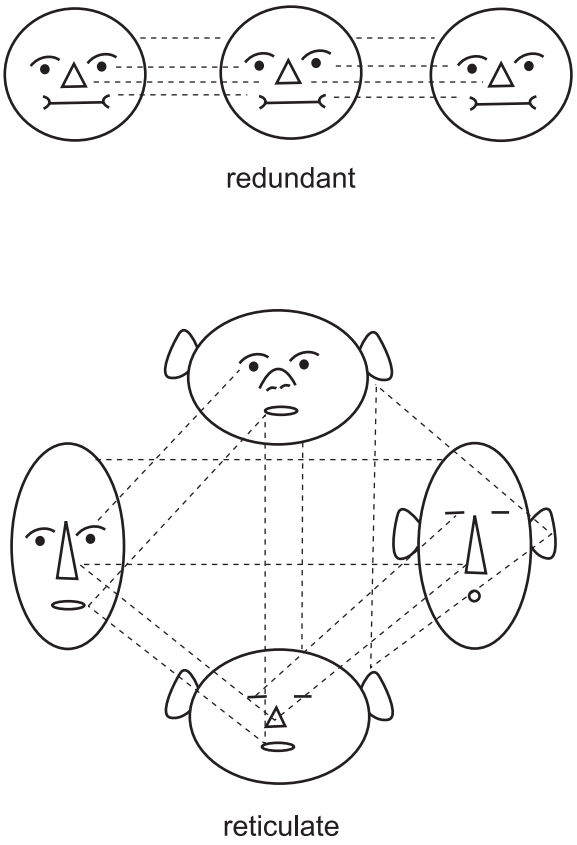

Figure 10.2. Redundant versus reticulate patterning. See text for discussion.

My final typological principal is that groupings designated types should appear in high *frequency*. This principal can be justified at this point simply on the basis of sample size: to assess the internal coherence of a grouping, one needs sufficient exemplars. A larger role for the criterion of frequency will be developed in the following sections.

When the scheme is put into practice, maximizing all three criteria—attribute density, coherence, and frequency—proves to be an analytical juggling game. For one thing, although the criteria seem to lend themselves to quantification, I eschew any a priori judgment about what absolute frequency might count as "abundant" or what number of attributes would constitute a "high" density. Those decisions must be made independently for each collection. A second complication emerges from the potential for contradictory interaction among the principles. Some are reasonably easy to resolve. A simple, schematic set of figurines would have a low attribute density, but if the pieces were highly redundant—virtually identical, say, in several features—then they might well constitute a valid type.

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Other interactions between the principles are more difficult to resolve. There will always be a tension between frequency and coherence. To maximize frequency, one would define a "maximal" type by lumping together groupings distinguished by only slight differences. But by doing that, we lower coherence. Maximal coherence is achieved in "minimal" types. I use "varieties" (subdivisions of types) to help juggle frequency and coherence. Dividing a type into varieties allows abundance to be maximized at the type level, while coherence is maximized at the varietal level.

In summary, my procedures have been as follows. I sorted the Apizaco figurines into preliminary groupings based on similarities of traits and design schemes. I then designated types among these groupings by trying to maximize all three typological principles, building all the while a tentative understanding of subject matter and its variation with respect to style. I introduced varieties as needed to achieve an optimal balance between coherence and frequency. I thus have not divided all types into varieties. Further, not all figurines are assigned to types; several alternative categories are available.

Taxonomic Categories

A stylistic typology of Formative figurines in central Mexico should be a tool for investigations at either local or regional scales. After a century of research, certain patterns are clear. Figurines were relatively common household objects until at least the later Formative. Stylistic change was rapid, and much of the variation in collections is diachronic. However, there was also synchronic variation at both regional and local scales. In the macroregion as a whole, contemporaneous styles overlapped without being perfectly coincident. In one locality at any particular time, there was often a single dominant style. Still, it was not uncommon for two or more styles to be used contemporaneously within a single community. The spread of certain types—D2 or C1, for instance—across large areas implies movement of information. Either people moved about, observing figurines, or the objects themselves were exchanged.

Nevertheless, much about figurine styles remains poorly understood. Were all local variants expressions of some "regional" style? Or, alternatively, is a collection from one locality composed of both regional and uniquely local styles? How did regional stylistic patterns enter local manufacturing repertoires? Did those elements, once embedded in local practices, reference similar figurines in use in other areas or did they simply become the local way in which things were done? How, more generally, did stylistic innovations enter local manufacturing practices? By what criteria did makers and users choose among multiple available styles?

Taxonomic categories should promote investigation of such questions. My concerns here are with categories appropriate for a "local" analysis—an analysis of figurines from a subregion of central Mexico, such as central Tlaxcala. Previous analysts have tended to treat the local as a microcosm of the regional, in which some subset of the full array of regional types should be represented. In that scheme, all groupings of figurines on the sorting table are "identified" as local expressions of a regional type, irrespective of whether those identifications are well supported or tenuous. My alternative is to identify several different sorts of taxonomic categories in the collection under analysis, only some of which are likely to be identifiable as expressions of regional types. In defining categories, I have attempted to craft a taxonomic system appropriate for exploring the questions posed above while keeping in mind the uncertainties that plague analysis of any particular, necessarily limited, collection of figurines.

Regional types are Vaillant's types as refined and used by subsequent investigators. I will not try to tinker with the structure of the regional typology. Normally, when I use the word *type*, I refer to *local types*. Typologies are of course inductively derived hypotheses. Their fundamental claim is that patterning in a new collection will fit comfortably into the taxonomic divisions they establish. The more limited those claims are in scope, the more likely they are to hold up to future scrutiny. It is thus helpful to keep the claims of a typology local. My first aspiration for the types identified here is that they hold up when applied to new collections from central Tlaxcala. I give them their own names even when they seem securely identifiable as local expressions of regional types. That move should help expose the local validity of my types to future review.

Whether or not local types correspond to regional ones is of course of interest, and an attempt to establish such links should follow identification of any local type. Because all local types are (ideally) abundant and coherent, with a high attribute density, links to regional types can be assessed with multiple traits in large samples. Indeed, we might say that types, in the way I have defined them, are those groupings that are *appropriate* for identification as local expressions of a regional type. If a grouping of figurines cannot even achieve the status of local type, then claims linking it to some regional taxon can be considered provisional or even dubious. On the other hand, lack of success in linking a valid local type to anything in the regional classification takes on greater significance. Since we have strong reasons to believe in any category that reaches the status of type, lack of a regional match would suggest significant local deviation from larger stylistic trends. In sum, by raising the bar on what constitutes a local type, I hope to make local/regional comparisons more secure bases on which to build social interpretations.

But what of those groupings from the sorting table that do not rise to the status of type? I consider two main alternative taxonomic categories, along with a few minor ones. All designations made using these categories will be provisional assignments, since one or more of the features that make types relatively secure are by definition absent here. Certain groupings from the sorting table have high attri-

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bute densities but low frequency. They may consist of a single figurine. Their rarity precludes an assessment of coherence. Still, they bear several traits that deviate systematically from patterns in other groupings. I label such figurines "typeable deviates" (TD), since my suspicion is that they would be typeable if a larger sample were available.[1] Typeable deviates are of interest for investigations of local processes of innovation. Are they local experiments with new configurations of traits? Objects imported from other areas? Or legitimate local types that are simply poorly represented in the collection under analysis?

A second category consists of "classificatory residuals" (Res). The most frustrating groupings from the sorting table are characterized by low attribute densities and/or poor coherence. They need not be rare, but their integrity as groups remains uncertain. I label these "residuals" to make very clear that efforts to link them to regional types need to be regarded with suspicion. The term should not be taken to indicate a lack of interest in this part of the collection. In Formative figurine assemblages there are often crude, highly varied figures that apparently coexisted with more formally constructed, rule-bound images. Did crude figurines have different uses? Different makers? (For instance, were they made by children?) Were crude figurines a constant background throughout the sequence or were they more common at some times than at others?

Notwithstanding this potential for interest, there are unavoidable uncertainties associated with classificatory residuals. Strange, broken fragments end up here. Some pieces, with a larger sample, might be identifiable as types. I have broken the Apizaco residuals down into several provisional subgroups according to attributes of various sorts, some of which seem more iconographic than stylistic.

Three other permutations of the typeable deviate prove useful. Some figurines fit in a type but deviate from the norm. I sometimes distinguish deviates that are completely without a type assignment from those that can be linked to a local type. Other figurines mix traits from two or more types. The term *hybrid* has sometimes been used for such objects, but it mislocates the agency involved. I refer to them as "composites." As it happens, the clearest composites in the Apizaco collection can all be assigned to a single type (Coaxomulco). A third category, the "transitional" figure, is useful, though I have used it here only as a foil in the identification of composites. A composite would incorporate a mixture of traits from two styles that coexist in their fully developed forms. A transitional figure would derive from a process of development from one style to another. In this case the styles in question would have been sequential rather than coexistent.

From Taxonomy to Sequence

The table-sorting phase is a crucial step in stylistic analysis, but it is not the final one. Table sorting is followed by an effort to order the groupings established on the sorting table into a temporal sequence. Style, in the way I have defined it, is inherently diachronic. Stylistic elements in each new image reference other—already existing—images in the same style. Style thus necessarily involves relations of anteriority and posteriority among objects.

Any "meaning" to be found in style will therefore involve grasping the import of sequences of change in objects. Referring to this as "meaning" may raise objections, since by examining a several-century sequence of ancient figurines we adopt a perspective radically different from that of any of the original makers and users, who lived out their lives in segments of the entire span. This is one reason I usually refer instead to the "signification" or "significance" of figurines. My usage of all three terms is broad: any of them can be extended to cover whatever insight we wring from the figurines. Although I think Gell (1998) would not choose to use the term *meaning* in this context, he does provide support for the idea that analysis of a temporal sequence can be a route to understanding signification. He points out that consciousness is itself not fixed but involves continually shifting perspectives on events that move from future to present to past (Gell 1998:228–242). To derive social insight from a sequence of art objects, Gell rejects the idea of attempting to grasp the sequence in its entirety, from a single vantage point as it were. He instead proposes entering the sequence and moving throughout it, exploring how it looks from the "now" of each of its constituent objects. To accomplish that, the analyst needs tools for identifying and representing variability in the stylistic phenomena that make up the sequence. Gell's suggestions for *assessing* variability are less useful for my purposes than is his overall idea of perspectival flux. His apparatus for analyzing variability indeed seems tailored to the cases he considers; my alternative scheme is similarly selected with Formative figurines from central Mexico specifically in mind. After touching briefly on the construction of a chronological sequence from the Apizaco figurines, I outline the tools I use to characterize variation in stylistic phenomena.

Gell's (1998) treatment of the topic establishes the relevance of traditional methods for constructing sequences as well as the traditional end products of that analysis, those charts establishing linkages among objects or types so familiar from culture-historical archaeology. My methods for moving from classification to chronological sequence are thus familiar. I draw on existing understandings of changing figurine styles in Formative central Mexico and Tlaxcala in particular; on stylistic observations suggesting relations of contemporaneity or anteriority/posteriority among the figurines; on radiocarbon dates (see also Chapter 11); and, finally, on seriations of selected refuse contexts. I assess the extent to which it is possible to construct a figurine chronology independent of that constructed primarily on the basis of pottery. These various chronological analyses provide a basis for a stylistic synthesis, phase by phase, of the local figurine sequence.

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The analysis of variability, to which I then turn, consists of three basic components: an effort to place types and other groupings into series, an attempt to locate sources of innovation, and an analysis of variability among stylistic phenomena at a more abstract level than that of the obvious differences between types. The goal of linking types into one or more series is to establish historical relations among them. Much of the necessary analysis will already have been accomplished in the chronological section. The basic analytical principle involved is that styles change gradually over time as objects are replicated with slight modifications.

To locate sources of innovation, I return to the idea of viewing Formative figurines from the perspective of a single locality but with regional configurations always in mind. From such a perspective, a distinction can be made between stylistic shifts that derived from local processes of innovation and those that involved borrowing of stylistic elements from another locality. There are no simple archaeological signatures that would allow foolproof identification of sources of innovation, but a consideration of known regional stylistic patterns provides helpful possibilities. Most importantly, from the perspective of any single locality, an external source of inspiration will be likely for any widely distributed style; the source location will be just one of the many possible candidates. The sudden local appearance of a suite of stylistic traits that match contemporary patterns from adjacent areas is likely to signal an external source. For local innovations, we would expect a "fuzzier" onset of change, with transitional pieces perhaps including experiments that turn out to lead nowhere. If diligent attempts to link such transitional figurines—and perhaps even the new stylistic patterns emerging from them—to known regional patterns are unsuccessful, then an argument for purely local innovation might well be strong.

The third component of my analysis considers variability in stylistic phenomena. The intent is to delve deeper than the observation that one style differs from another to ask: Are these two styles stylistic in different ways? Was figurine style in one time period different in structure from style in another period? I approach this issue in two ways. The first is to select a set of abstract parameters according to which stylistic variation might be characterized. It is not necessary to search far. The typological principles used to classify the collection turn out to have theoretical rather than simply methodological significance. For example, style, as I have characterized it, involves cross-referencing among objects. An object that is one of many in the same style will be stylistic in a different way than an object of a rare type. My criterion of frequency is thus a tool for delving deeper into stylistic phenomena.

Another approach to stylistic variability would shift the focus from abstract parameters to individual attributes of the figurines—eyes, noses, earspools, arm positions, and so forth. I consider a variety of parameters, centered on a simple measure of diversity (Pielou 1969:223–224). Diversity is inversely related to my criterion of coherence: high diversity corresponds to low coherence, and low diversity to high coherence. Consideration of diversity across attributes and time periods provides insights that reinforce more abstract observations of changing patterns of style that might otherwise lie buried in the type descriptions.

TYPOLOGY OF THE ASSEMBLAGE

For ease of use, types and other groupings are presented in approximate chronological order. Most groupings, including varieties of types, are given subheadings of equal status. Exceptions include the head varieties of Ehco, which are subsumed within the Ehco type description for reasons explained there. Typeable deviates and residuals are also sometimes grouped for economy of presentation. The top-level headings within this section ("Coffee-Bean Eye Grouping and Other Early Residuals" and so forth) are introduced for greater clarity of presentation; most of them are not themselves taxonomic divisions.

I have provided names for most groupings. Typeable deviates and residual groupings are given sequential numbers and sometimes also names. Type names are meant to be local designations for central Tlaxcala. I have sometimes used type names that begin with or otherwise incorporate the appropriate letter designation from the regional Hay–Vaillant typology. For example, Cuatlapanga is a local expression of C1, Ehco of E2. Variety names are *not* mnemonic in this way. Abbreviations appearing after the names of groupings are codes used in chronological charts later in the chapter.

Counts (N) are based on head and torso fragments only. When it is useful to provide counts of subsets of a single grouping (Cuatlapanga headdresses, Ehco head varieties), a lowercase *n* is used to avoid any confusion that might lead to figurines being counted twice. When percentages are provided, the sample considered involved only those figurines in which the relevant attribute could actually be observed (that is, unknowns were not included). Object sizes given in the type descriptions (for example, 6–8 cm, 7–13 cm, and so on) are estimates of original total height.

Each figurine fragment was given a catalog number in a listing that included all ceramic artifacts. The numbers begin with the last two digits of the season of excavation (01, 03, or 04) followed by three additional digits.

COFFEE-BEAN EYE GROUPING AND OTHER EARLY RESIDUALS

The earliest figurines in the collection have coffee-bean eyes (an oval tab of clay, not smoothed in, with a single, horizontal, slot-like impression). The sample is small and not very coherent, but there are links between subgroupings beyond the eyes. Despite the variation, coffee-bean eye figurines appear to have considerable chronologi-

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cal significance within the local Middle–Late Formative. (The eye form is quite simple, however, and it was subsequently reinvented.) While I resist the temptation to accord the early coffee-bean eye figurines full type status, I treat them like a type in my chronological analysis. When a larger sample becomes available, they will probably be divided into multiple varieties or even types. For the time being, I describe one named variety and several residual groupings.

Amomoloc Variety of the Coffee-Bean Eye Grouping (Amomoloc or CfB)

Sample. N = 8: five torsos with heads; three heads.

Illustrations. Figures 10.3a–e and 10.4a.

Sites. Amomoloc.

Phases. Tzompantepec, continuing into Tlatempa.

Typological Parameters. Density of attributes is moderate. Coherence within this variety is relatively high, tending toward redundancy.

Manufacture and Design. Paste beige to gray (7.5YR6/4 to 5YR6/4), without the orange tinge of the Cuatlapanga type (described below). Surface finish is moderately to very rough, yielding a crude appearance. Still, the overall human form is present, with head, torso, and limbs in roughly appropriate proportion to one another (Figure 10.3a–e). The forehead is not exaggeratedly tall as would become common in Cuatlapanga. Figures were probably 7 to 15 cm in height.

Attributes.

Eyes: A rough horizontal fillet with a single horizontal impression creating the appearance of a coffee bean (a *coffee-bean eye*).

Mouth: Another long, horizontal appliqué, with a single horizontal impression; in form, it is nearly identical to the eyes.

Nose: A rough oblong application beginning between the eyes and descending to the mouth.

Ear/Ear Ornament: Varied. Some have no ears or ornaments, while several have at least a small ear ornament depicted.

Torso/Gender: Two lentil-shaped appliqués on the chest of Figure 10.3b suggest female breasts; the convention is similar to that of the Cuatlapanga type. In one other case, prominent female breasts are depicted with smoothin appliqué (Figure 10.3c). Two other figures are sexless (Figure 10.3a); one of those is miniature and might be a child or baby (Figure 10.3e). Stomachs are flat and pubic areas unmarked.

Posture: One "female" sits; all other figures stand.

Clothing: None.

Arms: Extending out to the sides in standing figures; hands probably on knees in the case of the seated figure.

Hair/Headdress: Most had some sort of hair decoration or headdress.

Stylistic Traits of Cuatlapanga or C1. Although this grouping appears to be the earliest in the collection, it did overlap with Cuatlapanga (see below). Some traits present in the Amomoloc grouping may have been inspired by Cuatlapanga conventions or the more general C1 tradition of which Cuatlapanga was a part. Most of the figures are two-dimensional in conception without being as flat as is common in Cuatlapanga.

Regional Tradition. Unidentified. One head classified as C3 by Vaillant (1930:Plate 13, bottom row 5) bears considerable resemblance in surface treatment, facial features, and techniques for forming the headdress. The eyes of that figure, however, are not truly coffee-bean since they involve two distinct impressions. Further, other C3 figures bear much less resemblance to Amomoloc. Amomoloc facial features resemble those of a figurine from the junction of the Manantial and Tetelpan levels at Tlapacoya illustrated by Niederberger (1987:Figure 361; see also Niederberger 1976:láminas 85–14, 85–16). Also similar are the "high-turban slit-eye heads" of the early Santa Maria phase in Tehuacán (MacNeish et al. 1970:Figure 57).

Residual Groupings of Coffee-Bean Eye Figurines (ResCfB or CfB)

Other figures with coffee-bean eyes oriented horizontally seem also to be generally early. N = 6: two head/torso fragments and four heads.

Coffee-Bean Eye Residual 1. There appears to have been a variety or type of coffee-bean eye figurine larger than the Amomoloc variety. It was at least 15 to 18 cm in height, perhaps even larger. The sample size is small (one head plus two limbs not included in body/head counts). The pieces are better finished than the Amomoloc variety, with smoothed surfaces and greater attention to detail. One leg has a well-formed foot with two fillets making a sandal, a trait otherwise unknown in the Apizaco collection but reminiscent of roughly contemporary Guadalupe-phase figurines from Oaxaca (Marcus 1998:Figure 8:40). The head is two-dimensional and flat in the back, more so than is characteristic of the Amomoloc variety or the other coffee-bean residual groupings. Although the eyes are essentially coffee-bean, one has a punched pupil. The impressions on the eye appliqués are deep, as is the mouth impression, which is located at the base of the mouth appliqué, producing a distinct upper lip with no lower one. The nose is relatively naturalistic in comparison to the Amomoloc variety. One ear remains. A round, center-punched ear ornament is located in the middle of the ear rather than at its base, an unusual trait that also appears in Coffee-Bean Eye Residual 2. See Figure 10.3g–h.

Coffee-Bean Eye Residual 2. Two heads, moderately to roughly finished, with strong prognathism and coffee-bean eyes. The forehead is extended, with a squared-off top. There may well have been appliqués on the head for the headdress, but they have fallen off. Like Coffee-Bean Eye Residual 1, above, a round, center-punched ear ornament

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Figure 10.3. Early coffee-bean eye figurines: (a–e) Amomoloc variety; (f) Coffee-Bean Eye Residual 3; (g–h) Coffee-Bean Eye Residual 1. Identifications: a: 03-035, b: 03-036, d: 03-143, e: 03-039, g: 03-123, h: 03-037 [all A46-2S]; c: 03-122[A54-2S]; f: 01-120. Drawings by Jeremy Bloom (a–b, e–f, h) and Amy Carroll (c–d).

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is located in the middle of the ear rather than at its base (Figure 10.4b).

Coffee-Bean Eye Residual 3. Three other coffee-bean eye figurine heads that are otherwise disparate. One is illustrated here (Figure 10.3f).

Residual 4, Matrons (Matron)

A small but distinctive set of crude figurines from Amomoloc cohere more through iconographic than stylistic traits. They depict fat anthropomorphs, with breasts indicated by small nubbins or larger smoothed-in appliqués. I interpret them as depictions of fat, seated women and refer to them as matrons to draw attention to my use of iconographic criteria to define the grouping.

Sample. N = 4: three torsos and one torso with head.

Illustrations. Figures 10.4h and 10.5.

Sites. Amomoloc.

Phases. Tzompantepec and Early Tlatempa.

Typological Parameters. Moderate attribute density.

Description. Two are from Feature A46. One of those (03-038) is an unusually large mass of solid clay, probably originally 17 cm in height. It weighs 1.25 kg, despite the absence of legs, one arm, and the upper part of the head (Figure 10.5). The paste is beige to gray and the surface roughly finished. Eyes and mouth are crudely formed by deep impressions. Arms rested on the stomach, and fingers are suggested with deep impressions, an unusual feature in the collection as a whole. Breasts are indicated with small appliqué nubbins. The figure had enormous earspools with large circular central impressions, though one is missing. A necklace is suggested with a line of crude jabs.

The other matron from Feature A46 (03-119) is smaller (7–13 cm), but it gives an impression of massiveness even at this reduced scale (Figure 10.4h). The paste is dark gray. It has large, hemispherical breasts, a large navel, and a deep groove indicating the buttocks. Hands apparently did not rest on the body. A third figure (01-117) comes from Feature A23. It is smaller still and less distinctly fat, but a series of traits link it to the Feature A46 matrons. It is seated, with a dark gray paste and hemispherical breasts similar to 03-119. Like 03-038, the hands rest on the stomach and fingers are indicated with deep impressions. Also like 03-038, the third figure has a necklace, in this case formed by a fillet circling the neck with a round appliqué for the pendant. A fourth fragment of a fat, seated body can be tentatively included here; it is not from a datable context.

Regional Tradition. Unidentified. Trejo (1997:31) reports seated torsos that she labels Tlatempa 1, but she does not provide illustrations. The figures are described as flat, which does not match the matrons from Amomoloc.

Residual 5, Crude Anthropomorphs (ResCrude)

This designation is reserved for extremely crude figures (figures 10.4c–d and 10.6a–c). A few others of equal crudity appear in Residual 7, possible babies, described below.

Sample. N = 9: six heads with torsos and three torsos.

Site. Amomoloc.

Phases. Mainly Tzompantepec and Tlatempa but continuing throughout the sequence.

Typological Parameters. Low attribute density and low coherence.

Manufacture and Design. Roughly shaped figures in tan to gray paste, sometimes with an orange tinge.

Attributes. Heads are crudely defined and features are roughly formed with a few jabs. Most have no indication of sex. One crude sticklike figure has an erect phallus, otherwise unknown in the collection. In one case seated; otherwise standing.

Regional Tradition. Some of these appear to correspond to the Tzompantepec 1 type described by García Cook and Merino Carrión (1988:láminas 1i, 1k) and Trejo (1997:31, Lámina 1-1). However, given the low attribute density and lack of coherence, these cannot be regarded as a type. The overall frequency of very crude figures has chronological significance, even though early pieces cannot be systematically sorted from later ones due to low attribute density and low coherence.

Residual 6, Fragments of What Were Probably Large Tzompantepec-Phase Figures

N = 2: both probable headdress fragments. These fragments from Feature 46 are probably figurine fragments. One is noteworthy because it would have been from the headdress of a figure even larger than the massive 1.25 kg matron.

CUATLAPANGA TYPE

This distinctive type is the most common in the Apizaco collection (33 percent of the anthropomorphic figurines) and is diagnostic of the Tlatempa phase. Two varieties, small and large, as well as a few deviates can be identified, with the small variety by far the most common.

Small Variety of the Cuatlapanga Type (CuatSm)

Sample. N = 177: 43 torsos and heads, 77 heads, 57 torsos, plus numerous limbs.

Illustrations. Figures 10.7–10.9, 10.10a–f, 10.11–10.13, 10.15c, 10.15e.

Sites. Amomoloc and Tetel.

Phases. Present as a minor type in Tzompantepec, becoming the dominant type in Tlatempa and disappearing in Texoloc.

Typological Parameters. The density of attributes on Cuatlapanga anthropomorphic figurines is as high as that of

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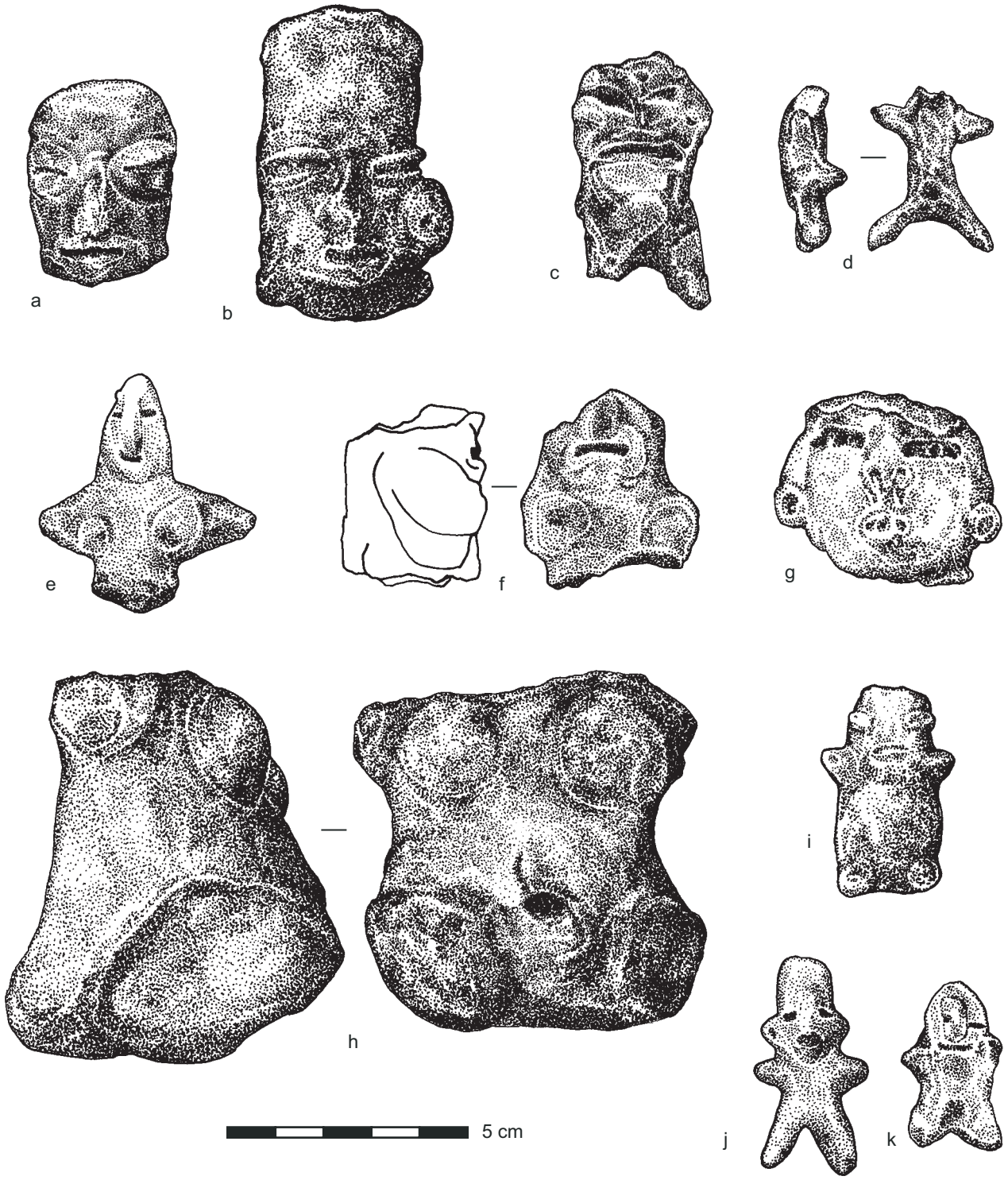

Figure 10.4. Various Tzompantepec–Tlatempa figurines: (a) Amomoloc variety; (b) Coffee-Bean Eye Residual 2; (c–d) Residual 5, crude anthropomorphs; (e) unidentified residual; (f–g) typable deviates 9 and 14; (h) matron; (i–k) possible babies. Identifications: a: 04-247; b: 03-123[A23-2S]; c: 03-048[A46-2S]; d: 03-106[A47-1S]; e: 04-257[A71-1S]; f: 03-126, g: 03-047, h: 03-119 [all three A46-2S]; i: 03-144[A54-2S]; j: 04-253[A74-1S]; k: 04-206[A73-2S]. Drawings by Laura Baker.

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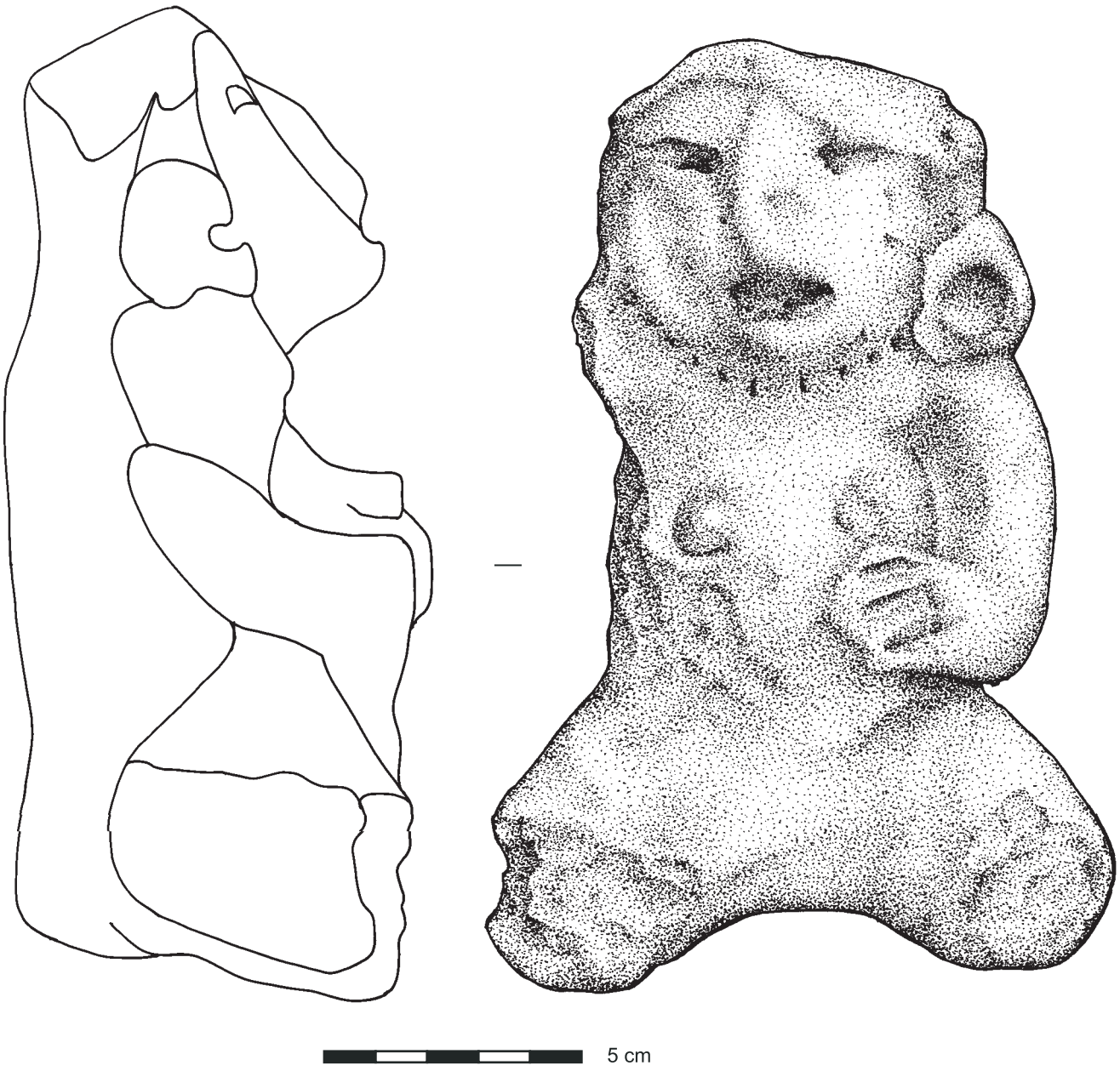

Figure 10.5. Large, solid matron. Identification: 03-038[A46-2S]. Drawings by Amy Carroll (left) and Jeremy Bloom (right).

any type identified here. Only Coaxomulco is similar. The small variety is the most frequent individual grouping in the collection considered in this volume. Further, the type is highly coherent, with attributes such as eyes, mouths, noses, and ornamentation exhibiting redundancy suggestive of rigid conventionality.

Manufacture and Design. The paste was prepared in the same way as that used for the manufacture of Tlatempa-phase pottery. Surfaces were well smoothed but not burnished or slipped. The fired paste is beige with an orange tinge (5YR 8/4, 7.5YR 6/4, 2.5YR 6/4–6/6), typically with a light gray core. Sometimes the exterior surface is gray (10YR 5/1–5/2), probably due to accidents of firing.

Standing figures range from 7 to 13 cm in height. Seated figures are typically somewhat shorter, but their bodies are of sizes similar to the standing ones. Miniatures in the 3 to 7 cm range are rare (approximately 4 percent; Figure 10.9f).

A slab of clay provided the basis for building up the forms of body and head. Arms and legs were then attached and smoothed in. Other features were created with appliqué fillets and balls of clay that were not smoothed in. Impressions with fingernails or twigs completed the form of eyes, mouths, and headdresses. Some figurines bear traces

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Figure 10.6. Crude figurines and other residuals: (a–c) Residual 5, crude anthropomorphs; (d) Typological Deviate 13; (e–g) unclassified figurine torsos; (h–k) Residual 7, possible babies; (l) unidentified head. Identifications: a: 03-116 [A64-2S]; b: 03-115[A46-2S]; c: 03-482[A46-2S]; d: 03-129[A47-1S]; e: 03-044[A46:2S); f: 03-109[A47-1S]; g: 01-123 [A16-1S]; h: 01-127[A4-4S]; i: 03-113[A46-2S]; j: 04-254[A66]; k: 03-117[A64-2S]; l: 01-124. Drawings by Jeremy Bloom (g–h), Amy Carroll (a–b, d–e, i–j), Jennifer Salazar (c, k–l), and Sacha Munson (f).

of paint (described further below). It is likely that many were originally painted.

With just a few exceptions, Cuatlapanga figurines were conceived two-dimensionally. They were essentially flat, elaborated slabs of clay, meant to be viewed from the front (Figure 10.8a). The basis for both body and head derived from the original clay slab, and there was little or no indication of a neck. The head was greatly exaggerated in size relative to the body, with the forehead soaring above the face to provide a basis for an elaborate headdress.

Attributes. There are numerous attributes to record on Cuatlapanga figurines (a high density), but attributes take the same form from one figure to another, resulting in high redundancy. Attributes exhibiting strongest redundancy

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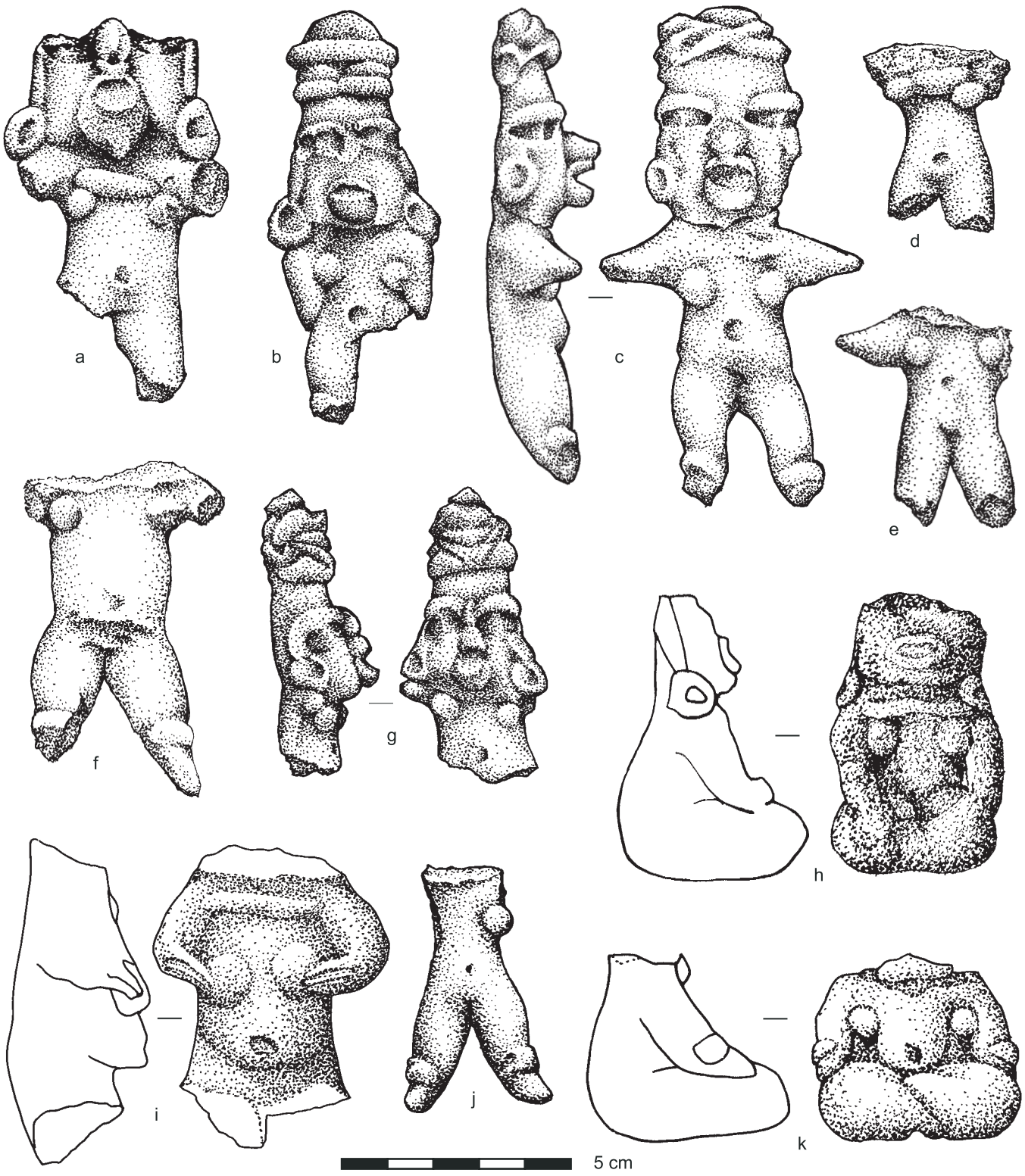

Figure 10.7. Cuatlapanga type, small variety. Females (with appliqué breasts) standing and seated in simple poses; i appears pregnant. Identifications: a: 01-013[A12-2S]; b: 01-006[A23-2S], c: 01-016[A23-2S]; d: 01-014; e: 01-009; f: 01-008[A12-2S]; g: 01-005[A23-2S]; h: 03-055[A54-2S]; i: 04-203[A73-2S]; j: 01-010[A4-4S]; k: 03-057[A60-1S]. Drawings by Jeremy Bloom (a–g, j) and Amy Carroll (h, i, k).

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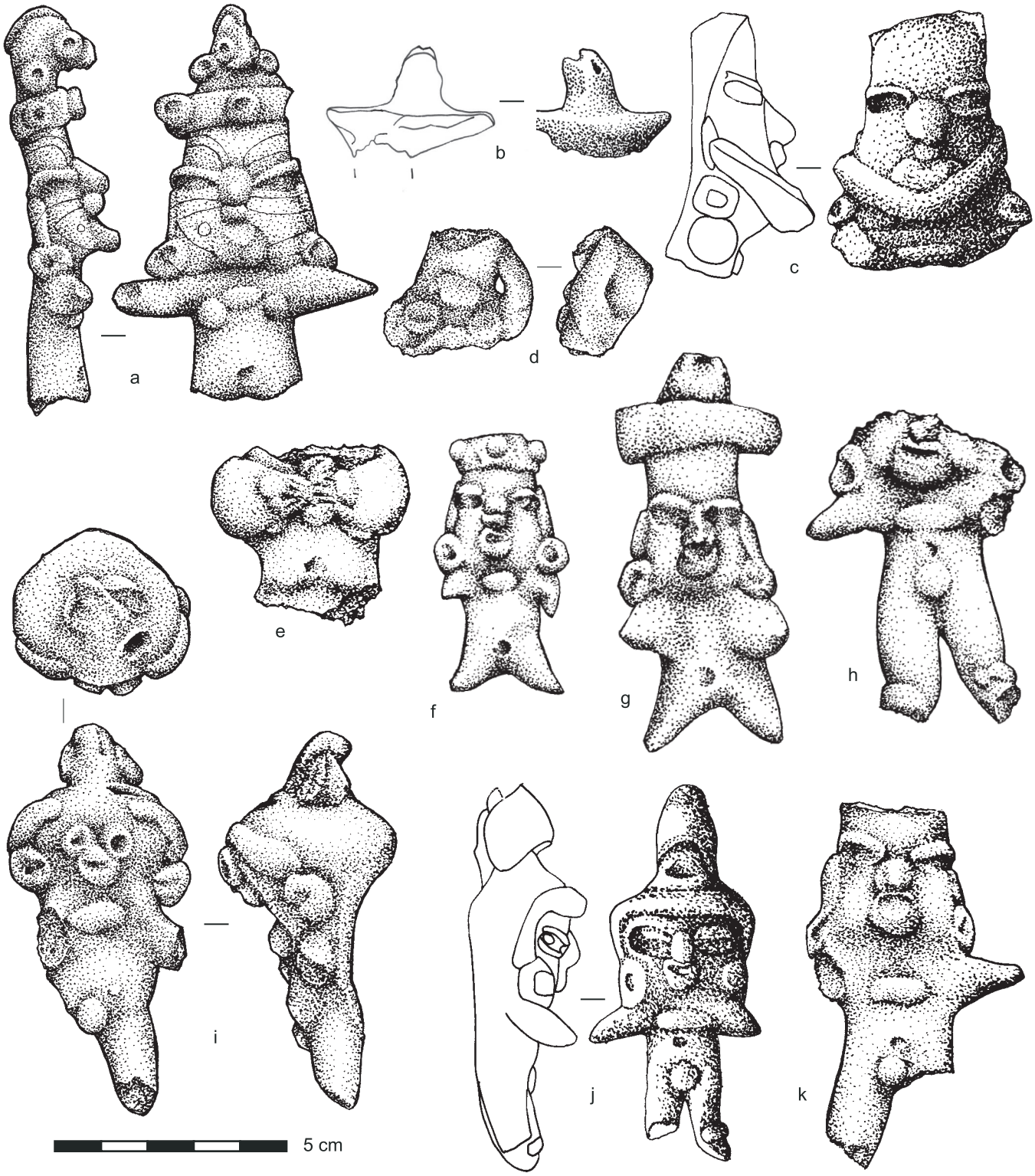

Figure 10.8. Cuatlapanga type, small variety. "Males" and unusual pieces: (a) female wearing headdress with bird; (b) zoomorphic headdress; (c) head with heavy chin strap, headdress broken; (d) neck–chest fragment (with breasts and chest ornament), left hand reaching to back of neck; (e) unsexed figure holding unidentified object in front of chest area; (f–g) unsexed figures; (h–k) males (with pubic appliqué); (i–j) whistles; (i) masked figure with unusual eye form. Identifications: a: 03-046[A47-1S]; b: 04-210[A68-4S]; c: 03-078[A54-2S]; d: 01-023[A11-2S]; e: 01-022; f: 01-004[A4-4S]; g: 01-003[A23-2S]; h: 01-018; i: 01-047[A4-4S]; j: 04-231[A68-3B burial offering]; k: 01-007. Drawings by Jeremy Bloom (a, d–i, k) and Amy Carroll (b–c, j).

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are eyes, noses, mouths, and ears/earspools. Also redundant are chest ornament form, leg form, arm form, and the torso appliqués I identify as conventionalized sex attributes.

Eyes: Formed by two horizontal impressions at the base of a horizontal fillet, yielding a heavy eyebrow. The impressions are usually deeper toward the outer ends of the eye, a trait referred to by Marcus (1998:45), following Valliant (1931) and MacNeish et al. (1970), as two ploughing strokes. The only variant is a round appliqué with a single punch near its center (5 percent); see below under "Masked Figures" and Lesure (2005) for discussion.

Mouth: A rounded tab of clay with a horizontal impression in its upper part to give the appearance of a heavy chin (98 percent).

Nose: A vaguely cone-shaped appliqué, angled somewhat downward, positioned between eyes and mouth with little attention to naturalism.

Ear/Ear Ornament: The ear is an elongate tab of clay. At its base is the earspool, a round appliqué with a single punch in its center.

Torso/Gender: Torsos are schematic. The navel is generally indicated by a single deep punch. Of the 84 complete torsos, 70 percent bear two lentil-shaped tabs on the upper chest (Figure 10.7), while 14 percent have a single round tab in the groin region (figures 10.8h–k, 10.9d, 10.10a–c) or, in one case, a pair of tabs (Figure 10.9e). I interpret these as schematized sex attributes, the first representing female breasts and the second a male loincloth or genitals. No figures are represented with both female breasts and male genitals. Unsexed figures (lacking either of these features) are a heterogeneous group that includes four featureless torsos with neither heads nor limbs, two headless torsos with arms reaching to the front of the body (an unusual feature), one complete figure of normal size (Figure 10.8g), two unusually small figures that might be children (for example, Figure 10.8f), two otherwise unprecedented figures originally attached to a vessel or other object, and several figures with either the breast or groin area obscured by legs (Figure 10.9c), arms, or other objects (Figure 10.8e).

Posture: Standing (84 percent) or seated (15 percent). Seated figures are generally cross-legged (figures 10.7h, 10.7k) and more rarely have bent knees raised in front of the chest (Figure 10.9c). One small figure has very short legs (Figure 10.8f); it might represent a child or perhaps a seated adult, highly schematized.

Clothing: None, with the exception of the schematized male loincloth/genitals. The interpretation of this feature as loincloth rather than genitals is particularly likely for 04-229 (Figure 10.9e).

Arms: Simple, tapering at the ends, without indication of hands. Among standing figures, most arms extend out to the sides (89 percent), often curving gently forward. In a few cases, arms are at the sides (4 percent), resting on the stomach (4 percent) or on the chest/breasts (2 percent). One standing figure held an object (now broken) in front of the body (Figure 10.8e). Most seated figures had hands resting on knees (56 percent); a few had arms on the stomach or extending out to the sides. One seated figure held something (now missing) in its lap. Asymmetric arm positions were very rare (see Figure 10.8d).

Legs: Conical in shape without a defined foot. Among standing figures, the bottom of the leg tends to curved gently forward (for example, Figure 10.8j). A single fillet toward the tip of the leg, present on 56 percent, suggests a sandal or perhaps anklets (for example, figures 10.7c, 10.7f, 10.7j, among others).

Hair/Headdress: Varied, often elaborate. The following classification is based on 75 headdresses, many fragmentary. Figures first divide according to whether the headdress maintains the theme of two-dimensionality so pervasive in this type or instead tends toward three-dimensionality. (Only a few are fully three-dimensional in concept.) Among the two-dimensional figures, a scheme involving a horizontal fillet across the forehead is by far the most common, and the presence or absence of that trait serves as a basis for the second level of classification. For those figures tending toward three-dimensionality, the overall form of the headdress provides a basis for further classification. In some cases, the scheme of the horizontal fillet across the forehead appeared to have been altered to create a kind of frame for the face. Figures with a fillet framing the face tend toward three-dimensionality. (The only exception is the completely unique 04-187 classified under Scheme 17, below.)

Two-Dimensional Schemes:
Horizontal Band Not Present or Uncertain

00: Presence of horizontal band uncertain; n = 6.

01: At the top of the head are one or more small appliqués; n = 1.

02: Ascending bands. Multiple bands ascend from each side of the head to meet at the top (Figure 10.12i–j). Some have considerable further elaboration by application, incising, and/or impression; n = 5.

03: Crossed bands. Two bands cross in the middle of the forehead or toward the top of the head (Figure 10.12e–f). In some cases there is further elaboration by application, incising, and/or impression; n = 2.

Two-Dimensional Schemes:
Horizontal Band Present

Usually the band is unadorned but sometimes it has two or three round appliqués and/or incisions, impressions, or striations (figures 10.8a, 10.9a, 10.10a, 10.12c, 10.12g, 10.12k).

10: Horizontal band across forehead, top of head uncertain; n = 2.

11: Horizontal band across forehead with no appliqués or other elaboration above it (figures 10.9a, 10.11e, 10.12k). In one case the band is extremely wide and extends to the side of the head, a unique trait in the

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Figure 10.9. Cuatlapanga type, small variety. Various subjects: (a–b) females (with breasts); (c) unsexed seated figure; (d–e) male figures (with pubic appliqués; note the partially broken chin strap in d and compare to Figure 10.8c); (f) miniature unsexed figure with chest ornament, possibly depicting a child; (g) female figure (with breasts) with unusual eye form and atypical fillet framing the face; (h) three views of a female figure (with breasts) wearing a zoomorphic mask. Identifications: a: 04-186[A73-2S]; b: 04-188; c: 03-059[A57-2S]; d: 04-230[A68-4S]; e: 04-229; f: 04-204[A73-2S]; g: 04-187[A68-3B burial offering]; h: 03-092[A54-2S]. Drawings by Laura Baker.

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collection (Figure 10.8g). In other instances the band is decorated with three round appliqués, a pattern repeated elsewhere; n = 4.

12: Horizontal band across top of head rather than forehead. In one case the band is plain (Figure 10.9f). In the other it is decorated by three round appliqués (Figure 10.8f); n = 2.

13: Horizontal band across forehead, with additional appliqués at the top of the head (Figure 10.11g). The appliqués at the top of the head are often missing. While there is clearly considerable variation, it is becoming clear that the design schemes are not each unique. Those in Scheme 13 are a somewhat miscellaneous set of mostly fragmentary pieces; see 14 and 15 for specific variants; n = 24.

14: Horizontal band across forehead. Above that there is a set of stacked bands to the figure's left and a round, striated tab of clay to the right (figures 10.9b, 10.12g); n = 4.

15: Horizontal band across forehead. Above that is a zoomorphic headdress, probably a bird, depicted with its own earspools (Figure 10.8a); n = 1.

16: Stacked bands. Horizontal band with additional bands stacked above or below it (figures 10.7b, 10.11h). There may be incising across the bands (Figure 10.7g); n = 3.

17: Unique face-framing band (Figure 10.9g). (This figure was associated with the burial in Feature A68 at Amomoloc.) The only two-dimensional figure with a fillet framing the face was unique in other ways as well. See below under "Masked Figures"; n = 1.

Three-Dimensional Schemes

21: Cone-shaped head. Top of head tapers to a cone (figures 10.11d, 10.11i); n = 5.

22: Mohawk. Head is flattened from the sides to yield a form strikingly resembling a Mohawk hairstyle (figures 10.10f, 10.12h). Some had considerable further elaboration by face frames and/or impressions or other application. Most are now in bad shape. (All examples are loose heads, and it is unknown whether they occurred with female breasts or a male loincloth); n = 5.

23: Hat with a multitab brim. Several figures have what appear to be brimmed hats. The most common form has a wide band or bands around the forehead with a row of round tabs projecting from its base forming the brim (figures 10.11b–c, 10.12d). Other interpretations are plausible, such as that the tabs are hair emerging from the base of a headband. Some have further elaboration by application, incising, and/or impression; n = 6.

24: Hat with a smooth brim. Similar to Scheme 23, only the brim is a single smooth appliqué (figures 10.11a, 10.12a); n = 2.

25: Fully three-dimensional hat with a round brim and an animal effigy. Only the hat itself is preserved (Figure 10.8b). The identification of this as a figurine fragment is supported by comparable figures from the Ayotla phase at Tlapacoya, all elaborately clothed and masked (Niederberger 1987:figures 281, 282b, 284, and 285); n = 1.

Exceptional Three-Dimensional Heads

31: Head is a whistle. One figure is a functional whistle (Figure 10.8j). The head is hollow, with a hole just above a face-framing band. A wide band of clay above that is arched to create a narrow gap. Blowing down from the top of the head produces a whistling sound. This figure, which bears a male loincloth, was associated with the burial in Feature A68 at Amomoloc. One of the masked figures (see Scheme 32) may also have been a whistle; n = 1.

32: Three-dimensional, nonhuman faces. Two figures have heads that appear to be fantastic or zoomorphic. The associated bodies are anthropomorphic and it seems likely that the figurines represented people wearing masks (see further discussion under "Masked Figures," below). One figure has the snout of an animal (Figure 10.9h). The other figure has a bulbous, hollow head (Figure 10.8i). There is a single hole in the head. Just atop that, the head rises in a cone shape; the remains of a strip of clay that ran partway around the cone are just above the hole. The arrangement seems to have been very similar to the functional whistle illustrated in Figure 10.8j; it is likely that this other figurine was also a whistle; n = 2.

Other Plastic Ornamentation: 69 percent have a small round nose ornament between mouth and nose (for example, figures 10.8a, 10.8c, 10.8f), 57 percent have an oblong fillet on the upper chest suggestive of a necklace or pendant (for example, figures 10.7a, 10.7d, 10.7h, 10.8a, 10.8f, 10.8h–k), and 24 percent have strips of clay toward the extremities of the arms indicating bracelets (Figure 10.9b).

Painting: Many figures bear traces of red and white paint, but only in a few cases is enough preserved to characterize design schemes (Figure 10.13). Four colors appear: red (7.5R 4/4), orange (10R 5/8, 2.5YR 5/8–6/8), white, and black. (The black erodes easily and is in most cases only faintly visible.) Painting appears to have been as conventionalized as other attributes of the type. Red (or a combination of red and orange) appears on the breasts and arms as well as the face. Sometimes face paint includes a design in red on the cheek, such as a spiral. Headdresses are accented in red and white. White is also used on other ornaments, including earspools, chest pendants, and anklets/sandals. When the anklet/sandal is white, the tip of the leg below the appliqué is red. Black appears repeatedly as a large round spot centered on the navel and in a bar-and-dot design on the legs, which varies in its details.

Violations of Conventional Design Schemes or Attributes. Given the rigid conventionality of this type, it is worth-

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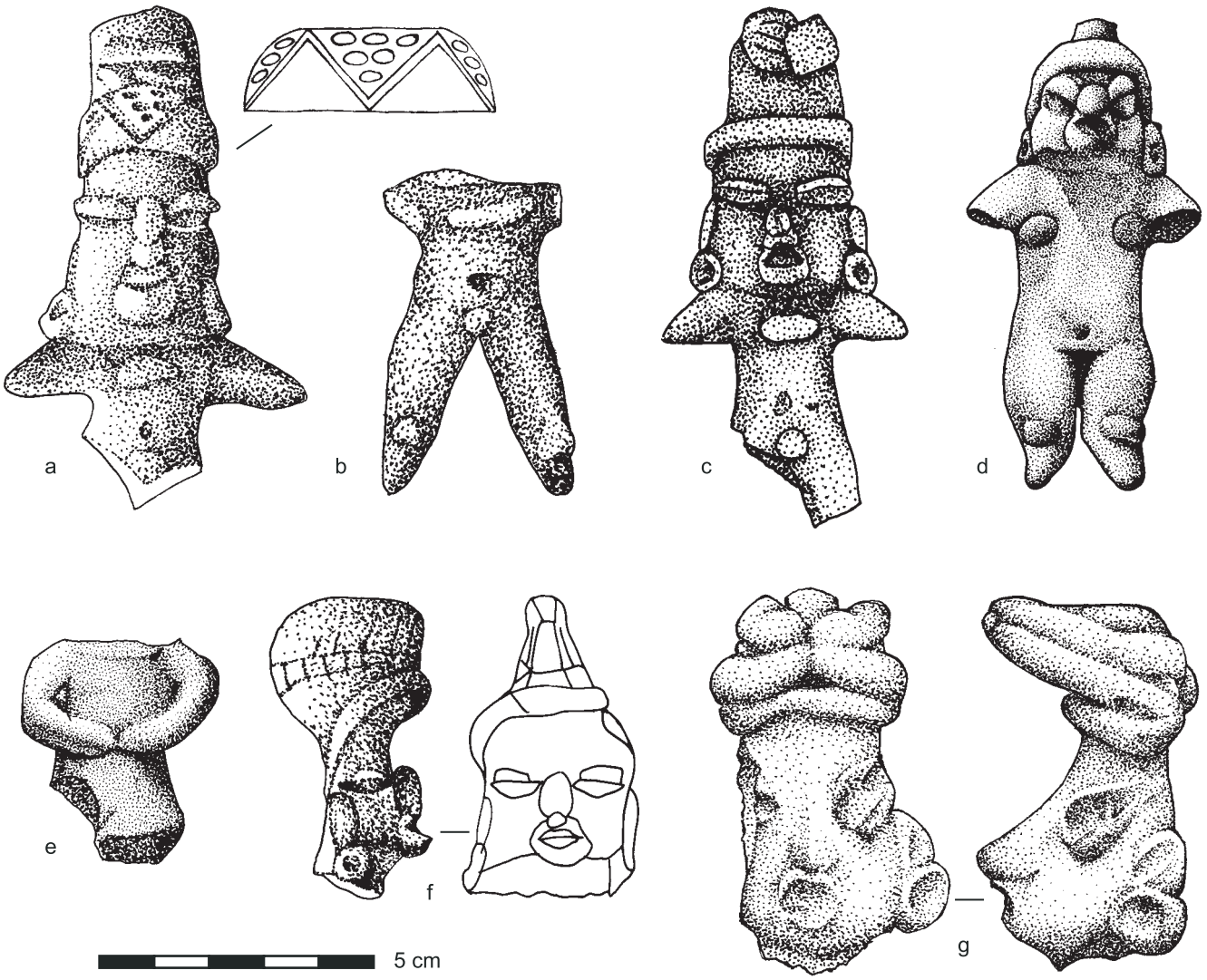

Figure 10.10. Cuatlapanga type, small variety (a–f) and C1 Tradition Deviate 4 (g). Various subjects: (a–c) males (with pubic appliqués); (d) female (with breasts); (e) sexless torso with symmetric gesture; (f) figure with three-dimensional "Mohawk" headdress; (g) fully three-dimensional headdress with unusual eye form and possibly nonlocal paste. Identifications: a: 04-184[A68-4S]; b: 04-225[A73-2S]; c: 03-082; d: 01-011; e: 04-241; f: 03-074[A47-1S]; g: 01-119. Drawings by Amy Carroll (a, b, f), Sascha Munson (c), Jennifer Salazar (d–e), and Jeremy Bloom (g).

while to consider violations of its standard conventions. Some of these have been described sufficiently above. Violations of the pervasive two-dimensionality and static pose include the three-dimensional heads (cone-shaped, Mohawk, or wearing hat are the most common), the seated figures, and the extremely rare figures holding objects (in each case too badly damaged to identify). Four other cases deserve further discussion.

Figure in Action: One fragment seems to show a figure in action (Figure 10.8d). The typical Cuatlapanga chest ornament and female breasts are clearly identifiable. There is much more of a neck than is typical, however, and this bends forward at a strange angle. One arm reaches up to rest on the neck. The other arm appears to have been in a different position, but it is broken. What this piece most clearly emphasizes is the pervasive lack of depicted action among other figures.

Prognathism: Vaillant (1930:99) emphasizes the importance of prognathism and chinlessness for the C1 type. Prognathism in the Apizaco collection is less a defining feature than a point of variation by which some figures break out of the two-dimensionality that is so pervasive in the type (Figure 10.12b).

Seated Figure Supporting Vessel: One unique piece is a seated, sexless figure that originally supported a vessel, an open bowl mostly broken away (Figure 10.15e). The figure minus the vessel is 6.5 cm high; with the vessel it would have been higher. The paste is blackened uniformly. Both

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Figure 10.11. Cuatlapanga type, small variety. Heads and headdresses: (a) hat with smooth brim; (b–c) hat with multitab brim; (d, i) cone-shaped head; (e–g) horizontal band across forehead, sometimes with additional appliqués at top of the head; (h) stacked bands; (j) headdress broken. Identifications: a: 01-044; b: 01-042; c: 01-043[A15-1S]; d: 01-131[A12-2S]; e: 01-033[A23-2S]; f: 01-031[A4-2S]; g: 01-036[A10-1S]; h: 01-035[A15-1S]; i: 01-046[A10-1S]; j: 01-041. Drawings by Jeremy Bloom.

the figure and the vessel were smoothed, not burnished or slipped. Traces of orange paint appear on the remaining arm of the figure. Although the face is damaged, it follows the stylistic canons of Cuatlapanga. The ear/earspool combination is typical. The eyes are roughly formed but match Cuatlapanga norms, as does the mouth. The nose is broken away. A strip of clay reminiscent of the forehead bands so common on this type remains, though it appears where the head joins the vessel and thus was distorted here in comparison to typical Cuatlapanga figurines. The figure itself was seated cross-legged, with hands resting on its thighs. Fingers are roughly suggested, an unusual trait for the type. The stance of the figure is reminiscent of the Old Fire God images in stone and ceramic known from Tlaxcala, Puebla, and the Basin of Mexico from the Late and Terminal Formative (Carballo 2007). Those images depict an elderly, seated anthropomorph supporting a basin and are considered antecedents of the Old Fire God or Huehueteotl of Postclassic times. It is not certain that the Amomoloc figure should be considered an image of the Old Fire God since there are no iconographic attributes of advanced age. If it were to be classified as an image of that deity, it would be one of the earliest known examples, though only by a century or so. For further commentary on this object, see Lesure et al. 2012.

Masked Figures: The eye form of Cuatlapanga figu-

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Figure 10.12. Cuatlapanga type, small variety. Heads and headdresses: (a) hat with smooth brim; (b) prognathic face; (c, g, k) decorated horizontal band across forehead, sometimes with additional appliques; (d) hat with multitab brim; (e–f) crossed bands; (h) "Mohawk" headdress; (i–j) ascending bands. Identifications: a: 03-076[A47-1S]; b: 03-076[A47-1S]; c: 04-197[A68-4S]; d: 03-052[A49-1S]; e: 03-064[A57-2S]; f: 03-098[A54-2S]; g: 04-196[A73-2S]; h: 01-045[A19-1S]; i: 04-211[A67-1S]; j: 04-189[A73-2S]; k: 04-175[A73-2S]. Drawings by Amy Carroll (c, g, i–k) and Laura Baker (a–b, d–f, h).

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Figure 10.13. Cuatlapanga type, small variety. Painted elaboration in red, orange, black, and white. Incidences of white paint are signaled with a w to the right of the image. Identifications: a: 03-068[A47-1S]; b: 03-091[A54-1S]; c: 03-067[A47-1S]; d: 04-186[A73-2S]; e: 04-230[A68-4S]; f: 04-231[A68-3B burial offering]; g: 03-082; h: 04-187[A68-3B burial offering]; i: 04-185[A73-2S]; j: 03-139[A63-2S]; k: Lot 851. Drawings by Amy Carroll (a–c, f–g, j–k) and Laura Baker (d–e, h–i).

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rines is perhaps their most characteristic attribute. There are only three cases in the collection in which eye form deviates from this norm, but other traits warrant assignment to Cuatlapanga (figures 10.8i, 10.9g–h). The deviate eye form is the same in all three: a ball of clay with a single round punch in its center. In addition, all have radically deviate faces. One head is bulbous and hollow, with no nose; another has a zoomorphic snout; in the third, the face is framed by a fillet of clay encircling the head and a nose is again lacking. In all three cases, the rest of the body is anthropomorphic. Given widespread representational conventions in Formative Mesoamerica that crosscut individual types, it is likely that these are depictions of people wearing masks (e.g., Bradley and Joralemon 1993:32, Number 2; Coe 1965:figures 151,157; Marcus 1998:figures 8.31–8.32). It may be that figurines with masks depicted people transformed, no longer human. They were given different eyes from typical human figurines (Lesure 2005). Interestingly, this same form is used for the eyes of the few animal figurines—typically dogs or birds—found in association with Cuatlapanga figurines. (Compare eyes in figures 10.8i and 10.9g–h with those in figures 10.20d, 10.20e, and 10.20h, below, and with the eyes of the bird in the headdress of Figure 10.8a).

Regional Tradition. Cuatlapanga falls comfortably among the "variantes poblanas" of the C1 tradition described by Reyna Robles (1971:Lámina 2) and previously reported in Tlaxcala by García Cook and Merino Carrión (1988:láminas 1f, 1i, 4b–c, 4f, 4j, 4l), Trejo (1997), and Serra Puche and Lazcano Arce (2011:Figure 74, column 2, top). Similar figurines appear through much of the Puebla-Tlaxcala Valley, at least from Moyotzingo (Aufdermauer 1970) to Totimehuacan (Spranz 1968:figures 26–29). Links to Vaillant's Basin of Mexico types are more complicated. There are some similarities with C4 (Vaillant 1930:Plate 14), but Reyna Robles (1971:52) argues convincingly that the so-called C4 type was a confused mixture of several styles—including Puebla variants of C1—that should be discarded. Vaillant's C1 is a better-defined type with numerous points of overlap with Cuatlapanga in paste color, manufacture technique, design, and attribute details (see Vaillant 1930:plates 10, 11). Still, an inspection of the collection from Zacatenco and El Arbolillo at the American Museum of Natural History confirms that C1 is a considerably more diverse type than Cuatlapanga. Vaillant tried hard to subdivide that diversity (C1, C2, C1a, C1b, C1-2), without great success. In the terms I use here, he tried and failed to identify redundant subgroupings. Examination of the original Zacatenco collection indicates that that outcome was not due to some analytical failing on the part of Vaillant but rather to the nature of the collection. C1 of Zacatenco or El Arbolillo has a different stylistic structure than Cuatlapanga.

Study of the originals also identified a strong link between Cuatlapanga and another of Vaillant's types—B—a link that had not been evident from inspection of published descriptions. There are similarities of basic design (the soaring forehead and extreme flatness of Cuatlapanga are both more evident in B than in C1) as well as of some specific attributes (indication of fingers is rare, arms tend to be conical, curving gently forward). There are also similarities of what we might term stylistic structure: B is more redundantly patterned than C1, particularly among the facial attributes so important in Cuatlapanga. In other words, while there is less similarity of specific facial attributes than between C1 and Cuatlapanga, the pattern of relationships between attributes observed in B is a better match with Cuatlapanga. Finally, and perhaps most intriguingly, Vaillant identifies two sizes of B figurines, small and large. Those are similar in size to the small and large varieties of Cuatlapanga, and it is tempting to see a correspondence there. Indeed, a few of Vaillant's B-Large faces (especially AMNH 30.0.7123) are nearly identical to Large Cuatlapanga heads to be described below.

Large Cuatlapanga Variety (CuatLg)

Differs from the Cuatlapanga variety in size only.

Sample. N = 5: one torso with head, two heads, two torsos.

Illustrations. Figures 10.14a, 10.14c–d, and 10.15a.

Sites. Amomoloc and Tetel.

Phases. Late Tlatempa.

Typological Parameters. Same as for Cuatlapanga variety.

Manufacture and Design. Same as for Cuatlapanga variety, except for a distinctly larger size, probably 13 to 18 cm. All are solid.

Attributes. Facial features (eyes, noses, nose ornaments, mouths, ears, ear ornaments) identical to Cuatlapanga variety. One figure has a "hat" identical in scheme to several figures in Small Cuatlapanga (03-060). All three bodies have the same female breasts that are common on Cuatlapanga. They are not enlarged in scale, despite the larger bodies, and thus in this case appear as small nubbins. All three torsos also have chest ornaments. One figure has anklets. Traces of paint on 01-002 follow standard Cuatlapanga patterns: red on the arms; black around the navel and on the legs.

Regional Tradition. A variant of Vaillant's C1 that incorporates numerous features of his B-Large type (see the Small Cuatlapanga discussion, above).

Typable Deviates Within the Cuatlapanga Type (CuatTD)

The Cuatlapanga type is so redundantly patterned that figures deviating from conventional patterns stand out, particularly a few figurines with unusual facial features. N = 3: one head with torso and two heads.

Cuatlapanga Typable Deviate 1 (CuatTD1). A Cuatlapanga figurine with "softened" features. All appliqué features are noticeably less prominent than is typical for Cu-

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atlapanga, and the figure itself is thinner back to front. These characteristics appear to be related to themes that characterize the Coaxomulco type; however, no definitively identifiable Coaxomulco traits are present. Paste is typical of Cuatlapanga (03-069; Figure 10.15f).

Cuatlapanga Typable Deviate 2 (CuatTD2). A Cuatlapanga head with eyes that diverge from the standard eye form. The double impressions that form the eye itself are placed in the center of the appliqué rather than at its base. Also, one eye in particular slants down toward the nose, whereas typical Cuatlapanga eyes are horizontal. The paste is typical for Cuatlapanga. This head is from the Tzompantepec-phase feature A46 (Figure 10.15b; 03-131).

Large Cuatlapanga Typable Deviate 3 (CuatTD3). A deviant version of Large Cuatlapanga. The head is squarer at the top than is typical in Cuatlapanga, and the paste is darker in color than is usual (though that could be an accident of firing). The most important differences have to do with the eyes. Sculpted ridges form distinct eyebrows. The eyes themselves are made with two separate impressions centered on large clay tabs (04-243; Figure 10.14b).

COAXOMULCO TYPE AND MISCELLANEOUS TZOMPANTEPEC–TLATEMPA FIGURINES

This section includes the minor type Coaxomulco—closely related to Cuatlapanga but distinct in terms of stylistic structure—and typological deviates and residuals that date mainly to the Tlatempa phase.

Coaxomulco Type
(Coax, Coax[+Cuat], Coax[+E2])

Sample. N = 28: six torsos with heads, 13 heads, nine torsos.

Illustrations. Figures 10.16 and 10.17a–c.

Sites. Amomoloc and Tetel.

Phases. Present as a minor type in late Tlatempa deposits. Continued into early Texoloc.

Typological Parameters. The density of attributes is high. The type is coherent, but through a pattern more reticulate than redundant. Any two figurines of the type will match up in some features but not others. Several of the figures classified with this type are "composite" in that they bear attributes linking them to another type, either Cuatlapanga or Ehco/E2. I have not separated them as "composites" because Coaxomulco itself seems to be something of a composite type, a truly polythetic stew of attributes including traits borrowed from other types. Interestingly, some Coaxomulco figurines appear to bear traits borrowed from the Ehco type before the latter actually appears in the Apizaco sequence. The inspiration was probably some neighboring region where some version of the regional E2 type was already in use. Although the sample is not large, Coaxomulco figurines are significant in the collection from Feature A4 at Tetel and seem diagnostic of Late Tlatempa.

Manufacture and Design. Paste identical to that of Cuatlapanga, with manufacturing steps also similar. Figures are in the range of 7 to 13 cm in height. Coaxomulco figures were conceived two-dimensionally, and the head was large in proportion to the body. A soaring forehead provided ample basis for an elaborate headdress. Although features were built up by application as in Cuatlapanga, here appliqués are more likely to be worked in to create smooth contours. The result is sometimes a more naturalistic appearance—one that to contemporary Western eyes looks more refined.

Attributes.

Eyes: Typically formed without accompanying appliqué, generally with two ploughing strokes forming the eye itself, followed by a central punch for the pupil (87 percent). Sometimes the whole unit slants toward the nose (Figure 10.16b), but in other cases the eye takes on a more crescent shape (Figure 10.16d). One figure has essentially a Cuatlapanga eye, though the appliqué is much reduced and partly smoothed in (7 percent). Another lacks the pupil punch (7 percent; Figure 10.16a). One case with the normal eye has in addition incised eyebrows, a trait considered late by Trejo (1997:31).

Nose and Mouth: Nose/mouth sets vary between three forms. One figure (7 percent) with Coaxomulco eyes has the typical Cuatlapanga nose/mouth set formed by appliqué and impression (Figure 10.16d). Other figures (33 percent) have smoothed-in, separated noses and mouths that in some instances appear naturalistic (figures 10.16g and 10.17c). Finally there are those (60 percent) that have a nose/mouth combination made by pinching out the face (or smoothing in a single appliqué) and forming nose and mouth simultaneously with a single impression (figures 10.16a–b, 10.16e, 10.16m). This is the way noses and mouths are made among earliest exemplars of the Ehco type.

Ear/Ear Ornament: Ears are typically absent. Earspools are present as isolated appliqués (33 percent) or are appended at the base of a headdress (40 percent). In two cases, the ear/earspool combination typical of Cuatlapanga is present; both cases also have Cuatlapanga eyes.

Torso/Gender: The form of the belly, which bulges in a naturalistic manner, is characteristic for this type. The navel is indicated by a single deep punch. Two figures have the lentil-shaped appliqués that I have interpreted as female breasts in the Cuatlapanga type (22 percent). All other fragments with preserved upper chests bear a pair of smoothed-in appliqués that are plausibly female breasts in a style more characteristic of the type. No figures have anything reminiscent of the male genitals or loincloth identified for Cuatlapanga, though the sample size here is small.

Posture: Standing (92 percent) or seated with legs flat, opening out toward the front (8 percent).

Clothing: One figure wears a sash from its right shoulder to its stomach (Figure 10.16k).

Arms: All the arms in the (small) collection are simple

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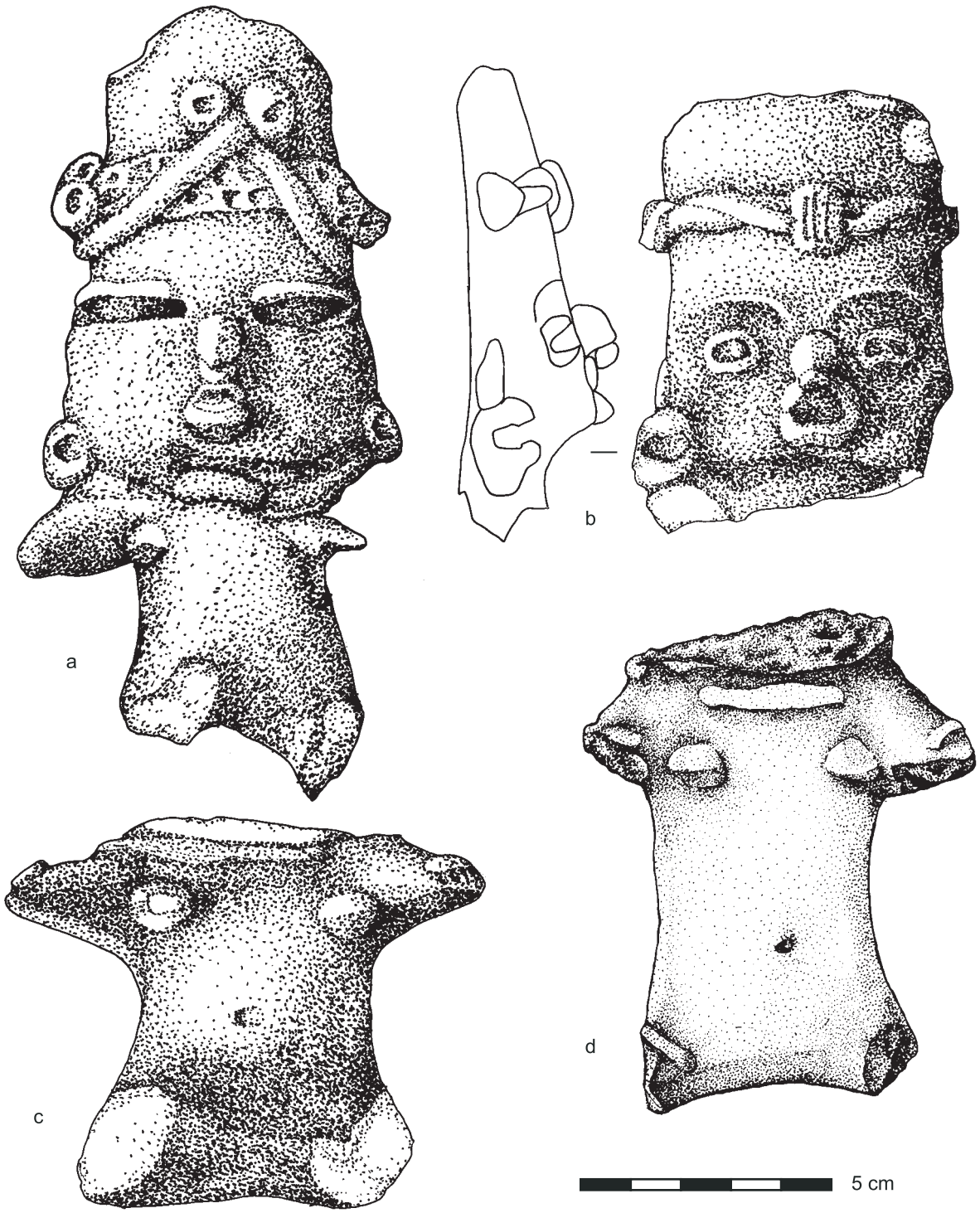

Figure 10.14. Cuatlapanga type, large variety (a, c–d), and Cuatlapanga Deviate 3; d is painted in the standard Cuatlapanga fashion, with red on shoulders–breasts, neck, and feet and with black around navel and on legs. Identifications: a: 01-001[A4-4S]; b: 04-243[A73-2S]; c: 04-242[A73-2S]; d: 01-002[A15-1S]. Drawings by Amy Carroll (a–c) and Sascha Munson (d).

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Figure 10.15. Various Cuatlapanga and other figurines: (a) head of large variety; (b) Cuatlapanga Deviate 2; earliest Cuatlapanga-related head in the collection, with eyes that deviate from the norm for the type; (c) torso of small variety; (d) dog figurine; (e) seated Cuatlapanga-style sexless figure supporting vessel, probably a brazier; (f) Cuatlapanga Deviate 1. Identifications: a: 03-060[A57-2S]; b: 03-131[A46-1S]; c: 03-138[A46-2S]; d: 03-155[A46-2S]; e: 04-235[A76]; f: 03-069[A64-2S]. Drawings by Laura Baker.

in scheme, extending out from the body. They are sometimes tapering cones (figures 10.16a, 10.16d, 10.16k). In two cases, the cone is flattened to form a flipper-like appendage (figures 10.16c, 10.16m). Finally, two other pieces have the hunched shoulders (Figure 10.17a–b) characteristic of the Ehco type and its successors such as Huehuetitla (see below, figures 10.21a, 10,21i, 10.23t).

Legs: Some figures have the tapering, conical legs common in Cuatlapanga (though they do not curve forward at the ends as is typical in that type). The more characteristic Coaxomulco leg descends straight and is finished off by turning up the pointed tip of the clay (figures 10.17a, 10.16i).

Hair/Headdress: The general scheme of the headdress is similar to that of the Cuatlapanga type. One difference in Coaxomulco is the indication of hair by striations, multiple impressions, or short incisions. Another new trait, appearing on three Coaxomulco heads, is an appliqué with two pointed projections positioned on the front of a headband (Figure 10.16g). This may represent a tied bow.

Other Plastic Ornamentation: Chest ornaments appear on five bodies (42 percent). Generally they are more

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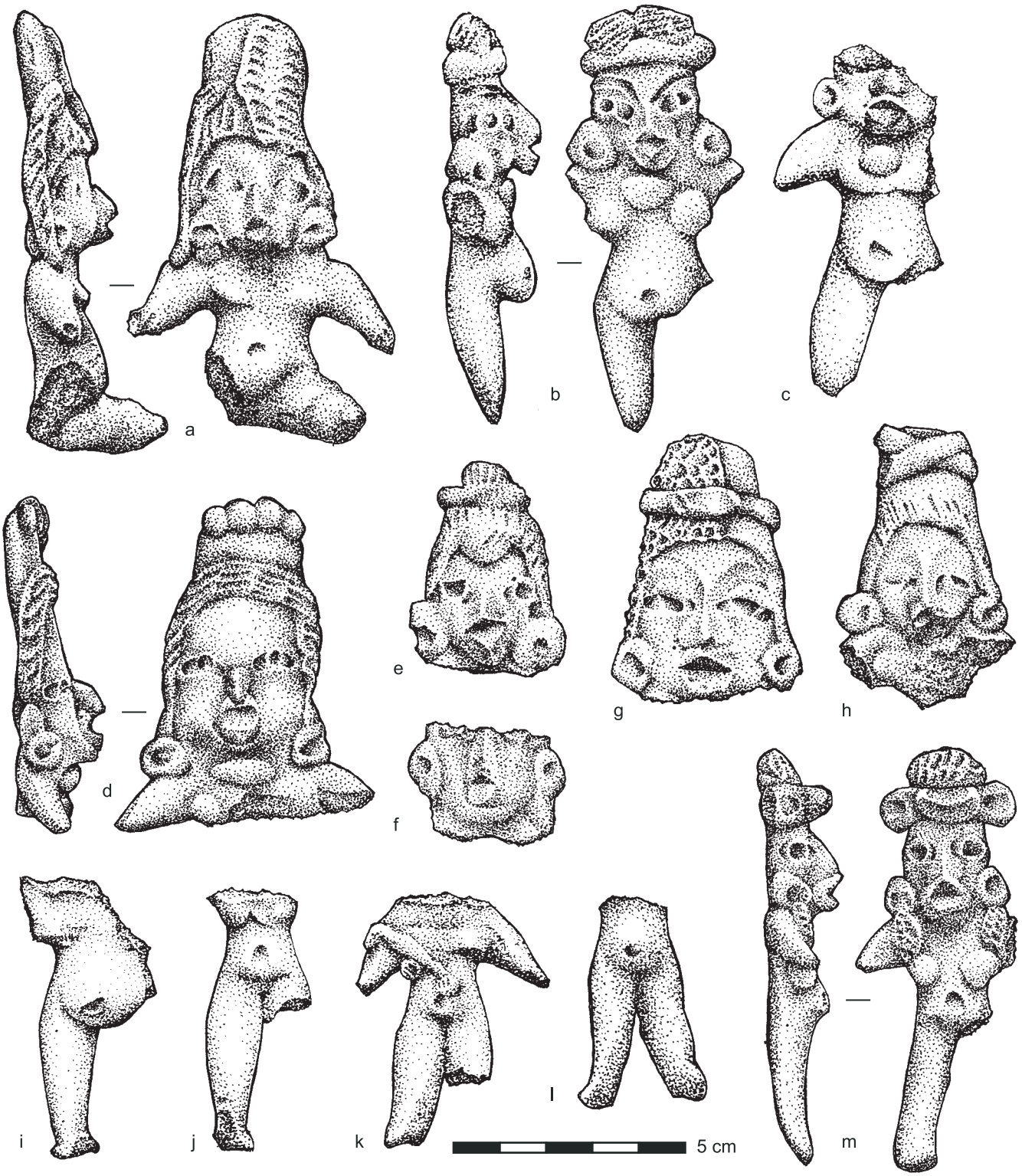

Figure 10.16. Coaxomulco type. Identifications: a: 01-060[A12-2S]; b: 01-051[A4-4S]; c: 01-052; d: 01-061; e: 01-066[A13]; f: 01-069[A15-1S]; g: 01-063[A4-4S]; h: 01-067; i: 01-053; j: 01-055[A4-4S]; k: 01-054[A4-4S]; l: 01-058[A4-4S]; m: 01-050[A4-4S]. Drawings by Jeremy Bloom.

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rounded than is typical in Cuatlapanga, but otherwise they are similar. In one case the chest ornament is identical to Cuatlapanga (01-061, the figure with numerous other Cuatlapanga traits). One figure has a necklace indicated by a fillet circling the neck, terminating in front in a round appliqué tab with a punch at its center (Figure 10.17b).

Painting: Traces of white and red paint suggest patterns similar to Cuatlapanga, but nothing here is well preserved.

Composite Forms: As noted above, composites in the Apizaco collection are concentrated in the Coaxomulco type. The following is a breakdown of the individual pieces:

Coaxomulco, Not Composite (Coax).

Heads: 01-063, 01-068, 01-070, 01-071, 03-095, 03-097, 04-246.

Torsos: 01-053, 01-054, 01-055, 01-056, 01-057, 01-058, 01-074.

Composite Coaxomulco/Cuatlapanga (Coax[+Cuat]).

Head with softened Cuatlapanga eyes and ears/earspools but with thinness, head shape, nose, and mouth characteristic of Coaxomulco: 03-098.

Head plus torso with Coaxomulco eyes and most other features of face and body matching Cuatlapanga: 01-061.

Composite Coaxomulco/E2 (Coax[+E2]).

Heads with nose/mouth formed in the style of Ehco I/II heads: 01-066, 01-069, 03-096, 03-099, 04-244.

Torsos with "hunched" shoulders characteristic of Ehco: 03-142, 04-245.

Head plus torsos with nose/mouth formed in the style of Ehco I/II heads and with shoulders not hunched or for some reason uncertain: 01-050, 01-051, 01-060, 01-067.

Regional Tradition. C10 in Noguera's (1956:215) addition to the Hay–Vaillant typology (see also Reyna Robles 1971:49–51). That type was common at Cholula and appears to have been a C variant, derived, like Cuatlapanga, from C1; it was probably invented in southern Puebla. Trejo (1997:láminas 1:4, 1:7) and García Cook and Merino Carrión (1988:láminas 4h, 4i) report C10 figurines from Tlaxcala. In the Puebla-Tlaxcala Valley, they are reported from Acatepec (Tesch 1977:láminas 1c, 1h, 1j), Totimehuacan (Spranz 1968:13–15, labeled Eb), and Cholula (Noguera 1954:33, 1956:215).

Typeable Deviates within the C1 Tradition (CTradTD)

Several other typeable deviates diverge significantly from Cuatlapanga conventions but nevertheless fall clearly within the range of variation of C1 as conceived by Vaillant at Zacatenco and elaborated into a tradition by Reyna Robles. N = 2: one head and one torso with head.

C1 Tradition Deviate 4 (CTradTD4). Head with eyes that diverge from the standard Cuatlapanga eye form. The eyes here match those of CuatTD2. However, this piece diverges in other respects from standard Cuatlapanga conventions. The paste is a light gray to tan that does not fit well with the rest of the collection. Plausibly, CTradTD4 was manufactured elsewhere and transported to central Tlaxcala. Further, the high degree of prognathism is unusual, and the three-dimensionality of the forward-projecting headdress is unprecedented in the Apizaco region. The headdress matches one described as prototypical by Reyna Robles (1971:láminas 1-1, 1-4, 1-5), suggesting that these features are more common in other regions (01-119; Figure 10.10g).

C1 Tradition Deviate 5 (CTradTD5). Seated figure in the Cuatlapanga tradition but deviating in various ways from standard conventions. The paste is dark brown (7.5YR 6/2), which is unusual but not unprecedented in the type; it is possible that the piece was imported. The figure is conceived more three-dimensionally than is typical in Apizaco, recalling C1 figurines from the Basin of Mexico pictured by Vaillant (1930:Plate 10). The usual Cuatlapanga ear/earspool combination includes here a vertical incision on the ear; the earspools also end up near the back of the head because they are crowded out by the eyes. The double impressions that form the eye itself are placed in the center of the appliqué rather than at its base; the impression for the mouth is likewise centered. The nose appliqué is smoothed in. The flat, lentil-shaped appliqués of the breasts are larger in relation to the body than is standard for Cuatlapanga. Both hands and feet are suggested by a few rough impressions (04-255; Figure 10.17d).

Vaillant's A: Typeable Deviate 6 (TD-Type A)

N = 1: a head from Amomoloc with clear links in multiple traits to Vaillant's Type A (1930:Plate 21). The paste is a pinkish beige (5YR 6/4), and the surface is slightly burnished. The head is large and heavy. Eyes are formed with two ploughing strokes and a central punch for the pupil. The lips are separate modeled tabs inserted into a slot poked into the clay of the lower face, a trait unique to Type A. Probably Late Tlatempa (see Tolstoy 1978:257); (04-256; Figure 10.17g).

Vaillant's F: Typeable Deviate 7 (TD-Type F)

N = 2: torsos with heads, one from Amomoloc and one from Tetel. They have stylistic links with Cuatlapanga, but the heads differ radically from the standards of that type. The orientation of the facial plane is tilted back from the vertical so that the figure seems to be looking up. The head

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Figure 10.17. Coaxomulco type and miscellaneous typable deviates: (a–c) Coaxomulco type; (d) C1 Tradition Deviate 5; (e–f) Typeable Deviate 7, Vaillant's F; (g) Typeable Deviate 6, Vaillant's A; (h) Typeable Deviate 10; (i) Typable Deviate 19; (j) Typeable Deviate 12; (k) Typeable Deviate 21; (l) Typeable Deviate 15; (m) Typeable Deviate 16; (n) Typeable Deviate 11. Identifications: a: 03-142[A61-1S]; b: 04-245; c: 03-097[A64-2S]; d: 04-255[A68-4S]; e: 03-058; f: 03-140; g: 04-256[A75-1S]; h: 03-130; i: 01-101[A15-1S]; j: 01-122; k: 03-016[A32-33]; l: 03-050[A47-1S]; m: 03-132[A64-2S]; n: 03-141; o: 03-125[A47-1S]. Drawings by Amy Carroll (a–g), Jeremy Bloom (h–l), Sascha Munson (h, o), and Jennifer Salazar (e–f, n).

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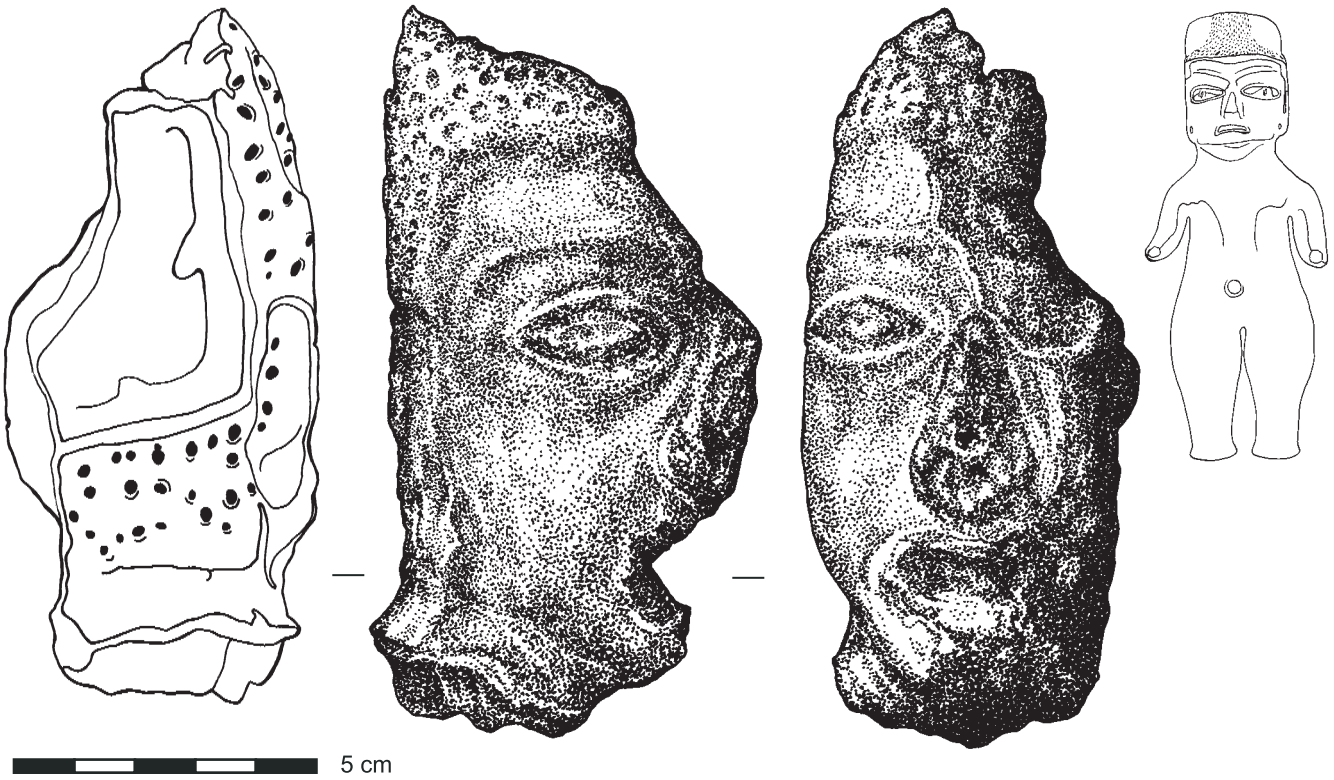

Figure 10.18. Typable Deviate 8, a fragment of D3/K figurine. Back, side, and front view of large figurine head; original appears to have been similar to inset at right, a D3 hollow figurine, height 42 cm, from Tlapacoya (after Niederberger 1987:Figure 329). Identification: 03-133[A54-2S]. Drawings by Laura Baker.

is round and lacks a forehead. Eyes appear at the very top of the head. Both figures are seated, cross-legged, with hands on the knees. They have female breasts in the Cuatlapanga convention. They are a good match for the round-headed specimens of Vaillant's Type F (1930:Plate 25, top row 6–9, bottom row 6–7). García Cook and Merino Carrión (1988:Lámina 4k) depict a similar figure from Tlaxcala, which they classify as C1. These probably date to Late Tlatempa or Texoloc, based on comparisons with the Basin of Mexico, where F is assigned to the latest subphases of Zacatenco (Tolstoy 1978:257); (03-058, 03-140; Figure 10.17e–f).

Other Typeable Deviates, Tzompantepec-Tlatempa Phases

Other typeable deviates from Amomoloc and Tetel cannot be securely related to a local or regional type. N = 10: three heads, one torso, and six heads with torsos.

Typeable Deviate 8 (TD-D3/K). Head fragment of a large figurine (Figure 10.18). Originally, the head itself was about 12 cm tall and 8 cm wide; the whole figurine was probably at least 30 cm tall. The head is solid and finished in a variety of ways. Some areas are just smoothed, some are burnished, and some are slipped red (10YR 6/4–5/4). The eye is lozenge shaped with a raised rim and a raised lozenge-shaped pupil, a form otherwise unknown in the collection. The nose was naturalistically modeled, and the mouth was open; both are damaged. Above the eye is a ridge that defined the eyebrow as well as the upper limit of the nose. Raised areas on the head were covered with punctuations, probably indicating hair. The head strongly resembles D3 figurines described by Niederberger (1987). The size of TD-D3/K matches that of the figurine in her Figure 329, and the headdress composed of polished areas and unpolished/punctuate areas resembles that piece as well. The raised ridge for the eyebrows and the surface polishing in an era in which that was scarce also recall D3. The eyes of TD-D3/K lack the punched pupil typical of D3, but they resemble those of the contemporaneous Type K (Niederberger 1987:Figure 305). These links make this one of the few figures in the Apizaco collection bearing resemblance to Manantial-phase figurines from the Basin of Mexico just prior to 900 B.C. (see also TD14, below). TD-D3/K, however, appears in a Late Tlatempa feature (A54)—albeit in a very damaged state and thus plausibly a carry-up from Tzompantepec deposits (03-133).

Typeable Deviate 9 (TD9). Lower face and upper torso fragment of a figurine with a cylindrical body. There is no differentiation between the head and the body; torso and

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facial features are inscribed on the same cylindrical form. The mouth is a deep slot. No breasts were depicted, and arms extended toward the front of the body. The piece appears to be in a local paste. Feature A46 (03-126; Figure 10.4f).

Typeable Deviate 10 (TD10). Prognathic face with coffee-bean eyes that slant downward toward the nose. The nose was well modeled, with nostrils. The mouth was formed by a single impression (03-130; Figure 10.17h).

Typeable Deviate 11 *(TD11).* Small, seated figure with conventional Cuatlapanga breasts. The arms curve around beneath the breasts to rest on the stomach. The mouth is missing, but the nose follows Cuatlapanga conventions. Still, the head terminates just above the eyes, which are formed by impressions across the central part of the face. Appliqués that hung down the back apparently represented hair. Earspools consisted of wide projecting ears with the ornaments superimposed atop them. The posture is unusual, with the figurine leaning back. The piece is covered with a white stain that seems to be post-depositional. Feature A64 (03-141; Figure 10.17n).

Typeable Deviate 12 (TD12). Crude figurine with eyes formed from two distinct impressions on an oval appliqué. The paste is an unusual gray-green (2.5YR 6/2). There are impressions in the clay of the upper torso (01-122; Figure 10.17j).

Typeable Deviate 13 (TD13). Head and torso fragment with modeled, smoothed-in breasts. Each eye was formed by two ploughing stroke impressions without appliqué; they slant deeply toward the base of the nose. Earspools were formed from large appliqués with central punches; they were not attached to hair or ears. The paste is local. A second fragment appears to be an eroded piece of something similar (03-129, 03-101; Figure 10.6d).

Typeable Deviate 14 (TD14). Broken head in a gray paste. Eyes formed (without appliqué) from two narrow ploughing strokes, curving downward at the ends, with a single central punch for the pupil. Mouth formed from multiple spaced impressions on a smoothed-in appliqué, yielding the impression of teeth. Although the nose is broken, it had deeply punched nostrils, an unusual feature in the collection. These nose and mouth attributes appear on some D1 figurines in Valliant's collection from Zacatenco (1930:Plate 18). The eyes of TD14, however, lack the distinct upper and lower ridges of the D type and seem more similar to those of Valliant's Type A (1930:Plate 21). Since this piece is from the Tzompantepec-phase Feature A46, the possible D attributes make sense chronologically. Figurine types D1 and D2 would be characteristic of the Manantial horizon, which would have preceded Tzompantepec in Central Mexico (03-047; Figure 10.4g).

Typeable Deviate 15 (TD15). Head and torso fragment in a grayish brown paste. Features elaborated with abundant jabs into the wet clay. Eyes formed from two narrow, slot-like impressions with a central punch for the pupil. Headdress consists of an appliqué with multiple jabs. Four gouges at the end of the remaining arm suggest fingers (03-050; Figure 10.17l).

Typeable Deviate 16 (TD16). A strange anthropomorph, just a head on two short legs with no torso. Features are crudely formed, with multiple jabs into the wet clay. Paste has the orange tinge typical of Cuatlapanga. A piece broken off the back suggests the figure might once have been attached to something else (03-132; Figure 10.17m).

Residual 7, Possible Babies (Baby)

Some diminutive figures may represent babies or children (Figure 10.6h–k).

Sample. N = 11: three torsos and eight torsos with heads.

Sites. Amomoloc and Tetel.

Phases. Mainly Tzompantepec and Tlatempa but continuing through Tezoquipan.

Typological Parameters. Low attribute density and low coherence.

Manufacture and Design. Roughly shaped figures in tan to gray paste, sometimes with an orange tinge.

Description: Some are more baby-like in body proportion than others. They are generally crude—sometimes extremely crude—and are difficult to fit into any clearly defined type. Two possible babies or children are typed and therefore are not included in this residual grouping: figures 10.3e and 10.9f, Amomoloc variety and Small Cuatlapanga, respectively. Like the matrons described above, coherence in this grouping is iconographic rather than stylistic. Facial features including eyes, nose, and mouths are crudely depicted in a variety of manners. There is no indication of sexual attributes. Most figures have short legs and appear to be standing. One has no legs at all, and one is seated.

Regional Tradition. Unidentified. Some overlap with García Cook and Merino Carrión's Tzompantepec 1 (1988:Lámina 1h).

Residual 8, Glossy-White-Slipped Figurines (ResGlossWhite)

Limb fragments of large, probably hollow figurines slipped a glossy white, sometimes with the addition of red (Figure 10.19). Tzompantepec and Tlatempa phases, from Amomoloc and Tetel. The glossiness of the white distinguishes this slip from that of Tezoquipan–Tenexac figurines from La Laguna, described below under "Typological Deviate 24," "Typological Deviate 25," and "Residual 13." Some or all of these could be from figurines like Typological Deviate 8, described above. N = 4.

ZOOMORPHIC FIGURINES

Animal figures appear throughout the sequence with few evident changes. Based on proveniences rather than style, they are divided here into an earlier set from Amomoloc

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Figure 10.19. Residual 8, glossy white-slipped figurines. Identifications: left: 03-347[A46-2S]; middle: 03-348[A63-2S]; right: 01-477.

and Tetel and a later set from Mesitas and Laguna. The early set is more diverse in subject matter, perhaps simply because it is larger. In both cases, zoomorphic figures divide into those of an appropriate scale to appear alongside the common anthropomorphic figurines of the era—perhaps in a scene such as those envisioned by Marcus (1998, 2009)—and those conceived at a larger scale. One notable pattern is that zoomorphic figurines do not exhibit as strong stylistic patterning (synergistic cooperation among multiple attributes) as do the anthropomorphic figurines.

Zoomorphic Figurines and Effigies, Tzompantepec and Tlatempa Phases

Zoomorphic Figurines (or Effigies Broken Off Vessels) of a Scale Larger Than the Anthropomorphic Figurines (Animal2). N = 11: four birds, two dogs, one probable turtle, four unidentified animals (figures 10.20e, 10.20g, 10.20k). Surface treatments more similar to Tzompantepec–Tlatempa pottery than to contemporary anthropomorphic figurines. Most were hollow. Some were slipped red, white, or black. It is noteworthy that only 11 percent seem to depict dogs (compare with the next category).

Zoomorphic Figurines of the Same Scale as Anthropomorphic Figurines (Animal1). N = 22: 13 dogs, one probable turkey, two other birds, six unidentified animals (figures 10.15, 10.20a, 10.20c–d, 10.20f, 10.20h). All are solid and most are of a paste similar to Cuatlapanga. The surface finish is similar to that of the human figurines for these phases. There is every reason to believe that these animals were manufactured for use alongside the human figurines, but there appear to be no systematic stylistic differences among the animals of the sort observable between the different types of human figurines. Fragmentation and the different body configurations of animals in comparison to people complicate any attempt to estimate numbers of animal images in relation to human images. A straightforward comparison of body and head fragments to body and head fragments would suggest one animal figurine for every 15 anthropomorphic figures during the Tzompantepec and Tlatempa phases. It is noteworthy that at least 59 percent of such animals were dogs. It would appear that the domestic dog was the animal most likely to figure in social occasions depicted in figurine "scenes." In contexts of larger-scale zoomorphic imagery, dogs were distinctly less important as signs.

Zoomorphic Figurines, Texoloc and Tezoquipan Phases

Zoomorphic Figurines (or Effigies Broken Off Vessels) of a Scale Larger Than Typical Anthropomorphic Figurines (Animal2). N = 5: all unidentified animals (Figure 10.20i-j). Surface treatments more similar to contemporary pottery than to anthropomorphic figurines. All were hollow. Some were slipped red or black.

Zoomorphic Figures of the Same Scale as Anthropomorphic Figurines (Animal1). N = 12: 10 dogs, one bird, one unidentified animal (Figure 10.20b). All are solid. Paste and surface finish match that of contemporary figurines, either Ehco or Laguna. In general, patterns among Tzompantepec–Tlatempa zoomorphic figurines seem to continue. Dogs are even more common than they were earlier (83

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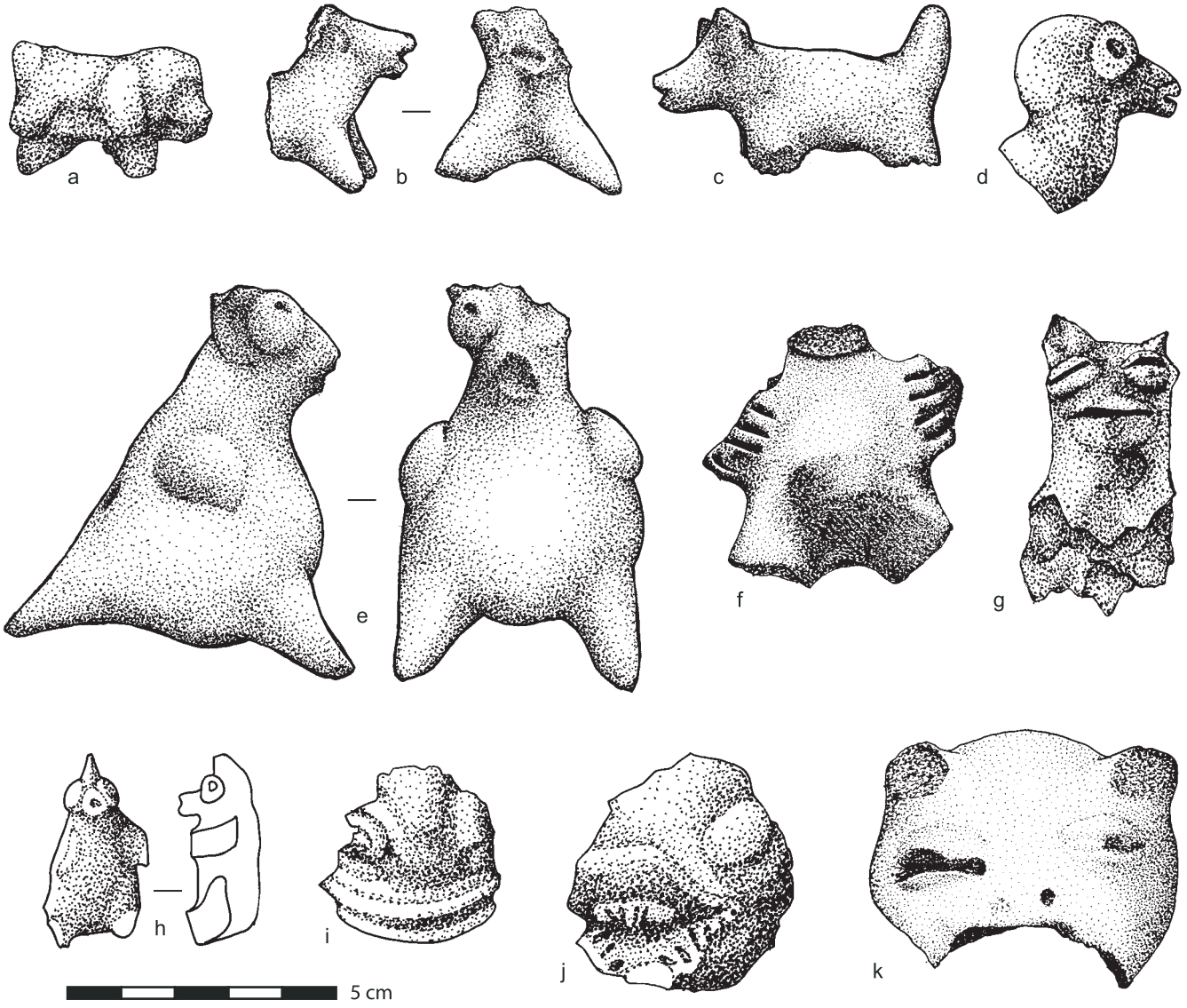

Figure 10.20. Zoomorphic figurines: (a–c) dogs; (d–f) birds; (g–h) unidentified mammals; (i–j) unidentified animals; (k) probably a dog. All are solid except e and i–k; all are smoothed and unslipped except i (slipped black), j (slipped red), and k (slipped white). Identifications: a: 03-145[A54-2S]; b: 03-012[A32-33]; c: 03-040[A46-2S]; d: 03-150[A54-2S]; e: 03-049[A47-1S]; f: 03-151[A46-2S]; g: 04-205; h: 03-148[A54-2S]; i: 04-173; j: 04-174[B55-1S]; k: 03-154[A54-2S]. Drawings by Amy Carroll (a, d, h–j), Jeremy Bloom (b–c, e), Sascha Munson (g), and Jennifer Salazar (f, k).

percent here as opposed to 59 percent). The frequency of animals in relation to humans is broadly similar, though perhaps somewhat lower (one animal for every 19 human figurines).

EHCO TYPE AND RELATED DEVIATES

The Ehco type is, after Cuatlapanga, the second most prominent in the collection. It is characteristic of the Texoloc phase and continues into Early Tezoquipan. Varieties and related groupings are more complex and numerous than with Cuatlapanga, and several head variants are described within the Ehco type description.

The Ehco Type and Its Head Varieties (Ehco; See Also Head Variety Codes)

Distinctive aspects of this type include light-colored, temperless paste and the diminutive size of the figures. There is significant stylistic diversity among the heads, but torsos associated with those heads are not readily distinguishable. For this reason, I use the concept of variety more nar-

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rowly here than in other cases, identifying "head varieties." Since the heads cannot be reliably associated with distinctive bodies, I discuss the bodies together, even those still attached to heads. I also subsume description of the head varieties into this single type description.

Sample. N = 103: 22 torsos with heads, 27 heads, 54 torso fragments.

Illustrations. Figures 10.21, 10.22a–m, 10.23g, and 10.24a–c.

Sites. Tetel, Las Mesitas, La Laguna, plus a couple of fragments from Amomoloc.

Phases. Texoloc and Tezoquipan, perhaps appearing also in small numbers at the very end of Tlatempa.

Typological Parameters. Density of attributes is moderate in relation to Cuatlapanga or Coaxomulco, with reductions particularly among headdress and torso attributes. Coherence in paste, size, and body form tends toward redundancy. There is nevertheless striking variation among the faces. Varieties can be further organized into a tree-like stylistic series, as will be shown below in the chronological analysis. Varieties falling later in the developmental series seem less coherent than those earlier in the series. The Ehco type is second only to Cuatlapanga in terms of frequency in the collection (19 percent of the anthropomorphic figurines). It was the predominant type during the Texoloc phase.

Manufacture and Design. The prototypical paste of the type departs radically from pastes typical of the preceding Tlatempa phase. Ehco pastes are soft, with few inclusions and no temper. They are generally of a cream color (10YR 8/2, 8/3, 8/4), sometimes fired to a light gray (10YR 6/1) and occasionally ranging to a light brown (10YR 7/2). In both color and texture this paste is completely different from that used contemporaneously to produce pottery. Often paste color at the surface continues throughout the matrix of the figurine, though some have light gray cores.

Ehco figurines are small, 3 to 8 cm in height (Figure 10.21). Some of the varieties discussed below appear to have fallen exclusively at the lower end or the upper end of this range. Among Ehco figurines there is less reliance on appliqué for the buildup of features than in Cuatlapanga or Coaxomulco, but applications were still used for headdresses, earspools, and a few other attributes. Figurines are generally two-dimensional and flattened in the back, but not to the extent common in Cuatlapanga.

Head Varieties.

Ehco I: Heads are squarish or oval and small, 2 to 2.5 cm in both height and width (Figure 10.21a–g). Eyes were formed with a single, slit-shaped impression, generally horizontal and probably made with a fingernail (100 percent). The prognathic lower face was made by pinching out clay from the face or by smoothing in an appliqué. The nose and mouth were formed with a single horizontal impression that simultaneously created the end of the nose and the impression of a mouth (93 percent). The earspool is a flattened, round appliqué with a single impression, perhaps of a fingernail. In one case there are two impressions on the earspool, a trait common in later varieties. Headdresses involving face frames—an upside-down U running from one earspool up across the forehead and down to the other earspool—are common (Figure 10.21e). The trefoil headdress described by Vaillant (1931:253–254) also appears (Figure 10.21d), sometimes in combination with a face frame. Other headdress styles were also formed by various appliqués, with or without face frames. None were as elaborate as headdresses in the Cuatlapanga type. These figurines were on the small side of the height range for Ehco, 3 to 6 cm. Sites: Tetel, Laguna, Mesitas, and Amomoloc (n = 17).

Ehco II: Eyes, mouth/nose, earspools, and the general shape of the face are identical to Ehco I (Figure 10.21h–j). The primary difference is that the heads are distinctly larger (2.5 to 3.5 cm in height and width), a trait that continues in the rest of the Ehco head varieties. Most were probably in the upper part of the full-figure height range for Ehco, 5 to 8 cm. Headdresses are in bad shape but appear similar to Ehco I, with face frames perhaps more prevalent. Sites: Mesitas and Laguna (n = 12).

Palmas: Crudely made heads with an abundance of deep, rough jabs or gouges (figures 10.22m, 10.24b–c). A particularly unusual feature is the use of multiple, rough gouges in the headdress. Heads are similar in size to Ehco II. Eyes are varied, ranging from a round gouge to the slit-shaped impression familiar from Ehco I/II. In one case the slit-shaped impression was perforated in the center to indicate a pupil. A nose/mouth combination is formed in the same way as for Ehco I. Earspools are round appliqués with one or two gouges. Site: Laguna (n = 6).

Mesas: Heads that (to contemporary Western eyes) look like a more naturalistic, refined version of Ehco II (Figure 10.21k–l). They are similar in size to those of Ehco II. The headdresses are also similar, with face frames common. Eyes and earspools fit easily into the tradition of Ehco I/II. The refinement appears in the separately modeled nose and mouth, the first formed by a smoothed-in appliqué and the second by a careful fingernail gouge directly into the clay of the lower face. The chin and jawline are well defined in the small sample available, adding to a naturalistic appearance. Although the sample size is small, this variety is a crucial link in the stylistic series from Ehco I/II to the Atlixtaca variety and the Huehuetitla type, described below. Site: Mesitas and Laguna (n = 3).

Atlixtaca: Heads that bear considerable resemblance to the Mesas variety but with additional details that move them further from prototypical patterns for the Ehco type (Figure 10.22n). The most characteristic feature is that the slits for the eyes are extremely narrow, curving downward at the ends. They may still be formed with a fingernail, but the effect is quite different than for varieties described above. Other characteristics include greater three-dimensionality in the face, and pastes that, while still light in color, are somewhat coarser than is typical for Ehco I/II or

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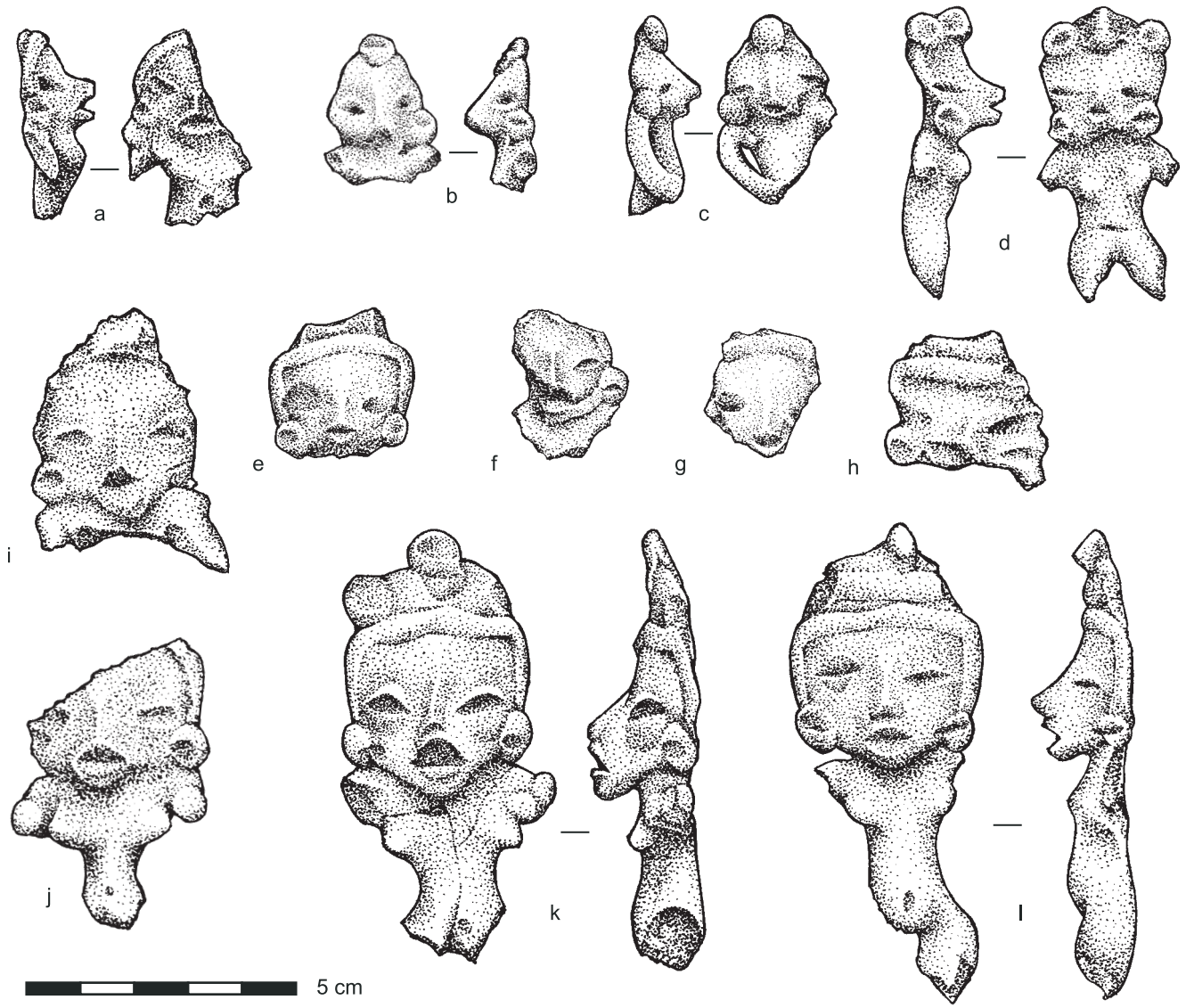

Figure 10.21. Ehco type: (a–g) Ehco I head variety; (h–j) Ehco II head variety; (k–l) Mesas head variety. Identifications: a: 01-093; b: 01-098; c: 01-099[A11-2S]; d: 01-092; e: 01-095[A15-1S]; f: 01-094[A11-2S]; g: 01-081[A15-1S]; h: 03-005[A32-33]; i: 03-006[A32-33]; j: 03-007[A32-33]; k: 03-001[A32-33]; l: 03-002[A45-2S]. Drawings by Jeremy Bloom.

Mesas. The nose and mouth are separately formed, as in the Mesas variety. In two cases what seems to be an in ear ornament is a linear fillet with multiple gouges (Figure 10.22n). Site: Laguna (n = 5).

Ehco Deviate 17 (TD17): A single figurine with eyes that differ sharply from others in the type but that otherwise falls in easily with Ehco I. The eyes are formed with two angular impressions, the second superimposed on the first to form the impression of a pupil (n = 1).

Ehco Residual 9: Head fragments that cannot be definitively classified as to variety. Probably Ehco II or Mesas, judging by size and paste (n = 4).

Torso Attributes.

Torso/Gender: Torsos are diminutive and schematic. Navels, when present, are formed by a single rough fingernail impression. Of the 28 complete torsos, 14 percent are sexless, with no elaboration of chest or pubic area. Pubic appliqués appear on 30 percent. These are of two sorts: a single lentil-shaped appliqué toward the crotch (figures 10.22g, 10.22i) or an oval appliqué oriented horizontally on the lower stomach with a smaller round appliqué immediately below (Figure 10.22h). I see iconographic continuity here with the Cuatlapanga type; I thus regard these as depictions of loincloths or (less likely here) male genitals. Either way, I interpret these as stereotyped male sex attributes. Modeling on the chest appears in 68 percent

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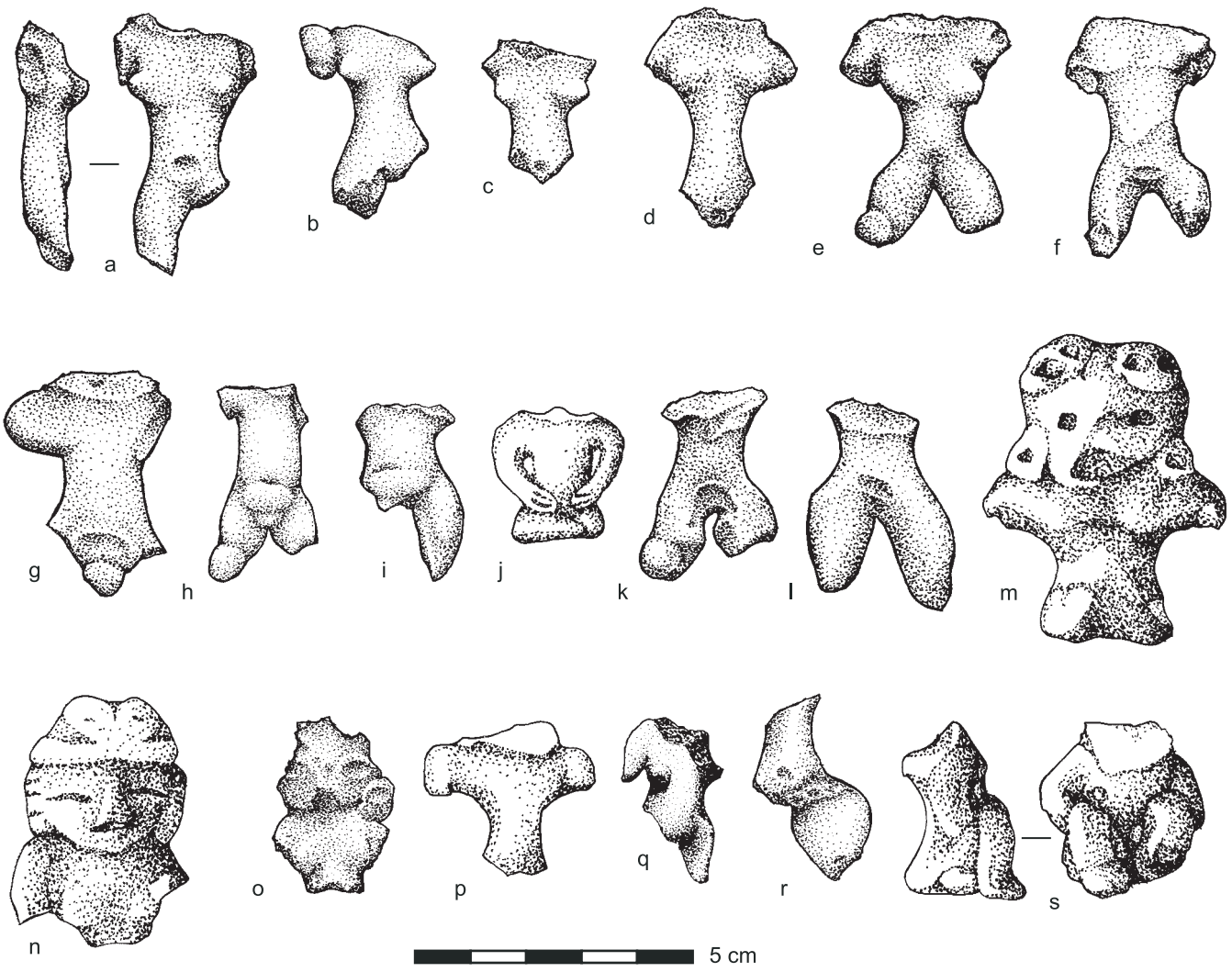

Figure 10.22. Ehco type and some of its varieties: (a–l) Ehco torsos; (m) Palmas variety; (n) Atlixtaca variety; (o–s) Laguna grouping. Identifications: a: 01-097[A15-1S]; b: 01-084[A10-1S]; c: 01-083[A15-1S]; d: 01-080[A15-1S]; e: 01-077[A10-1S]; f: 03-008[A42-2S]; g: 01-087[A11-2S]; h: 01-089[A10-1S]; i: 01-090[A11-2S]; j: 04-030[B16-2S]; k: 01-088[A10-1S]; l: 01-085[A10-1S]; m: 04-040[B55-1S]; n: 04-088; o: 01-100[A11-2S]; p: 04-061; q: 04-050[B46]; r: 01-106; s: 04-075. Drawings by Jeremy Bloom (a–i, k–l, o, r), Amy Carroll (j, m–n, p, s), and Jennifer Salazar (q).

of the complete torsos. It consists of small, smoothed-in appliqués suggesting breasts. Because these are smoothed in, there is the potential here for gradations of breast size that might depict females of different ages (e.g., Di Capua 1994, Rice 1981). Of the complete torsos, four have "weakly defined" breasts (Figure 10.22f), eight have "moderate" breasts (figures 10.21a, 10.21d, 10.21l), and six have "prominent" breasts (Figure 10.22a–e). It would be possible to see among these figurines females of different ages. My impression of the collection, however, is that the breasts were quickly and roughly formed. I do not see indication of any care taken to distinguish breasts of different sizes, and no other attributes seem to correlate with breast prominence. My tentative interpretation is that there is continuity from Cuatlapanga standards and that all figurines with a suggestion of breasts can be regarded as female.

Posture: Standing (92 percent) or seated (8 percent). Seated figures were generally cross-legged.

Clothing: Loincloths may be depicted on the figures interpreted as male.

Arms: Short arms extending out to the sides of the body are common. They very often have high shoulders that give the figure a hunched appearance (figures 10.21a, 10.21i).

Legs: Simple and schematic, rarely with any hint of foot or sandal. Sometimes the thighs are bulbous with a tapering, conical lower leg. In other cases, this bulbousness is less pronounced. Different leg forms do not appear to be

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systematically correlated with other attributes.

Plastic Ornamentation Other Than Ear Ornaments: 10 figures have a lentil-shaped appliqué on one or both shoulders (Figure 10.21j–k). Of those, five have moderate or prominent female breasts and two have weak breasts. Nose ornaments are not present. One figure has a fingernail impression in the upper chest that suggests a pendant.

Regional Tradition. E2, described by Vaillant (1931:Plate 56) and Reyna Robles (1971:130–131), although neither author dwells on the paste, one of the most distinctive attributes of Ehco. Still, the form of the nose/mouth exhibited by Ehco I and II varieties matches those described by Vaillant and Reyna Robles as particularly characteristic of the type. The other head varieties assigned to Ehco find no clear match in Vaillant or Reyna Robles. They may represent local stylistic innovation (see Figure 10.27 and the associated discussion, below).

Ehco-Type Whistles (EhcWhistle)

Hollow-headed anthropomorphic figures in Ehco paste that were probably whistles (Figure 10.23g). We had at first identified one of these pieces (08-289) as an image of the Old God of Fire, but comparison with a more complete piece (04-127) and a third fragment recovered more recently by Carballo (and not reported in this volume) provide the basis for identification of these pieces as whistles. Texoloc and Tezoquipan phases. N = 2.

Laguna Grouping, Variant of the Ehco Type (Laguna)

This grouping includes figurines clearly related to Ehco in size, surface treatment, and other stylistic details. They nevertheless deviate significantly from the fine-grained, cream-colored paste of Ehco. The low ratio of heads to bodies is a puzzle. It is best to treat this as a provisional "grouping" rather than a type or variety.

Sample. N = 32: one torso with head, four heads, 27 torsos.

Illustrations. Figures 10.22o–s, 10.24e–i.

Sites. Laguna, Tetel, and Mesitas.

Phases. Texoloc and Tezoquipan.

Manufacture and Design. The paste of these figurines more nearly resembles Texoloc and Tezoquipan ceramics than does the fine, cream-colored paste of Ehco. Pastes in the Laguna grouping vary, but they are coarser than Ehco with colors shifted to light brown or reddish (7.5YR 6/4, 7.5YR 7/2, 7.5YR 8/4). Surfaces are well smoothed but not polished. Gray cores seem more common than in Ehco. Torsos are similar in size and construction to those of Ehco, though see below for iconographic differences.

Attributes.

Heads: The scarcity of heads is puzzling and creates suspicion about the integrity of the grouping. The facial features match those of Ehco II. Eyes are formed with the same fingernail impressions. The lower face is pinched out, and the nose and mouth are created by a single horizontal impression. Ear ornaments consist of an appliqué with a variable number of impressions.

Torso/Gender: Torsos stray from the conventions of the Ehco type. Sex attributes are often omitted (47 percent; figures 10.22p, 10.24h). When present, they are varied in expression. Several bodies have moderate or weakly defined breasts (figures 10.22o, 10.24f–g). Others have small, round appliqués for breasts; one of these has a very fat belly, suggesting pregnancy (Figure 10.22q). One lower torso fragment may have a depiction of female genitals (a pubic triangle defined by impressions with a deeper, central incision), a rare trait in the Apizaco collection (Figure 10.24g). Two figures have relatively large, roughly formed oval tabs on the lower abdomen, probably adhering to the conventions I have interpreted as loincloths or male genitals in Ehco and Cuatlapanga (Figure 10.24i). One seated figure has a distinct humpback (Figure 10.22s).

Posture: Standing (88 percent) or seated (12 percent).

Clothing: One lower torso with a thin waist and bulbous thighs bears the remains of a fillet apparently depicting a bikini-like garment (Figure 10.22r).

Arms: The arms of standing figures extend to the sides of the body. Seated figures have arms on the knees or chest.

Hair/Headdresses: Appear to follow Ehco I/II norms.

Other Plastic Ornamentation: One figure has an appliqué at the tip of the leg. Otherwise there is no ornamentation besides headdresses and earspools.

Regional Tradition. Probably, like Ehco, related to Vaillant's E2.

Gazca Grouping, Variant of the Ehco and/or Huehuetitla Types (Gazca)

Sample. N = 10: seven torsos with heads, three heads.

Illustration. Figure 10.23a–f.

Sites. Laguna and Tetel.

Phases. Texoloc and Tezoquipan.

Manufacture and Design. Small figurines in the typical Ehco size range or smaller (2 to 8 cm in height). Most are in the light-colored Ehco paste, but paste in some cases ranges to that of the Laguna grouping. Some are also lightly burnished, a trait characteristic of the Huehuetitla type (see below).

Description. Diagnostic attributes for this grouping are head and eye forms. Heads on smaller figures are tiny and are either round or conical (Figure 10.23c–e). On larger figures, heads are crested and flattened from the sides (figures 10.23a, 10.23f). The larger figures usually have zoomorphic snouts rather than anthropomorphic mouths. Eyes are formed by either a round punch (without appliqué) or a round appliqué with a single punch or a slit-shaped impression for the pupil. Eyes on the crested figures are usually on the sides of the head and (along with the mouth area resembling a snout) give the figures an animal

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rather than a human appearance.

The figures are mainly unsexed, with neither breasts nor pubic elaboration. However, one piece in the collection reported here has two pubic appliqués that appear to depict a loincloth (Figure 10.23a). A piece found by Carballo and not part of the collection described in this volume has prominent female breasts.

Although the sample size is small, there is an unusually large range in subject matter in Gazca compared to other groupings. The only two-headed figurines we recovered are of this type. Some pieces have stomachs bulging to various degrees. A higher-than-usual percentage of pieces are seated. Arms are often in dynamic positions: they hold a ball or other object, or they rest on a stomach or head (Figure 10.23b–c). On the other hand, most of these figurines have no ear ornaments, and headdresses are minimal or absent altogether.

Regional Tradition. Several traits—including both head forms, the high frequency of sexless figures, and the variety of poses—link Gazca to Vaillant's Type G (Reyna Robles 1971:Lámina 114; Vaillant 1931:255–258, plates 57, 58). The crested figures with punched appliqué eyes correspond with Vaillant's G2, which he took to be animal-headed figures. Reyna Robles (1971:132) suggested that G2 might be an iconographic category that crosscut types rather than a distinct stylistic type in its own right. Early in the analysis of the present collection, I agreed with Reyna Robles. Based on analogy between the eye forms of the crested figures and those of the masked Cuatlapanga figurines, I considered the G2-related figures to be iconographic variants of Ehco and Huehuetitla, probably depicting masked individuals. Having examined Vaillant's Ticomán collection, and now with a somewhat larger sample from Tlaxcala available, I now consider this head form to be yet another stylistic variant. The great variety of subject matter—including probable female, male, and sexless figures; two-headed figures; and figures holding babies—raises skepticism about the eye and face form as depicting a particular subject or even simply a masked face.

Vaillant's collection of G figures from Ticomán at the American Museum of Natural History includes a variety of eye forms beyond those included in Gazca. Particularly noteworthy is an eye depicted with two parallel incisions that are perhaps meant to indicate an eye and an eyebrow. I have labeled a few perhaps similar pieces in the Tlaxcala collection as typological deviates (see below under "Typological Deviate 23").

HUEHUETITLA AND HUILOAC TYPES

The burnished figurines particularly characteristic of Early Tezoquipan occur in a gradation of sizes. Here they are divided into two types (Huehuetitla and Huiloac). The Huiloac type is further divided into a smaller and larger variety. There is only a trace of miniature Huehuetitla figurines in the collection described here; Carballo has considerably enhanced the available sample in his more recent excavations.

Huehuetitla Type (Hue)

Burnished figurines stylistically related to Ehco.

Sample. N = 39: four torsos with heads, 16 heads, 19 torsos.

Illustrations. Figures 10.23m–t and 10.24k–o.

Sites. Laguna and Tetel.

Phases. Texoloc and Tezoquipan; most common in the latter phase. Huehuetitla figurines in Tenexac deposits are probably carry-ups.

Typological Parameters. Probably second only to Ehco in frequency during the Texoloc phase. The density of attributes was similar to Ehco. Coherence, however, was lower. There is variation particularly in eye form, but also in paste and other attributes.

Manufacture and Design. Pastes are similar to Laguna or Ehco, but the surface is burnished. The result is a brown (7.5YR 6/4, 7/4, 7/6, or 6/2), sometimes ranging to very light in color (10YR 8/4, 8/3). Aside from burnishing, the basic features of manufacture and design fall within patterns of the Ehco type. Total heights were mostly in the range 3 to 7 cm, though at least one figure was clearly taller. Heads range from 2.5 to 3.5 cm in both height and width, following a tradition traceable to Ehco II.

Attributes.

Eyes: a distinctive attribute of Huehuetitla is the proliferation of eye forms. Beyond the five pieces with eyes similar to Ehco standards (Figures 10.23o, 10.23q, and 10.24k–m), there are five heads, each with a distinct pattern produced by a combination of incisions and impressions (Figure 10.23m–n, 10.23p). Indication of a pupil is common, in contrast to Ehco, where it is rare.

Nose/Mouth: One piece, and probably a second, has a pinched-out lower face, nose, and mouth differentiated with a single impression, characteristic of Ehco I and II (Figure 10.24k). It is useful to take note of this piece since I rely on it in constructing Figure 10.27. Others have differentiated noses and mouths comparable to those of the Mesas head variety. (In some chronological analyses, I separate these under the provisional label Huehuetitla II). Noses are smoothed-in appliqués, and mouths are formed with a single impression into the projecting lower face (82 percent).

Ear/Ear Ornament: A small tab of clay punched in the center (50 percent) or else with two (25 percent) or more (25 percent) impressions.

Torso/Gender: Similar in conception to patterns in Ehco, but, as in the Laguna grouping, attributes of sex are less conventionalized and correspondingly more difficult to read. Moderate, smoothed-in breasts appear on 31 percent of the torsos (figures 10.23r, 10.23t, 10.24o). In 38 percent, breasts are weakly defined (Figure 10.24n). In other cases, breasts are absent or the chest area is ob-

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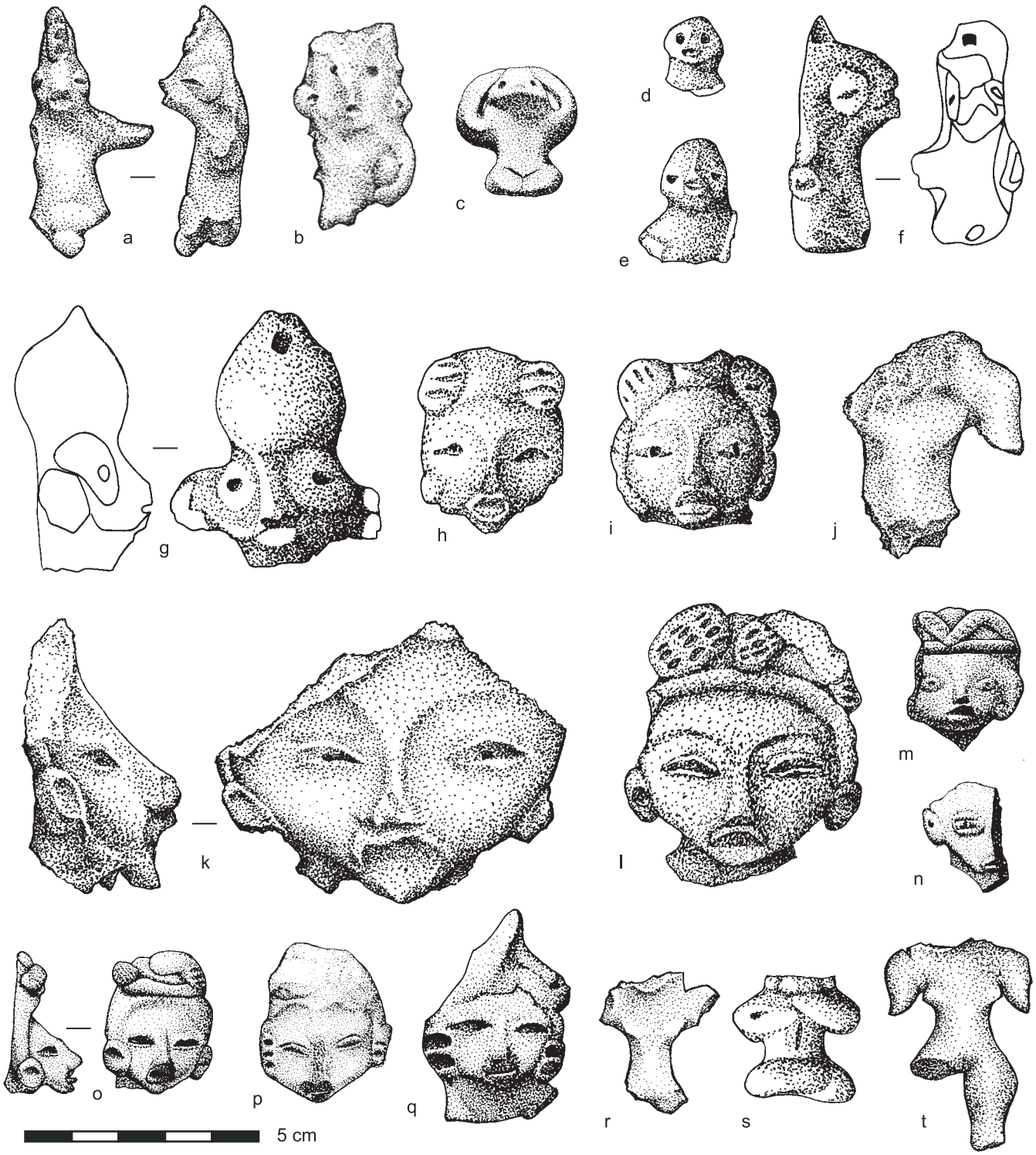

Figure 10.23. Various Texoloc–Tezoquipan figurine groupings: (a–f) Gazca grouping; (g) Ehco Whistle; (h–j) Small Huiloac; (k–l) Large Huiloac; (m–t) Huehuetitla type. Identifications: a: 01-091[A11-2S]; b: 01-126[A11-2S]; c: 04-048; d: 04-046[B50-3S]; e: 04-047[B55-1S]; f: 04-049; g: 04-127[B55-1S]; h: 04-084[A112-1S]; i: 04-083; j: 01-076; k: 01-102[A11-2S]; l: 04-118[B13-2S]; m: 04-109[B50-3S]; n: 04-111[B42]; o: 04-107; p: 04-110; q: 04-105; r: 01-079 [A10-1S]; s: 04-098[B46-2B]; t: 01-078[A10-1S]. Drawings by Jeremy Bloom (a–b, j–k, r, t), Amy Carroll (d–i, l, s), and Jennifer Salazar (c, m–q).

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scured by the arms (Figure 10.23s). Another unusual feature—though again this links with Laguna—is what appear to be female genitals on two figurines. One has a vertical incision in the pubic region while the second has two incisions forming a T-shaped pattern. Another figurine, with weak breasts, has the pubic appliqué familiar from Ehco and Cuatlapanga (Figure 10.24n), interpreted in those cases as a loincloth or male genitals.

Posture: Standing (79 percent) or seated (21 percent).

Clothing: None.

Arms: One seated figure has arms resting on the chest. Another has arms on the stomach. All others have arms to the sides, either extending straight out or angled down. The hunched shoulders of Ehco are common (Figure 10.23t).

Hair/Headdress: Headdresses vary. They generally involve a few simple fillets or round tabs, often decorated with multiple shallow impressions.

Other Plastic Ornamentation: One figure had a lentil-shaped appliqué on at least one shoulder.

Regional Tradition. Burnishing is common in various Late Formative types from the Basin of Mexico, including G, I, L, H1, and H3 (Vaillant 1931:255–262, 355–360; see also Reyna Robles 1971:137). Still, Huehuetitla figurines generally have stronger links to Ehco than to anything described by Vaillant. This type was probably contemporaneous with the Ticomán 2 types G, I, and L. The lack of a clear match for Huehuetitla in the Hay–Vaillant typology, together with strong ties to the Ehco type, suggests that Huehuetitla arose as a result of predominantly local stylistic innovations. A qualifier (*predominantly*) is necessary because the direction of change (toward burnishing) fits in with much wider patterns in the second half of the first millennium B.C. In addition, the area in which a stylistic transition akin to Ehco-to-Huehuetitla (E–H) occurred may have extended well beyond central Tlaxcala. Reyna Robles (1971:Lámina 115) illustrates E–H variants from Puebla that resemble Huehuetitla figurines. García Cook and Merino Carrión (1988:Lámina 9l) illustrate a figure that appears similar to Huehuetitla that they label E–H (see also Trejo 1997:Lámina 2-1). Indeed, the name Huehuetitla has been selected here as mnemonic due to its repetition of *h* and *e*.

Small Variety of the Huiloac Type (Hui Sm)

Burnished figurines somewhat larger than Huehuetitla, generally 6 to 8 cm as opposed to 3 to 7 for Huehuetitla.

Sample. N = 7: three torsos, two heads, and two head and torso fragments.

Illustrations. Figure 10.23h–j.

Sites. Laguna and Tetel.

Phases. Texoloc.

Manufacture and Design. Figures with pastes and colors very similar to Huehuetitla (surface color brown; 7.5YR 7/4) or Ehco, usually with slightly burnished surfaces. Distinguishable from Huehuetitla primarily by size. Heads 3.0 to 3.6 cm in both height and width. Full figures generally in the range of 6 to 8 cm tall.

Attributes. This type will be refined further in consideration of Carballo's full collection excavated from 2005 through 2010.

Regional Tradition. Like Huehuetitla, this type is generically related to the burnished types G, I, and L of the Basin of Mexico.

Large Variety of the Huiloac Type (Hui Lg)

Burnished figurines larger in size than Huehuetitla but stylistically related.

Sample. N = 17: Six torsos, two heads, and nine small head fragments tentatively assigned to the type.

Illustrations. Figures 10.23k–l and10.24j.

Sites. Laguna and Tetel.

Phases. Texoloc.

Manufacture and Design. Burnished figures with pastes and colors very similar to Huehuetitla (surface color brown; 7.5YR 7/4). Distinguishable from that type and from small Huiloac primarily by size. Heads 4 to 8 cm in both height and width. Full figures may have been in the range of 13 to 20 cm tall.

Attributes. The head is broad and somewhat egg shaped, with the face a flat plane at a distinct angle to the vertical. Ridges above the eyes, descending to join the nose, give the impression of eyebrows. A few large, polished bodies seem to relate to the same type as the heads, but the sample is not sufficient to characterize the torsos.

Regional Tradition. A figurine head from Ticomán (AMNH 30.0.7777, illustrated in Vaillant 1931:Plate 55:bottom, 2) is remarkably similar to one from Laguna (Figure 10.23l). The paste color, the shape and size of the head, the eye and nose form, and the headdress favoring appliqués with multiple shallow impressions are all strongly similar. The Ticomán example had a less angled facial plane and some differences in the form of the mouth and earspools, but if the two pieces had been found at the same site, they would be assigned to the same type without hesitation. Vaillant classifies the Ticomán figure as E3. He describes burnishing as rare for E3 and implies (wrongly) in his caption to Plate 55 that 7777 is not burnished. The correspondence between the pair of Huiloac heads and other illustrated examples of E3 is much less striking, and I am reluctant to identify them as a local expression of a type that, in Reyna Robles's (1971:131) assessment, does not exist. More likely is that Huiloac is a local development out of the Ehco tradition, influenced by regional stylistic developments of the Ticomán tradition and generically similar to Vaillant's Type L. The large variety of Huiloac has the same size relation to Huehuetitla that Type L has to Type G at Ticomán. Paste color and burnishing is also similar between Large Huiloac and L. Eye forms are nevertheless

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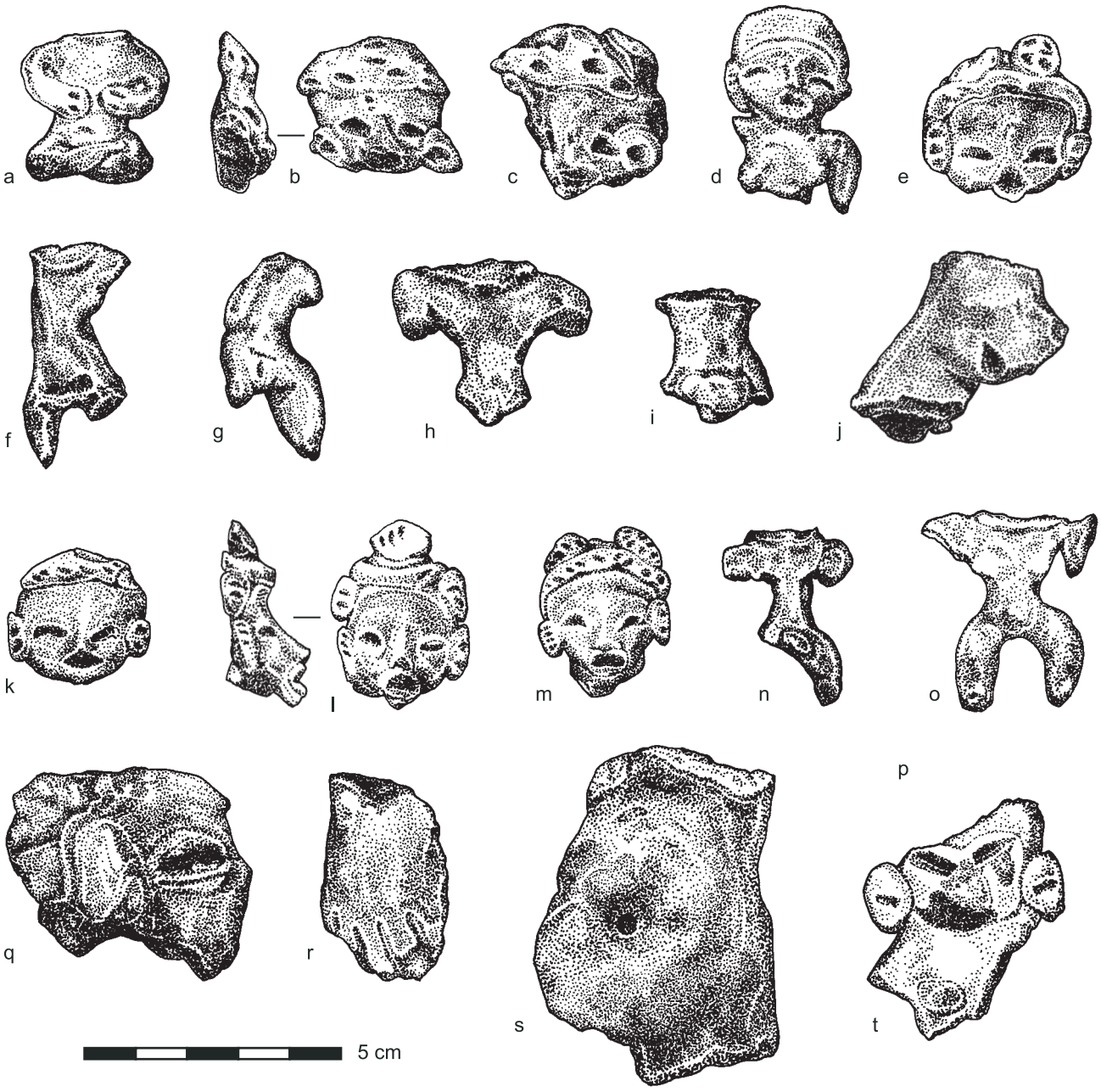

Figure 10.24. Various Tezoquipan (a–s) and Tenexac (t) figurines: (a) Ehco type; (b–c) Palmas variety of Ehco; (e–i) Laguna grouping; (j) Large Huiloac waist fragment; (k–o) Huehuetitla type; (p) Typological Deviate 22; (q–r) Residual 11, large Late Formative figurines; (s) Tenanyecac. Identifications: a: 04-031; b: 04-044[B36-2S]; c: 04-043; d: 04-091; e: 04-079; f: 04-058[Lag-D1, as carry-up]; g: 04-052; h: 04-063; i: 04-053; j: 04-125; k: 04-104[A112-1S]; l: 04-106; m: 04-108[B55-1S]; n: 04-097; o: 04-096[B13-2S]; p: 04-168; q: 04-160; r: 04-157; s: 04-143. Drawings by Laura Baker.

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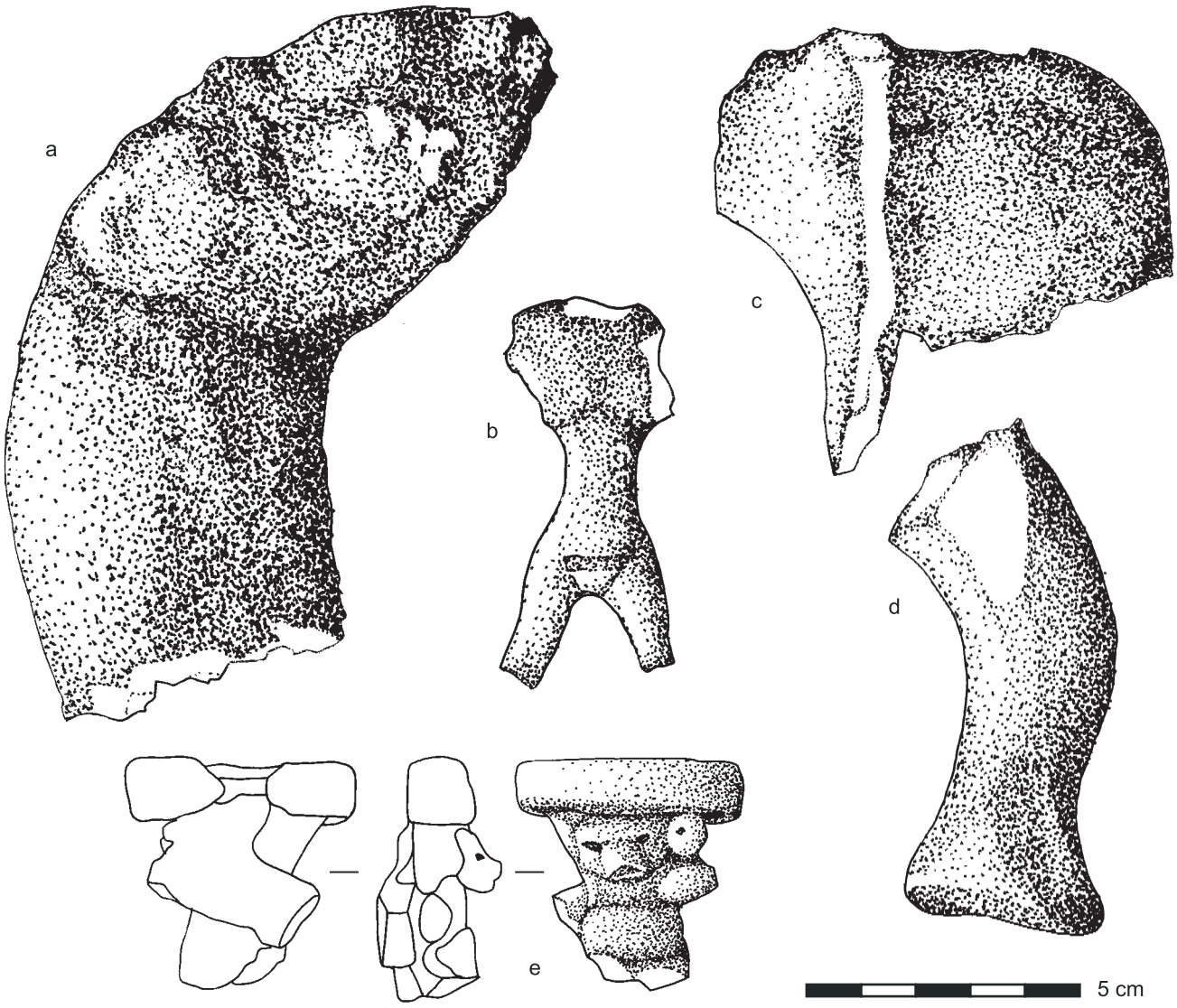

Figure 10.25. Various Tezoquipan (a–c) and Tenexac (d–e) figurines: (a) Residual 11, large Late Formative figurines; (b) Vaillant's Type H2; (c) shoulder fragment of Vaillant's Type H5; (d) Residual 13, white-slipped leg fragment, probably from a seated Old God censer; (e) Teotihuacan 1. Identifications: a: 04-162; b: 04-131[B46]; c: 04-132; d: 04-133; e: 04-145[Lag-D1]. Drawings by Amy Carroll.

quite distinct; Huiloac has a more local eye form compatible with Huehuetitla and derived ultimately from Ehco.

TEXOLOC–TEZOQUIPAN DEVIATES AND RESIDUALS

Typological Deviates 18 through 23

N = 7. (TD17 is described as a head variety of the Ehco type, above.)

Typological Deviate 18. Head with deep impressions across the middle of the small face (08-096).

Typological Deviate 19. Head in a fine brown paste without any other good match in the collection (Figure 10.17i). Surface very smooth but not burnished. Face is broad, with eyes far from the modeled nose. Eye is formed with a single impression into an appliqué, finished with a deep round punch for the pupil. Earspool has a similar deep round punch on a small smoothed-in appliqué (01-101).

Typological Deviate 20. Round face, conceived two-dimensionally and flat at the back, in dark brown to gray paste. Coffee-bean eyes. The forehead is decorated with multiple tiny gouges (08-109).

Typological Deviate 21. Head with a conical nose reminiscent of Cuatlapanga. Eyes and mouth formed with single broad gouges (03-016, Figure 10.17k).

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Typological Deviate 22. Large crude head, slipped red, with eyes near the top of the head and no headdress (04-168, Figure 10.24p).

Typological Deviate 23 (TD23-G?). Possibly related to Type G. Two figurines, slipped black-brown, with eyes formed from two parallel slits, probably one for the eye and the other for the eyebrow. This eye form is one variant in Vaillant's Type G (for example, 30.0.7644 and 7750 from Ticomán). These two pieces from Tlaxcala, however, appear to be slipped rather than (as in Type G) burnished and are darker in color than is typical for G figurines from Ticomán.

Vaillant's H2: Typological Deviate 24 (TD24 TypeH2)

N = 1: a thin standing torso, slipped white (Figure 10.25b). The original figure was probably 8 to 10 cm tall. It has small modeled breasts. A horizontal groove in the lower abdomen defines the upper boundary of a raised pubic triangle. It could depict a girl or a young woman. Although lacking the head, which would cement the identification, the piece appears to be a good match for Vaillant's Type H2 (based on personal observation of the Ticomán collection at the American Museum of Natural History; see also Vaillant 1931:Plate LXI); (04-131).

Vaillant's H5: Typological Deviate 25 (TD25 TypeH5)

N = 1: a shoulder fragment of a large white-slipped figurine, likely related to Vaillant's Type H5 (based on personal observation of the Ticomán collection at the American Museum of Natural History; see also Vaillant 1931:Plate LXV). The original figurine would have been more than 20 cm in height, possibly 30 cm or more (Figure 10.25c).

Residual 10, Hollow Figurines in Ehco Paste (ResHEhc)

Hollow figurines in the characteristic paste of the Ehco type, but much larger than the normal Ehco figures, appear at Laguna and Mesitas. N = 3: torso fragments.

Residual 11, Large Texoloc Figurines Not in Ehco Paste (ResLFLrg)

Fragments of figures in pastes similar to those used in the production of pottery appear in low frequency in Texoloc deposits at Laguna, Tetel, and Mesitas (figures 10.24q–r and 10.25a). In a couple of cases the original figures seem to have been in the range of 15 to 20 cm, but in most cases size is unknown. The sample is too fragmentary to characterize further and does not seem to form a coherent set. N = 5: three head fragments, two torso fragments; there are in addition 15 limb fragments.

Residual 12, Black or Black-Brown Slipped Figures (ResBlack)

Solid and slipped black or black-brown. N = 5: torsos. Any relation to TD23 is uncertain since more than one type and phase may be represented.

Residual 13, Large White-Slipped Figures (Res13 StmGd?)

Two seated legs and another limb fragment of white-slipped figurines (Figure 10.25d). Possibly from Old Fire God effigy censers similar to the large fragment recovered by Carballo (2007:figures 4–5). Probably dating to the second occupation of La Laguna.

Residual 14, Miniature Masks

Two crude masks, about 2 cm wide and 2.5 cm tall. They are vaguely anthropomorphic, with nose and eyes depicted with rough appliqués. Both are pierced for suspension. They are of an appropriate size to have been affixed to figurines. Probably Texoloc phase (04-166, 04-167).

TENEXAC-PHASE FIGURINES

Ehco and Huehuetitla figurines are abundant in Tenexac-phase deposits, but those are likely carry-ups. It appears that the use of figurines had declined dramatically in frequency by the first century A.D. However, two types defined by other investigators make a trace appearance in the collection.

Typeable Deviate 26, Tenanyecac 1 (Tenan1)

Figures with flat bodies reminiscent of gingerbread cookies (Figure 10.24s). N = 2: one head and one head plus torso, both from Laguna. Features are built up by appliqué. The face is a heart-shaped appliqué atop the flat slab of the body. The eyes are deep slot-like impressions that slant downward toward the nose. Earspools and breasts are shaped by appliqués that are not smoothed in. Impressions for the eyes and earspools were formed by a tool that produced a distinctive slot shape. The better-preserved example has red on the headdress and on the body below the breasts. The type was defined for Tlaxcala by García Cook and Merino Carrión (1988:Lámina 18c). It should date to the Tenexac phase, toward the very end of the occupation of the Laguna site (04-143, 04-144).

Typeable Deviate 27, Teotihuacan 1 (Teo1)

An eroded fragment of an elaborately clothed anthropomorphic figure with a snout-like face and single deep punc-

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tures for the eyes (Figure 10.25e). N = 1: a head plus torso from Laguna. The diminutive body is wrapped in elaborate appliqués. The headdress is a wide band. It matches the Teotihuacan 1 type of Noguera (1962:Figure 1) and dates to the Tenexac phase, toward the very end of the occupation of the Laguna site (04-145).

MISCELLANEOUS RESIDUALS

Unclassified Fragments of Figurine Heads or Torsos

N = 38: five heads, 27 torsos, and six head-plus-torso fragments (Figure 10.6e–g). Unidentified pieces are mainly from Amomoloc. Most are torso fragments that diverge in paste or style from Cuatlapanga standards.

CHRONOLOGICAL ANALYSIS

By organizing figurine descriptions in rough chronological order, I have anticipated the conclusions of this section. My goal here is to present the evidence for that ordering. Although I try to show what the figurines themselves can tell us about chronology, the analysis is not conducted in a vacuum. I rely on García Cook and Merino Carrión's (1988) four Formative phases for Tlaxcala (Tzompantepec, Tlatempa, Texoloc, Tezoquipan), with the phase boundaries modified by the work reported here (Lesure et al. 2006 and Chapter 11 of this volume). The gap among our radiocarbon dates between circa 400 and 100 B.C. poses challenges as well. Figurine making in the study area declined sometime during that period. Our collection from the late occupation at La Laguna (100 B.C.–A.D. 150) is small. My focus here is therefore on the period 900 to 400 B.C. Within that span, two cases of links between Apizaco figurines and well-known regional types—Cuatlapanga to C1 and B, and Ehco to E2—also give structure to the chronology.

The discussion is divided into four parts. A crude seriation of figurines by site provides an overview of the sequence. I then turn to the figurines themselves for any relationships between types that might hint at the presence of developmental series. The third step is a seriation of refuse contexts, successful for only the first part of the sequence. Finally, chronological information from ceramics presented in Chapter 11 provides a basis for aggregating contexts and clarifies the differences in figurines between Texoloc and Tezoquipan phases. At the end I summarize diagnostic figurine styles for each phase.

Overview of the Sequence

Radiocarbon dates and pottery analyses indicate that our sites each span only a segment of the period 900 B.C. to A.D. 100. Amomoloc was earliest (Tzompantepec and Tlatempa), followed by Tetel (Tlatempa and Texoloc). La Laguna was latest (Texoloc, Tezoquipan, and Tenexac). The occupation of Las Mesitas (Texoloc) overlapped with the later occupation at Tetel and the earlier part of the La Laguna sequence.

Given these patterns, even a seriation of figurines by site yields insights into chronology. Results are shown in Figure 10.26. Figurine groupings are listed in the column at left using in some cases codes provided after type names in the preceding descriptions. They were seriated by rearranging the rows until occurrences of figurines in each category fell more or less on a diagonal from upper left to lower right. The columns could potentially have required rearrangement as well, but that proved unnecessary, helping substantiate our premises concerning chronological relationships between the sites.

Based on those premises and on Figure 10.26, one can hazard preliminary inferences as to what figurines would be characteristic of each Formative phase, though the markers for Texoloc and Early Tezoquipan are not separated as clearly as one might hope. The first two figurine groupings, present only at Amomoloc, are characteristic of the Tzompantepec phase (absent at the other sites). As it turns out, these groupings grade into earliest Tlatempa—as might be suggested here by the occurrence of a figurine with coffee-bean eyes (and thus stylistically related to the Amomoloc variety) at the Tetel site. Other groupings shared by Amomoloc and Tetel but absent at Mesitas and Laguna—especially Small Cuatlapanga, Large Cuatlapanga, and Coaxomulco—are characteristic of the Tlatempa phase. Groupings shared by Tetel, Mesitas, and/or Laguna are characteristic of Texoloc and Tezoquipan. Those include Ehco and its head varieties as well as Gazca Huehuetitla and Huiloac. The analysis of Figure 10.26 is too crude to differentiate among groupings present only at La Laguna. On stylistic grounds, I have placed the rare sets, Palmas, TD23, Atlixtaca, and EhcTD17, with Texoloc–Tezoquipan. TD24 and TD25, if my proposed links to Vaillant's H2 and H5 are correct, probably date toward the end of the first occupation at La Laguna, while Tenanyecac and Teotihuacan 1 are Tenexac phase markers. At the very bottom of the table are groupings without strong chronological significance.

Identifying Series among the Figurine Groupings

The next step toward a more detailed understanding of figurine chronology is to examine the figurines themselves to see if it is possible to fit types or other groupings into stylistic series. The basic assumption of such analysis is that styles change gradually in a series of modifications. If we could construct a branching tree, with each branch involving a series of losses or additions of traits but generally no reversions to traits previously lost along that branch, we would have a plausible sequence of stylistic changes—a hypothesis for evaluation through contextual seriation.

The most promising case for a stylistic series in the

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Types	Amomoloc	Tetel	Mesitas	Laguna	
Amomoloc	8				Tzompantepec/Early Tlatempa diagnostics (900-750 B.C.)
Matron	4				
ResCrude	8			1	
TD-Type A	1				
ResCfB	5	1			
CuatSm	136	42			Tlatempa diagnostics (800-650 B.C.)
CuatTD + CTradTD	3	1			
CuatLg + CuatTD3	4	2			
Coax(+Cuat)	1	1			
Coax	3	12			
Coax(+E2)	5	6			
Baby	6	4		1	
TD-Type F	1	1			
Ehco I	1	7	1	11	Texoloc diagnostics (650-500 B.C.)
Ehco	1	17	3	31	
Ehco II			4	11	
Mesas			2	1	
Laguna		2		29	
Gazca		2		8	Early Tezoquipan diagnostics and derived forms (550-400 B.C.)
Huehuetitla		4		35	
Huiloac Lg		2		15	
Huiloac Sm			1	6	
TD23-G?				2	
Palmas				6	
Atlixtaca				5	
TD17				1	
TD24-25 Types H2+H5				2	around 400 B.C.?
Teotihuacan 1				1	Tenexac diagnostics
Tenanyecac 1				2	
TD (various)	10	1	1	5	not chronologically significant
Res (various)	31	4	1	18	
Animal(1)	20	2	1	11	
Animal(2)	10	1	1	4	
Total Figurines	258	112	15	206	

Figure 10.26. Seriation of figurine groupings by site.

Apizaco collection appears in the Ehco type and its varieties. An initial tree, based on the assumption of gradual, *local* change in style, is illustrated in Figure 10.27. Starting with the Ehco I head variety, it is possible to arrange most of the other Ehco varieties, plus the Huehuetitla and Huiloac types, along a series of branches, all stemming from Ehco I. There seem to be no serious reversals in traits along the tree, though size fluctuates some and it is necessary to posit an earlier and later Huehuetitla, the second something of a composite of the original Huehuetitla and the Mesas variety of Ehco. (Contextual seriation in the next section will show that the position of Huiloac here is wrong. The assumption of local development, on which this hypothesized series is based, is violated in that case.)

This whole series would have unfolded during Texoloc and Early Tezoquipan (650–400 B.C.). Interestingly, no branching series of this level of detail can be proposed for the preceding Tzompantepec and Tlatempa phases. Cuatlapanga does not appear to emerge from the coffee-bean eye, matron, or crude figures of Tzompantepec. A couple of typeable deviates related to Cuatlapanga (CuatTD1-2)

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might be seen as variations emerging from the type, but others seem generically related rather than derivative (CTradTD4-5). Small and large varieties of Cuatlapanga are virtually identical except for size, and there seems to be no way to argue that one is likely to be earlier than the other based on the objects themselves.

Coaxomulco is at first glance more promising. The type shares many traits with Cuatlapanga. There are also what I am calling composites (combinations of traits from two types) assigned to Coaxomulco. Could those actually be transitional forms? My Coaxomulco/Cuatlapanga composites could be seen as transitional between Cuatlapanga and Coaxomulco, while my Coaxomulco/E2 composites could represent a subsequent transition to Ehco. We would thus posit a local developmental sequence of Cuatlapanga to Coaxomulco to Ehco. Certainly the occurrence of Coaxomulco figurines with E2/Ehco traits *before* the initial appearance of Ehco could be readily accounted for from this perspective. As transitional forms signaling innovations that led to crystallization of Ehco conventions, they might acceptably precede the appearance of Ehco itself.

I am skeptical of that scenario, though it is impossible to decisively reject it using evidence internal to the collection reported here. One relevant observation is that the two figurines with both Cuatlapanga and Coaxomulco traits ("composites" in my view; "transitional forms" in the scenario I am arguing against) include different mixes of traits. They do not represent two steps in a series of changes from Cuatlapanga to Coaxomulco. That observation, though, is not fatal for the transition scenario since these figures might plausibly represent two branches of stylistic change, one of which was abandoned while the other led to Coaxomulco.

A bigger problem with the transition scenario emerges when the scale of our analytical vision is expanded from local to regional. All three of the types in our supposedly local developmental series can be linked to well-defined regional types: Cuatlapanga to C1 and B, Coaxomulco to C10, Ehco to E2. In my view, there is a series here, but it is regional in scale (C1–C10–E2). The three local types do reflect that series, but they are best understood as local appropriations of constellations of stylistic traits already established elsewhere. Thus C1 precedes Cuatlapanga; C10 precedes Coaxomulco; and E2 precedes Ehco. The Coaxomulco pieces really are composites— mixtures of traits from *coexisting* types. It is just that in one case (the Coaxomulco/E2 composites), one of the two types (E2) had not yet been adopted (as Ehco) in the Apizaco region. I will elaborate on this discussion in my diachronic analysis of stylistic change, below.

Seriation of Contexts

The next step is a seriation of the secondary refuse contexts identified in Chapter 8. The complete absence of anything characteristic of Tzompantepec or Tlatempa at Mesitas and Laguna has prompted me to divide the analysis into two parts: an Amomoloc–Tetel seriation emphasizing Tzompantepec and Tlatempa units, and a Tetel–Mesitas–Laguna seriation emphasizing Texoloc and Late Tezoquipan. This division corresponds to other patterns among the analytical units. Materials from our Amomoloc and Tetel features better approximate "secondary refuse" than those from Laguna. Figurines are also more numerous at Amomoloc and Tetel than at the other two sites. Those factors probably contribute to the greater success of the Amomoloc–Tetel seriation.

The first seriation is shown in Figure 10.28. It includes contexts from the Chronological Sample with five or more figurines. The numbers were too small for a meaningful frequency seriation, and the method chosen was the same as that described above for Figure 10.26, only this time both rows and columns were rearranged to place occurrences of figurines as much as possible along a diagonal from upper left to lower right.

The results seem successful. Tzompantepec (F.A46), Tlatempa (F.A23 through F.A73), and Texoloc (F.A15 through F.A11) are clearly distinguishable. In the earliest Tlatempa features (A23 and A47), the expected shift to Cuatlapanga is identifiable, but there is also a hint of continued use of characteristic Tzompantepec forms (coffee-bean eyes, matrons, and crude figures). Coaxomulco appears in later Tlatempa. So, mainly, does Large Cuatlapanga. It is possible that this variety appeared only after a Small Cuatlapanga tradition was well established. Ehco seems to have expanded rapidly in popularity. There is only one context (A15-1S) in which what seems like a rich mixture of later Tlatempa and Texoloc styles is evident.

Violations of the expectation of diagonality are minor. Based on the absence of Small Cuatlapanga figurines at Mesitas and Laguna, I suspect that those appearing (without Coaxomulco or Large Cuatlapanga) in Features A10 and A11 are carry-ups. The only other problems are the coffee-bean eye figures in features A54 and A64 and the crude figure in A64. Both features would be placed earlier were it not for a single Coaxomulco figurine, in each case a secure, well-preserved example. I suspect that the "early" figures in these features are carry-ups, though it is worth bearing in mind that both the coffee-bean eye and crude figures are part of residual groupings with low coherence. It is certainly possible that some extraneous figures have been assigned to those groups.

An inspection of the chart suggests that it might be possible to distinguish more than just the three phases. There would appear to be a later Tlatempa (with Large Cuatlapanga and Coaxomulco) and an earlier Tlatempa (without those late markers and sometimes with coffee-bean eye, matron, or crude figures). The limitations of such a proposal are highlighted when we turn to stratigraphic relationships between the features involved. There are only three cases. At Tetel, Feature A10 cut into Feature A12; the figurine seriation orders those units correctly. At Amo-

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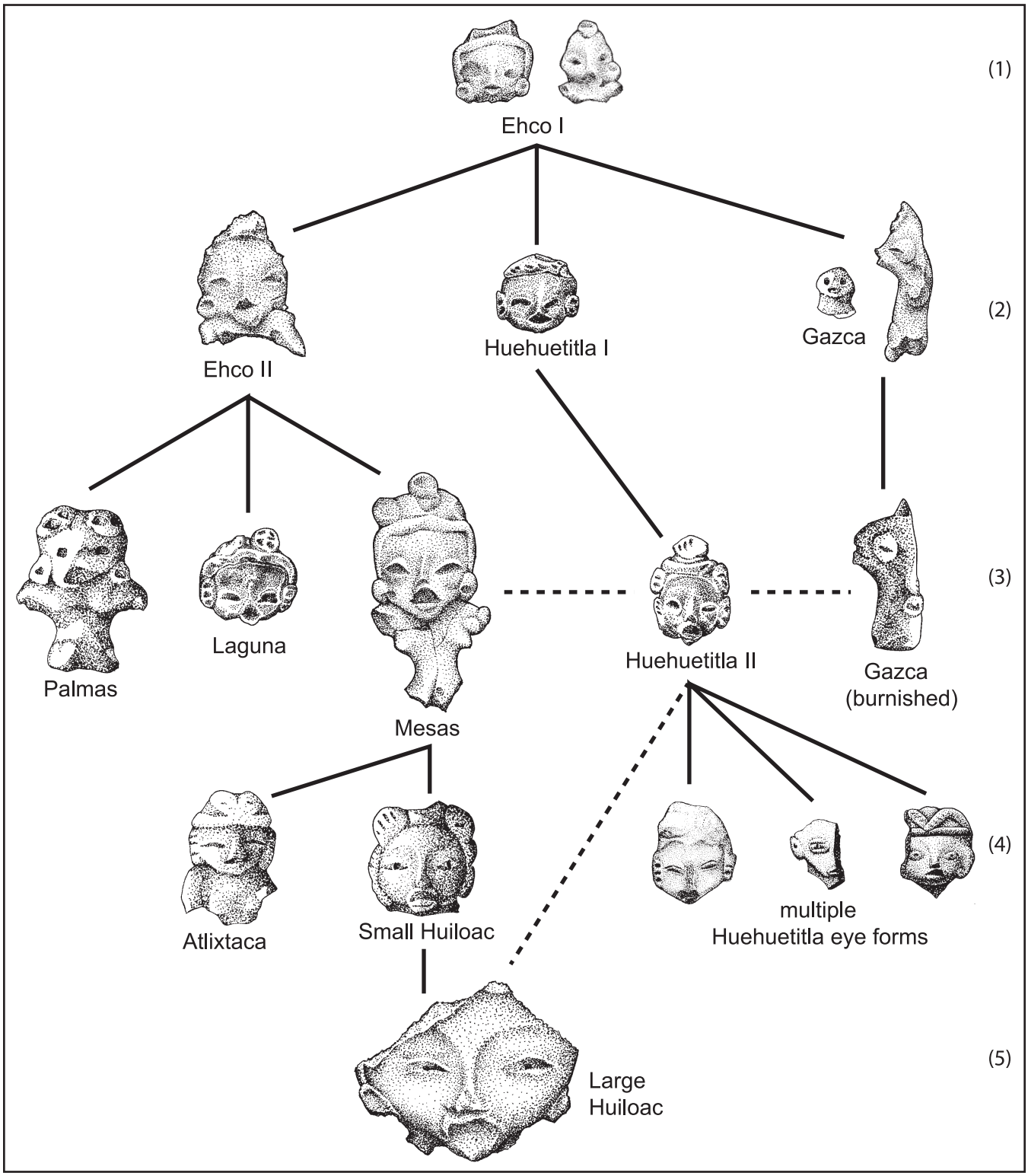

Figure 10.27. Branching tree illustrating hypothesized series of innovations among Ehco figurines. The numbers down the extreme right represent hypothesized steps in the series of innovations; they are discussed below in relation to Table 10.1.

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		Tzompantepec	Earlier Tlatempa		Tlatempa			Later Tlatempa							Texoloc		
	Grouping	A46	A23	A47	A71	A68-4S	A67	A57	A54	A64	A60	A12	A4	A73	A15	A10	A11
Tzompantepec/ Early Tlatempa diagnostics	Matron	2	1														
	CfB	5	1						1	1							
	ResCrude	3		2						1							
Tlatempa diagnostics	DCuat/CTrdD	1				1				1							
	SCuat	1	5	13	5	5	5	4	10	1	4	4	4	24	3	2	1
Late Tlatempa diagnostics	LCuat, LCuatD							1			1		1	2	1		
	Coax(Co-Cu)								1								
	Coax(Coax)									1	1		4				
	Coax(Co-E2)											1	2		1		
Texoloc/ Tezoquipan diagnostics	Ehco													1	5	5	4
	Gazca																2
	Huehuetitla														1	2	
	Huiolac																1
	Laguna																1
	Other	9		7	3		2	1	2	3	3		1	1	1		
	Total	21	7	22	8	6	7	6	14	8	9	5	12	28	12	9	9

Figure 10.28. Seriation of refuse contexts, Amomoloc and Tetel. Contexts are secondary refuse units of the Chronological Sample (Chapter 8), with labels abbreviated to the feature number where possibilities of confusion are small. Head and body fragments only are considered. Only contexts with five or more heads and/or bodies are included.

moloc, Feature A48 cut into Feature A54; unfortunately, A48 contained no figurines except limb fragments. Also at Amomoloc, Feature A73 cut into A71. The seriation orders those units correctly, placing A71 earlier than A73. Feature A73 contained a few late markers, including one of the very few Ehco figures found at Amomoloc.[2] No late markers were securely assigned to Feature A71, though one Coaxomulco figurine came from an area of interface between the features that collapsed during excavation. Contexts with only Small Cuatlapanga figures cannot be assigned to Early or Late Tlatempa, especially when they contain fewer than, say, 8 to 10 figurines.

The chronological distinctions between earlier and later Tlatempa, based here on relatively small numbers of figurines, are preserved quite well in the full chronological analysis of Chapter 11, in which information from figurines is combined with that from ceramic type and vessel form. The only significant violation is the assignment here of A57-2S to later Tlatempa (because of the presence of a single Large Cuatlapanga figurine). Based on an expanded set of information, including pottery, this feature is better classified as Early Tlatempa.

The second seriation, shown in Figure 10.29, is less successful. Here, the latest three units from 10.28 are seriated along with units from Mesitas and Laguna. Only units that yielded four or more figurines are included, significantly reducing the number of samples. The columns shaded gray are Tenexac units that mostly are not correctly seriated, probably because virtually all the figurines they contained are carry-ups. The single Teotihuacan 1 figurine in Lag-D1 is probably the only legitimate Tenexac-phase figurine among the samples. Ignoring the Tenexac units, a rough division between Texoloc to the right and Tezoquipan to the left is achieved.

One goal of this seriation is to evaluate the hypothesized branching series of Ehco and its varieties. It is interesting that multiple Ehco head varieties can occur in a single feature (for example, B50, B55). It would be possible to posit a relatively rapid emergence of new varieties, with each variety then persisting in use for a lengthy period. Although the data, split by context, are sparse for this part of the sequence, they appear to provide some support for the branching series of Figure 10.27. The exception is that Huiloac appears earlier than expected based on stylistic analysis internal to the collection. One possible explanation is prompted by discovery, among the collections from Ticomán at the American Museum of Natural History, of a head classified as E3 by Vaillant that strongly resembles Huiloac (see type description). If the assumption of local development on which the tree of Figure 10.27 was

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		A15	A10	A11	Lag-H2	A32+33	B50	B55	Lag-I1	Lag-D2	C137	B13	C148	Lag-D1
	ResCrude				1									
Tlatempa diagnostics	CuatSm	3	2	1										
	CuatLg	1												
	Coax(+E2)	1												
Texoloc forms	Ehco I	2		2			2	1						
	Ehco	3	5	2				1	5	1				2
	Ehco II				2	3			2	1				1
Tezoquipan forms	Laguna			1									1	2
	Palmas				1			2						
	Gazca			2			1	1			1		2	
	Huehuetitla	1	2				1	1		1	4	2	1	
	HuiloacSm+Lg			1			1		1	1		2	2	
Tenexac Too rare to seriate	Teo1													1
	Mesas					1								
	TG23-G?									1				
	19EhAtlix									1				
	Other	1				1		1			1		1	1
	Total	12	9	9	4	5	5	7	8	6	6	4	7	7

Figure 10.29. Seriation of Texoloc–Tezoquipan refuse contexts, Tetel, Las Mesitas, and La Laguna. Only contexts with four or more heads and/or bodies are included.

based does not hold for this type, it would not be surprising that the seriation does not uphold hypothesized placement of this type. It seems likely that Huiloac, like Ehco I, represents a local appropriation of a constellation of stylistic traits established elsewhere.

Figurine Groupings by Phase

The broader implication of Figure 10.29 is that by Early Tezoquipan figurines are too scarce to provide the sole basis for a chronology. An alternative approach to evaluating the stylistic series of Figure 10.27 is presented in Table 10.1, where the percentage distribution of figurine groupings is broken down by phase. For details on the phase divisions, see Chapter 11. It is worth noting that those distinctions do draw on information from figurines, though mainly early in the sequence (based on Figure 10.28); other sources of information are pottery type and vessel form. The ordering of rows in the table is again based on an arrangement that favors a diagonal from upper left to lower right. Note the small sample sizes for Laguna, Texoloc and "Late Tezoquipan." Patterns in those cases should be taken with a big grain of salt.

With refuse contexts aggregated rather than considered separately, the distinction between Texoloc, in which the Ehco type predominates, and Early Tezoquipan, in which Gazca, Huehuetitla, and Huiloac rise in importance, is clear. The numbers following the groupings Ehco through Palmas in Table 10.1 correspond to the numbered branches of stylistic evolution hypothesized in Figure 10.27 and therefore allow an assessment of those proposals. They fare reasonably well, with the earlier stages generally fitting in higher on the table than the later stages.

A final general point to be made concerning Table 10.1 is that with the glaring exception of Tenexac, the figurine groupings conform themselves into quite acceptable battleship curves. At first glance, Tenexac confuses the picture considerably, as it appears to register a resurgence of the Ehco type from more than 500 years earlier. However, I believe that the Tenexac results are irrelevant "noise." The only actual Tenexac figurine in the table is the single Teotihuacan 1 piece. All the rest of the collection of that phase consists of carry-ups from previous phases. The muddled representation of types shown for that phase in the table is what one would expect under those circumstances.

If production of new figurines in Tenexac had essentially stopped, one would expect as well a distinctly lower overall density of figurines in samples from that phase than from previous phases. The bottom row of the table standardizes the total N for each phase (consisting of body and head fragments) by the weight of associated sherds. Figurine density is indeed lowest in the Tenexac phase, consistent with a suggestion of much-reduced input of figurines at that time. The Tenexac value is perhaps not as much lower than that of Early Tezoquipan as one might expect. The much-reduced production of figurines in Tenexac was the culmination of a lengthy, gradual decline in figurine making that also accounts for the relative lack of success of the

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Texoloc–Tezoquipan seriation (Figure 10.29) in comparison to the Tzompantepec–Texoloc seriation (Figure 10.28).

In summary, the figurine groupings typical of our phases and subphases between 900 and 400 B.C. are as follows.

Tzompantepec Phase: Coffee-bean eyes and matrons are characteristic, along with extremely crude figures that appear to overlap with what García Cook and Merino Carrión (1988) would call Tzompantepec 1. Small Cuatlapanga figures or Cuatlapanga deviates appear in small numbers. Trejo (1997:28, 31) reports 16 Tzompantepec-phase figures from García Cook's excavations, classified as K, C1, Tzompantepec 1, and Tlatempa 1, with C1 comprising half the sample.

Early Tlatempa Subphase: Predominantly Small Cuatlapanga, with some continuation of characteristic Tzompantepec-phase forms. Large Cuatlapanga occasionally appears. There are no forms uniquely diagnostic of Early Tlatempa, and assignment of a feature to the subphase needs to be based on ceramics as well as figurines.

Late Tlatempa Subphase: Predominantly Small Cuatlapanga, with Large Cuatlapanga and Coaxomulco. Although the latter two are diagnostic, they are usually minor types; it is to be expected that not all samples of late Tlatempa figurines will include one of them. Still, the *presence* of Coaxomulco (along with Small Cuatlapanga and in the absence of Ehco) may be sufficient grounds to identify a feature as Late Tlatempa.

Texoloc: Predominantly Ehco and its head varieties, along with Huehuetitla and Huiloac in smaller numbers. Varieties linked to Vaillant's G type, particularly Gazca, appear.

Early Tezoquipan: Huehuetitle and Huiloac are particularly common, though Ehco seems to continue. Miscellaneous groupings such as Laguna and Gazca are present, and typological deviates related to regional types H2 and H5 appear in small numbers.

DIACHRONIC ANALYSIS OF FIGURINE STYLE

My final task is a diachronic analysis of figurine style in the study area from 900 through 400 B.C. I promised an anal-

Table 10.1. Percentages of Figurine Groupings by Phase.

	Tzompantepec	Early Tlatempa	Late Tlatempa	Texoloc	Laguna Texoloc	Early Tezoquipan	"Late Tezoquipan"	Tenexac
Matron	9.5	2.0						
Coffee-bean	**23.8**	2.0	3.2					
ResCrude	**14.3**	**5.9**	1.1					3.7
CuatTD/CTradTD	4.8		2.1					
Cuat Small	4.8	**66.7**	**62.8**	**16.7**				
Cuat Large		2.0	4.3	2.4				
Coaxomulco			**11.8**	4.8				
Ehco (1–4)			1.1	**28.6**	15.4	16.7		**25.9**
Mesas (3)				4.8				
Ehco I (1)				9.5	15.4	7.1	10.0	7.4
Ehco II (2)				9.5		4.8		**22.2**
Laguna (3)				2.4		4.8		11.1
Gazca (2–3)				4.8	7.7	9.5	10.0	
Huehuetitla (2–4)				7.1	**38.5**	**21.4**	**40.0**	3.7
Huiloac (5)				2.4	15.4	**19.0**	10.0	3.7
Palmas (3)						7.1		3.7
TD-H2						2.4		
BlkG?								3.7
EhAtlix								3.7
Teotihuacan 1								3.7
Other	42.9	21.6	13.8	7.1	7.7	7.1	30.0	7.4
N	21	51	94	42	13	42	10	27
Figurines per 10-kg sherds	7.6	3.2	2.5	2.6	3.0	2.1	1.8	1.6

Note: Values for the two highest groupings for each phase in bold.

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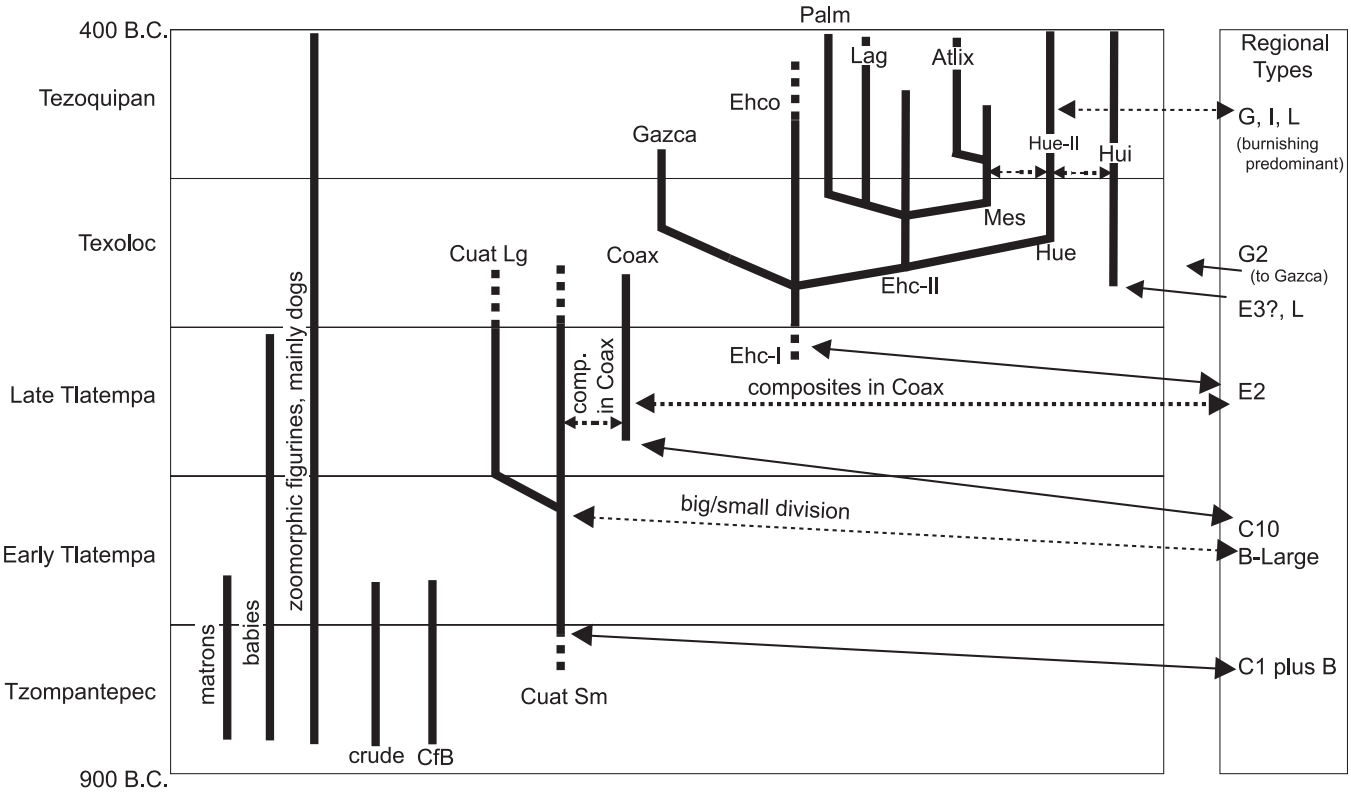

Figure 10.30. Series among figurines from 900 to 400 B.C. in central Tlaxcala, with probable sources for innovation types indicated.

ysis with three basic components: identification of series among the types, an attempt to locate sources of innovation, and an assessment of variability in stylistic phenomena. The first and second components fit naturally together, while the analysis of variability stands alone as a separate section. This division roughly corresponds to a consideration first of what is readily apparent in style and then of what resides in its structure.

Series and Source

The various strands of argument needed for an assessment of series and source have already been presented in a dispersed fashion in the chronology section and the individual type descriptions. Figure 10.30 attempts to pull them together. Two series dominate the collection. The first, corresponding to the Tlatempa phase, includes Small Cuatlapanga, Large Cuatlapanga, and Coaxomulco. I argue above that these types did not in fact form a local series. They are, rather, local expressions of a series that played itself out at a scale larger than the study region. The numerous strong ties to regional types help make that point. My basic claim is that each of the three types that compose the series locally was created when figurine makers in central Tlaxcala appropriated, for their own uses, clusters of traits formulated elsewhere. I have not taken it as my task to locate source areas at all definitively, though I speculate freely in the discussion that follows. Strongest ties generally seem to be the Puebla-Tlaxcala Valley and the Basin of Mexico, with the former the immediate source in most cases.

There is a hint of some complexity in the earliest appearance of the Cuatlapanga tradition. In Tzompantepec-phase Feature A46, there was a head with eyes that deviated from Cuatlapanga conventions (CuatTD2). By Early Tlatempa, however, the rigid conventionality of the Cuatlapanga-phase facial features was well established. Small Cuatlapanga matches what Reyna Robles (1971:Lámina 2) refers to as Puebla variants of C1 (see also Spranz 1968:figures 26–29; Serra Puche and Lazcano Arce 2011:Figure 74).

Resemblances between Cuatlapanga and C1 figurines from the Basin of Mexico are less strong—although, rather surprisingly, motifs of body painting are practically identical (Lesure 2011a:Figure 57). I argue in the type description for links between Cuatlapanga and Vaillant's Type B. I would propose the following hypothesis to account for this double link. C1 emerged earliest in the Basin—the character of variation at Zacatenco would support such a claim—and inspired a Puebla variant. Distinctive innovations on the C1 pattern in Puebla-Tlaxcala—particularly the pronounced two-dimensionality and the rigid conventionality

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of facial features—were then reappropriated by Basin figurine makers in the formation of the B type. This scenario would fit with Tolstoy's (1978) chronological subdivisions of the Zacatenco phase, in which C1/C2 dominate the earlier subphases and B, F, and A appear later. In this scenario, the similarities between Cuatlapanga and C1 or B in the Basin of Mexico would be indirect, mediated through the Puebla-Tlaxcala Valley—a reasonable claim in geographic terms.

Large Cuatlapanga is identical to Small Cuatlapanga in everything but size, and it could certainly have emerged as a local innovation in the study area. I am struck, however, by the parallelism with B-Small and B-Large at Zacatenco and El Arbolillo. Since a small/large division was being made also in other areas around this time, it is probably best to postpone any insistence on local innovation.

The final type in the first series is Coaxomulco, an appropriation of regional Type C10, probably from Cholula or the southern Puebla-Tlaxcala Valley more generally (see type description). Coaxomulco resembles Cuatlapanga in many respects, but its coherence as a type takes a different form. Visual linkages among Coaxomulco figurines are, in the terminology outlined in my introduction, reticulate rather than redundant (Figure 10.2). Compatible with this more polythetic structure is what appears to have been a propensity for absorbing recognizable attributes from other styles. I refer to such figurines as composites. In my reconstruction, two sources can be identified: the local Cuatlapanga type, and the regional E2 type. This last, at the time of the appearance of its traits in Coaxomulco, had yet to make its local debut as Ehco. (See discussion above, in chronology section and type description.) The propensity toward composites may be a feature of C10 at the regional scale. Tesch (1977:Lámina 2l) illustrates a C10/E2 composite from Acatepec.

The second series, unfolding during Texoloc and Early Tezoquipan, consists of the many varieties of Ehco as well as the related types Huehuetitla and Huiloac. The branching tree in Figure 10.30 reproduces that of 10.27, with the exception of the placement of Huiloac, a modification suggested by the seriation and supported by the appearance of an E3 head strongly resembling Huiloac in Vaillant's collection from Ticomán.

In contrast to the first series, I argue above that significant innovations in this case were local. Moving along the tree—from Ehco I, to Ehco II, to Mesas, to Atlixtaca, for instance—one can trace the sort of gradual modification to be expected of local stylistic innovation. The main appropriations are the creation of Ehco I on inspiration from regional Type E2, the adoption of burnishing in the Huehuetitla and Gazca branches on general inspiration from the suite of regional types G–I–L, and possibly the appearance of Huiloac, inspired from some E variety (E3?) or Type L.

I have not had much success linking the varieties of Ehco to regional types, a result consistent with a claim for local innovation. However, it is important to not give the impression that Tezoquipan figurines exhibit any pronounced local insularity. There are generic similarities with figurines of Puebla and the Basin of Mexico, particularly apparent in the Huehuetitla type. The scenario illustrated in Figure 10.30—which should be regarded as tentative—sees Huehuetitla emerging from Ehco I as a burnished variant, then absorbing traits from Mesas and/or Huiloac. After the initial direct appropriations, local innovators in the Texoloc and Early Tezoquipan phases were influenced by regional trends but avoided copying the figurines of adjacent regions in detail. The trend toward burnishing in Huehuetitla, Gazca, and Huiloac—in contrast to the smoothed surfaces of Ehco—replicates the shift from E1–E2 to G–I–L (and thus Ticomán 1 to Ticomán 2) in the Basin of Mexico. The size differential between Huehuetitla and Large Huiloac is analogous to that between G and L. In contrast to Tlatempa and initial Texoloc, in which local figurine makers essentially copied figurine styles from adjacent regions, during later Texoloc and Early Tezoquipan, central Tlaxcala was part of a broad area of localized innovation that included the Puebla-Tlaxcala Valley and the Basin of Mexico.

The five bars on the left of Figure 10.30 have not been grouped into any series. Stylistic affinities of the coffee-bean eye figurines that seem characteristic of the Tzompantepec and Early Tlatempa phases may become clear once a larger sample is available. The extremely crude figures in use during the same period lack sufficient coherence to be securely identified as expressions of a regional type.

At the extreme left in the figure are three groups defined by what would appear to be iconographic rather than stylistic criteria. The matrons and babies cohere only loosely as groups. Zoomorphic figurines persist throughout the 500 years in question, though they became less numerous over time. Those of a scale appropriate to appear in a "scene" alongside human figures are mainly dogs. There are no evident stylistic series. Tzompantepec, Tlatempa, and Texoloc dogs look similar, except for some variation in paste.

The lack of stylistic differentiation among the animals helps highlight, by way of contrast, the central importance of style in the anthropomorphic imagery. If Formative villagers grouped figurines into sets (see Marcus 1998:177–181, 311), with human and animal images appearing together, then stylistic elaboration was not evenly distributed across the figures involved but concentrated in human images.

We can actually clarify that statement further. If I am correct in my iconographic reading of the residual grouping I identify as babies, it would appear that the lack of stylistic differentiation extended from animals to encompass very young humans as well. In only two cases are possible "babies" typeable on stylistic grounds. Others do not bear stylistic traits that would allow assignment to types in the collection. If these figures appeared in scenes along with dogs and images of older people, then babies, like dogs, were not apportioned the stylistic attention so cen-

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Table 10.2. Percentage Distribution of Figurines Among Taxonomic Categories, Split by Phase.

	Tzompantepec	Early Tlatempa	Late Tlatempa	Texoloc[a]	Early Tezoquipan	Tenexac
Typed specimens	23.8	68.6	80.9	92.7	95.2	82.8
Typeable deviates	9.5	3.9	4.3	3.6	2.4	6.9
Deviates within a type	4.8	.0	3.2	.0	.0	.0
Residuals: small sample?	14.3	2.0	1.1	.0	2.4	6.9
Residuals: low coherence?	28.6	7.8	6.4	.0	.0	3.4
Residuals: unusual torsos	9.5	11.8	1.1	.0	.0	.0
Residuals: unidentified	9.5	5.9	3.2	3.6	.0	.0
Total N	21	51	94	55	42	29

[a] Includes Laguna Texoloc (see Chapter 11).

tral to the depiction of older humans. There are a variety of strands here that I will pick up when I turn to a social analysis of the Apizaco collection in Volume 3.

To conclude, stylistic patterns among figurines differ significantly between the five chronological divisions we have been able to establish from 900 through 400 B.C. The Tzompantepec phase (900–800 B.C.) seems to have been characterized by considerable diversity among figurines. That pattern, only hinted at in Figure 10.30, will become clearer in the next section. By contrast, Early Tlatempa (800–725 B.C.), with the pervasive adoption of Cuatlapanga, was an era of considerable stylistic homogeneity, characterized by strong links to stylistic patterns in adjacent regions. Late Tlatempa (725–650 B.C.) saw a loosening of that homogeneity, with several distinct styles, all still strongly related to regional types. I believe that a larger sample from this era would amplify that pattern: the typological deviates identified as Vaillant's A and F types probably date to the late Tlatempa phase. Texoloc and Early Tezoquipan (650–400 B.C.) were characterized by an even greater differentiation of styles but fewer strong links to regional types. Figurine makers in the Apicaco region were at this time participants in a zone of loosely linked local innovation extending through the Puebla-Tlaxcala Valley.

Variability of Stylistic Phenomena

My final task is to delve deeper than the obvious differences between types to ask if figurines of one time period are stylistic in a different way from those of another period. I promised two perspectives on that problem, one based on my taxonomic categories, the other focusing on individual attributes.

As intimated in my introductory discussion, the typological criteria of *frequency*, *attribute density*, and *coherence*—introduced initially as methodological tools—can be understood to have theoretical relevance when we select them as principles for exploring stylistic variability. The intersection of these principles allowed me to derive three sorts of taxonomic categories: *types*, with high attribute density, high frequency, and high coherence (whether "redundant" or "reticulate"); *typeable deviates*, with high attribute density but low frequency and consequently an unknown degree of coherence; and *residuals*, with low attribute density and/or coherence.

To grasp the theoretical relevance of these categories, we need only recall that style lies in the visual interconnections among objects and posit that our identification of a set of figurines as a type, a deviate, or a residual gets at patterning that was indeed present in their original circumstances of use. For example, we would suppose that the types that dominate our collection were common while those we label typeable deviates were rare. One factor in the visual impact of figurines would have been the number of other, similar figures also in use—a characteristic that should be approximated by the relative frequencies of groupings from the archaeologist's sorting table. Further, if a figurine style with high coherence (a type) were in use in the same community as one with low coherence (a residual), then one aspect of the cognitive salience of the figures in this community would have been that their styles were constituted differently (that is, they were not equally coherent). The same argument would apply to two contemporary styles that were each coherent but in different ways (for example, redundant versus reticulate).

Some insight into stylistic variability, then, might be gained by examining the relative distribution of figurines among my three taxonomic categories. That analysis, with the main identifiable periods separated, is shown in Table 10.2. Residuals, with their low coherence and consequent uncertainties, need to be treated with caution. I have divided them into those I felt might be typeable with a larger sample, those I suspect designate groupings that really did have a low coherence, those I refer to as untyped torsos (also indicative of low coherence since they cannot be systematically related to heads), and those pieces that are simply unidentified. I have also separated the

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deviates assigned to local types from deviates without any type designation.

The results illustrate better than does Figure 10.30 the extraordinary character of the Tzompantepec assemblage. The low percentage of typed specimens, the high percentages of deviates and untyped torsos, and the substantial group with low coherence all suggest a kind of stylistic chaos among the figurines from this phase. Of course, the sample here is small relative to the other periods.

Early Tlatempa, Late Tlatempa, and Texoloc seem broadly similar in comparison to Tzompantepec, but there are several noteworthy directional trends. The percentage of figurines that are members of large, coherent groups with high attribute density (that is, types) jumps sharply from Tzompantepec to Early Tlatempa but then continues to increase. Typeable deviates, on the other hand, decline from Tzompantepec to Early Tlatempa and then maintain what appears to be a plateau. The other consistent trend is a decrease across the first four periods of residuals with low coherence.

Table 10.2 characterizes stylistic variability at a level of abstraction greater than my basic classifications of the figurines. As I turn to my consideration of individual attributes, I take up a perspective more fine grained than that of my classification. Indeed, groupings like Cuatlapanga, Ehco, and so on are ignored in the rest of this section, which centers on a consideration of *diversity* at the level of features such as eyes, noses, and arm positions. Diversity includes *richness* (how many different categories of eyes are there in Late Tlatempa?) as well as *evenness* (are figurines spread out among those categories or concentrated in one or two of them?) (see Pielou 1969:221–222; Rhode 1988:708–709). There are various ways to measure diversity. I use Simpson's measure described by Pielou (1969:223–224). Suppose we have N figurines, with eyes classified into C different categories. The number of figurines with eyes in the *j*th category is designated

$$N_j (j = 1, 2, \ldots, C; \sum_j N_j = N)$$

If we pick two figurines at random without replacement from the N figures, the probability that they will have the same sort of eyes is

$$\sum_j [N_j (N_j - 1)]/[N(N-1)]$$

When that probability is high, the diversity of the collection with respect to that attribute is low, so we can define the diversity measure, D, as:

$$D = 1 - \sum_j \frac{N_j (N_j - 1)}{N(N-1)}$$

D can vary from 0 to 1. The minimum possible diversity of 0 corresponds to the case in which all eyes are assigned to the same category, while the maximum diversity of 1 would be the case in which each eye has a different category.

Despite these clearly defined minimum and maximum values of D, it is important not to attribute exaggerated relevance to specific values. These are heuristic measures, useful for relative comparison across bodily features and between phases. The definition of categories is in each case subjective. I have used my finest-grained original codings, removing only distinctions that derived from uncertainty due to fragmentation of the figurines. On the coding forms, I sometimes noted slight variations from typical patterns; in the diversity analysis, I treat such cases as separate categories.

Results are shown in Table 10.3. I have selected a set of facial features (eye, nose, mouth, and ear/earspool) and four torso features (breast, pubis, arms, and posture). There appear to be systematic differences between these different bodily features that persist throughout the period in question.

The diversity observed for each of the four facial features is similar within a given period. Torsos, on the other hand, vary more between different bodily features (for example, breasts versus posture) than they do between periods. I suspect that the reason for these differences is that face attributes are more purely "stylistic," whereas torso attributes reflect subject matter as much as or more than style. The rise in breast diversity in Texoloc captures the loosening of the coding of sex attributes noted in the type descriptions of Laguna and Huehuetitla.

The most revealing insights into stylistic phenomena are provided by the suite of facial features. Since these measures do not depend on my assignments of figurines to types, it is reassuring to find that patterns noted above reappear. Tzompantepec exhibits high facial diversity. (Table 10.3 provides averages to aid comparison between phases.) That finding is consistent with my previous claims for low coherence and a significant presence of typeable deviates. After Tzompantepec, diversity plunges; the lowest diversity for every facial attribute is reached during Early Tlatempa, when highly redundant Cuatlapanga figurines predominate. Diversity rises in Late Tlatempa and then again in Texoloc, most dramatically for earspools.

Measures of diversity are notoriously plagued by the effects of sample size: larger samples tend to be more diverse (Kintigh 1984; Rhode 1988). The patterning among facial attributes exhibited in Table 10.3, however, is strong enough to override the sample size effect. The smaller samples (Tzompantepec and Tezoquipan) are the most diverse.

I will end with a consideration of a set of attributes that prove not particularly amenable to the diversity analysis: headdresses and body ornamentation (Table 10.4). Although fragmentation of the complex headdresses is a problem, diversity analysis shows persistent high diversity in this feature throughout the sequence. Understanding headdress variation requires an alternative to the diversity measure. I counted the *production steps* required to com-

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plete each headdress. (Each fillet was counted as a separate step. Multiple impressions counted as one step if they seemed to be made by the same tool used in a similar manner. I considered only plastic decorations since paint was so unevenly preserved.) Table 10.4 provides the mean number of headdress production steps by time period. We get here a new perspective on stylistic variation in Early Tlatempa. At the moment facial attributes were at their most rigidly conventionalized, there was an explosive elaboration of headdresses. The pattern extends to other plastic body ornamentation, particularly nose ornaments and anklets/sandals (also provided in Table 10.4). Shoulder ornaments, by contrast, are more common on Texoloc and Tezoquipan figurines.

Discussion

One theme to emerge from the attribute-level consideration of stylistic variability is that different attributes of the figurines—and thus, by implication, different sites on the imaged body—were stylistic in different ways. There was some continuity through the sequence in the pattern of differences among attributes. Facial features were consistently a focus of stylistic attention, irrespective of whether the style in question was reticulate or redundant, permissive or rule-bound. Further, facial features tended to exhibit similar degrees of diversity at any one time, even as average diversity fluctuated considerably. In comparison to eyes, noses, mouths, and earspools, headdresses were always of high diversity, though the production-step analysis helps to tease out fluctuations there as well.

Despite such continuities, "style" appears to have taken a distinct form in different periods. Figurines of the Tzompantepec phase were highly varied, and they do not cohere into clearly definable groups. I refer above to a kind of stylistic "chaos" in this phase, but I do not mean that there were multiple distinct styles, as we see in Late Tlatempa. The chaos in Tzompantepec seems to emerge from weak rules and low attribute density. We might speculate that style as such was not a particularly powerful cognitive de-

Table 10.3. Diversity of Four Facial Attributes and Four Torso Attributes, Split by Phase.

	Tzompantepec	Early Tlatempa	Late Tlatempa	Texoloc	Early Tezoquipan
Facial attributes					
Eyes	.82	.35	.74	.82	.90
Nose	.80	.40	.57	.79	.74
Mouth	.96	.37	.61	.79	.86
Ear/earspool	.77	.38	.60	.90	.88
Average for face	.84	.38	.63	.82	.85
Torso attributes					
Breasts	.44	.67	.68	.82	.89
Pubis	.33	.30	.46	.20	.24
Arms	.58	.70	.63	.76	.76
Posture	.33	.30	.46	.20	.24

Table 10.4. Analysis of Headdresses and Plastic Body Ornamentation.

	Tzompantepec	Early Tlatempa	Late Tlatempa	Texoloc	Early Tezoquipan
Headdress: production steps					
Mean	2.5	5.6	4.4	4.3	3.2
N	8	18	38	15	10
Body ornamentation					
% with nose ornament	9	57	31	5	0
% with chest ornament	18	28	53	7	0
% with bracelet	0	13	14	8	0
% with anklet/sandal	17	50	31	17	10
% with shoulder ornament	0	0	3	23	13

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vice in this phase. Consistent with that suggestion would be the loose relations to regional patterns.

The changes of Early Tlatempa were radical indeed. There was a rapid move toward one rigidly defined style, though with a continued production of extraneous figurines of low coherence. Figurines of this subphase seem to embody a tension or dialogue between an almost grotesquely rigid conventionality and a carelessly incoherent crudeness. The highly stylized figures are strongly linked to regional conventions, while the crude figures are not coherent enough to allow any convincing link to be established.

In comparison to Early Tlatempa, Late Tlatempa might be characterized as something of a chaos—but a chaos of a very different sort than in Tzompantepec. Crude figurines of low coherence were rarer, but there were now multiple, contemporary, coherent styles. We have good evidence for Small Cuatlapanga, Large Cuatlapanga, and Coaxomulco, but I have also suggested that the rare equivalents of regional types A and F should be included here. All styles were closely tied to regional patterns.

In both Early and Late Tlatempa, figurine makers mainly appropriated stylistic conventions established elsewhere. Texoloc and Tezoquipan, by contrast, were characterized by local stylistic innovation. Adoption of the E2/Ehco prototype was followed by a proliferation of new varieties. That innovative trend is reflected in the increased diversity of Texoloc figurines in features from facial attributes to those associated with gender coding.

CONCLUSIONS

My two primary goals in this chapter have been to present a stylistic description and a chronological analysis of the Apizaco figurine collection. While I have developed my own set of taxonomic categories for stylistic analysis, I present the groupings in such a way that they can be linked to previous typological work. The descriptions themselves are unusually detailed; I can only hope that my efforts here will inspire others to a similar level of detail. The chronological analyses are also sufficiently detailed to reveal both the possibilities and the limitations for dating of deposits using figurines. Four previously defined phases can be distinguished. In addition, figurines can help in separating Early and Late Tlatempa subphases, but only in conjunction with pottery analyses. My concluding analysis of style begins to move consideration of figurines toward social interpretation. I will pick up from that point in a chapter dedicated to such interpretation in Volume 3 of the Apizaco reports.

ACKNOWLEDGMENTS

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[1] The idea I seek to convey with this term is that the pieces deviate from the conventions represented by local types. I do not refer to these as deviants because I do not intend to suggest that there is something wrong or immoral about these pieces. Instead, on inspiration from the statisticians' noun variate (itself unavailable due to possible confusion with variety), I use deviate as a noun. In pronunciation it would rhyme with secretariat.

[2] That Ehco figure was quite eroded in contrast to the other figurines from the feature. It could possibly be intrusive through rodent or root action.

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CHAPTER 11

A Formative Chronology for Central Tlaxcala

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Aleksander Borejsza, and Isabel Rodríguez López

THIS CHAPTER PROVIDES a chronological synthesis of materials recovered from Amomoloc, Tetel, Las Mesitas, and La Laguna. The result is a partial Formative sequence for central Tlaxcala, with detailed coverage from the initial occupation of the region by village-dwelling agriculturalists at around 900 B.C. until 400 B.C. Coverage from 400 B.C. through A.D. 200 is uneven. We are able to identify a local Terminal Formative/Early Classic phase from A.D. 50 through A.D. 150/200, but we have no firm understanding of pottery characteristic of the preceding 200 years or so. Also, as a result of the hiatus in occupation at La Laguna (see chapters 1, 5, and 9) we have a gap in our sequence from approximately 400 B.C. through 100 B.C.

Our evidence for chronological analysis consists of the contents of selected refuse deposits. We consider pottery types and forms, ceramic figurines, and radiocarbon dates. Stratigraphic relations between units are known only in a few cases. Selection of refuse deposits for the Chronological Sample is discussed in Chapter 8, and the units themselves are identified in Table 8.1. The sequence described in this chapter is based on seriation of those units. We relate our results to previous chronologies for Formative Tlaxcala, establish comparisons to other sequences, and grapple with challenges such as the hiatus at La Laguna and a flat segment of the radiocarbon calibration curve between 800 and 400 B.C.

CONCEPTS, ASSUMPTIONS, AND METHODS

With few known stratigraphic relations among units (due to erosion of the Formative ground surface) and with a somewhat frustrating input from radiocarbon dating, our chronology relies heavily on the seriation of material culture traits. We thus assume we have been generally successful in our efforts to construct classifications of pottery and figurines sensitive to stylistic attributes—sensitive, in other words, to attributes with a high degree of culture-historical specificity. The changes we identify include the *presence* or *absence* of particular types of figurines or forms of serving vessels, but particularly important are shifts in the *relative frequency* of pottery types. Still, only the second of the three seriations that we describe is purely a frequency seriation.

In concept, seriation of the Chronological Sample (Table 8.1) could yield a single linear ordering of units. In practice, however, there is considerable "noise" in the contents of refuse deposits—variation in chronologically sensitive criteria that appears to have nothing to do with chronology. Consequently, the results of seriation need to be synthesized at a coarser grain if they are to be reliable and replicable. The only reasonable output, as far as we can see, is the conventional archaeological phase in which the seriated units are grouped into sets and assigned some more or less lengthy temporal interval (for instance, 800–650 B.C.). Because the material traits we identify as characteristic of our phases are mainly derived from our analysis of pottery—and because all other evidence such as stratigraphy, radiocarbon dates, comparisons with other regions, and so forth supports such a move—we designate each of the *ceramic complexes* introduced in Chapter 9 as "phases." We also name the phases after the complexes. Thus the Tlatempa phase of 800–650 B.C. corresponds to the period of use of the Tlatempa ceramic complex. Given the specific material record we are reporting, a lack of precision in reference to complexes and phases seems far preferable to the terminological confusion that would result from giving

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new names to phases. Still, the distinction between *complex* and *phase* cannot be ignored altogether. We are convinced that the differences between our complexes are fundamentally chronological in origin, but that is a point subject to empirical verification. Conceivably, two complexes might have been contemporary, with the differences between them social rather than chronological in origin.

The final form of our chronology is a sequence of named phases. Each phase is associated with a suite of readily identifiable material attributes and assigned at least tentative absolute dates. Attributes characteristic of phases are multiple and include distinctions among pottery types, vessel forms, and figurines. In the case of the Tlatempa phase, we distinguish between early and late subphases. In our usage, subphases are tentative subdivisions. In the case of Tlatempa, the early/late distinction appears to be real enough in our sample, but the suite of traits involved is narrower than the sets of distinctions on which our phases are based, and the distinctions themselves barely rise above the level of noise in the refuse data.

Although material criteria sufficient to define a phase will always be multiple, phase boundaries are not necessarily abrupt. A gradual transition can be every bit as real as an abrupt one and a valid basis for designating a phase boundary, even if the precise point at which the boundary is set within a series of units is somewhat arbitrary. In our sample, the Tlatempa–Texoloc transition looks abrupt while the Texoloc–Tezoquipan transition appears gradual.

The output of our chronological analysis—a sequence of named phases—is consistent with that of previous work in our area (García Cook and Merino Carrión 1988, 1989) and in nearby regions such as the Tehuacan Valley (MacNeish et al. 1970) and the Amatzinac Valley in Morelos (Cyphers 1987; Cyphers and Grove 1987). It is a simpler scheme than some versions of the Basin of Mexico sequence (Sanders et al. 1979; Tolstoy 1978).

Although most readers will probably be well aware of the fundamentally inductive logic of seriation, it seems worth drawing attention to the circular character of the procedures we followed in developing our chronological synthesis—and to the strategies we employed in our efforts to keep those from becoming *viciously* circular. Our "types" were established with the goals of chronology in mind; we sought to identify entities that could be recognized by different analysts and that would cohere in battleship curves (Chapter 9). To produce the first, "traditional" seriation reported in this chapter, we began by trying to identify individual units as exemplars of one or another ceramic complex described by García Cook and Merino Carrión (1988). By moving back and forth between general patterns and patterns manifested in individual units, we gradually developed a key for the classification of units. In our presentation here, we describe the key and apply it to the classification of units. Then, based on those classifications, we summarize the general patterns of change. The rules of the key, we suggest, provide some constraint on the free rein of our presuppositions in the classification of units.

Still, we devised the rules in close dialogue with the evidence, our plentiful radiocarbon dates help only modestly, and we have few instances of clear stratigraphic relations with which to check our results. Does our classification of units have statistical validity? We consider two alternative seriations that explore that question using correspondence analysis. First, we describe our efforts to seriate frequencies of types—probably the most common approach to the problem in archaeological usage. That approach, however, does not make use of all available evidence, since it is clear that attributes of vessel form and of figurines have considerable temporal sensitivity. There is no simple way to use correspondence analysis on all our distinct sources of evidence at once, but we have devised a rather elaborate approach that succeeds in doing so; we present that as our third seriation. A comparison of all three seriations provides a basis for assessing the robustness of our relative chronology. It is only with a relative chronology established that we consider the question of absolute dates for the phases based on radiocarbon and correlations with other sequences.

PREVIOUS FORMATIVE-PERIOD CHRONOLOGIES FOR TLAXCALA

Figure 11.1 compares the chronology we propose in this chapter to those of previous projects in our immediate area. Our proposals are compatible with the early work of Snow (1966, 1969). Our chronology is compatible as well with that of Xochitécatl (Serra Puche and Palavicini Beltrán 1996; Serra Puche and Lazcano Arce 2011; Serra Puche et al. 2004). Our biggest diversion from previous chronologies for our area is our radical compression of the Formative sequence proposed by García Cook and Merino Carrión (1988; García Cook 1974), even as we adopt their basic ceramic complexes. That issue is also addressed in our discussion of absolute dates and correlations with adjacent regions.

SERIATION BY GROUPING AND IDENTIFICATION OF UNITS

Our first seriation is the outcome of analysis of large tables of frequencies of pottery types, pottery forms, and figurines. Units analyzed were the contexts of the Chronological Sample (Table 8.1). Information on types, forms, and figurines was organized into three separate tables stacked one on top of the other so that each column represented a single context. Analysis consisted of rearranging the columns to form coherent groupings. We then attempted to identify the groups with previously defined phases. Where necessary, we defined new phases or subphases. Our procedures were "traditional" in that they were adapted from techniques that archaeologists have used for decades (e.g., Ford 1969).

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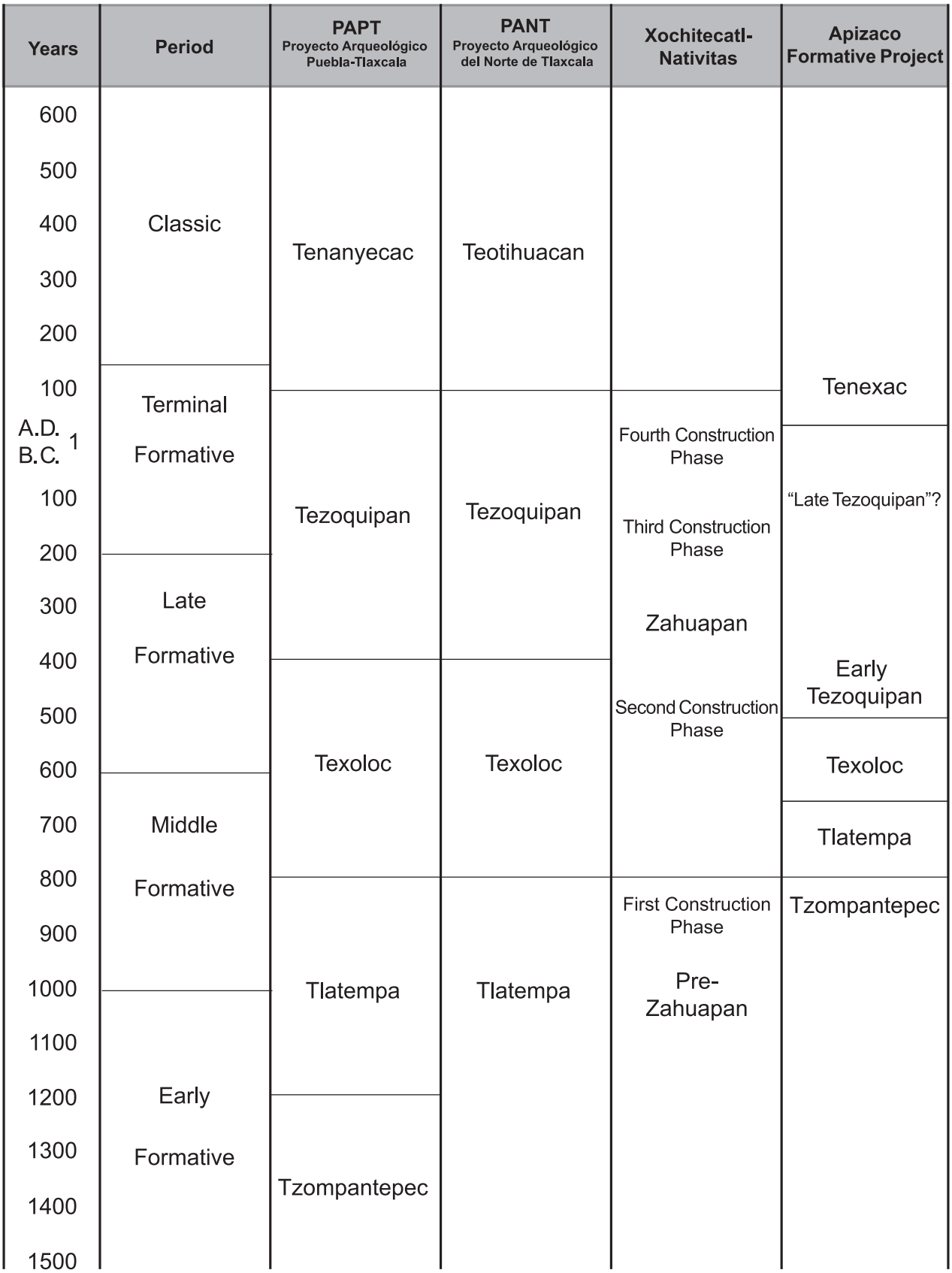

Figure 11.1. Comparison of previous sequences for Formative-period Tlaxcala (middle columns) with that proposed here (right column).

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Analytical challenges encountered include the inter-observer differences in identification of types described in Chapter 9. In the chronological analysis, we used a combination of types and groups of types that has greater inter-observer stability than just the types. At the level of the individual context, we found considerable noise in our data—significant variation in contents of pits that were actually deposited close together in time. Such variation was particularly apparent in the case of vessel form. Although details of form are indeed time sensitive, there are radical differences from unit to unit within the same phase in all but the most common vessel forms (and even sometimes among those). Finally, figurines are also time sensitive—as recognized for Central Mexico generally by Vaillant (1930, 1931)—but in Tlaxcala, the frequency of figurines in domestic refuse declines over the course of the first millennium B.C. By the end of the sequence, figurines are few to the extent that they are of only minor help in making chronological distinctions. Much of the figurine collection from deposits dating to the second occupation at La Laguna consists of types that were already in use from 600 or 500 B.C. We believe that most of those pieces are carry-ups from the earlier occupation. They outnumber pieces actually produced in the second occupation because far fewer figurines were being used at that time, particularly by the Tenexac phase.

The analyses described in this section yielded groupings of similar units, which we then identified as exemplars of previously defined phases (Tzompantepec, Tlatempa, Texoloc, or Tezoquipan), newly defined subphases (Early or Late Tlatempa), or a newly defined phase (Tenexac). For each group of units, we identified a set of attributes that distinguished it from the other groups; those observations provide the basis for the phase descriptions presented here. We also developed a key for the classification of units. The fact that a simple key actually works is an indication of the strong patterning in the sample—patterning that we would argue is largely chronological.

In this section, we identify material attributes of the phases, describe our key, discuss interpretive issues we encountered as we devised and applied the key, and present synthetic data on the phases.

Descriptions of the Phases

The following descriptions of phases and subphases emphasize characteristics identifiable in samples of refuse comprising a few dozen to a few hundred rim sherds. The phases are presented below in chronological order. Extended discussion of absolute dates is provided in a subsequent section.

Tzompantepec (900–800 B.C.)

Amomoloc Plain constitutes more than 45 percent of the rim assemblage and includes a noticeable component of unslipped, unburnished bowls or dishes, a rare trait in the other phases. After plain vessels, white slips are most common. (The white group of types is ranked second.) Yauhtentzi Red-on-White is negligible, but there are differentially fired vessels (Pascuala Black-and-White) and a distinct, glossy-finish white type in small numbers (Ceniza White). The rims of bowls and dishes tend to be unmodified and direct; in our sample, white B2 dishes constitute more than 5 percent all rims, a pattern seen in no other unit (Figure 11.2i). Simple rounded-walled bowls and dishes (B1, B4, and B5; Figure 11.2g) are particularly common, as noted by García Cook and Merino Carrión (1988:276), but among our samples that trait is not always reliable in distinguishing Tzompantepec from Tlatempa. More important is the presence of *both* flat-based and rounded-based dishes, the former with outsloping walls and direct rims. Flat-based dishes are essentially absent in Tlatempa, Texoloc, and Tezoquipan. Among individual serving vessels, dishes and bowls with a direct rim (B1 and B2) rank above any other. The characteristic Tzompantepec olla has an outcurving neck and an exteriorly thickened rim (O1-2; Figure 11.2a–b). Figurines are common in Tzompantepec but heterogeneous. The Amomoloc type, with coffee-bean eyes, is most frequent (Figure 11.2k). Crude, seated matrons are also present. Cuatlapanga figurines—or C1 variants more generally—are present but are not the predominant type.

We are confident that what we have identified is Tzompantepec as defined by García Cook and Merino Carrión (1988:276–278), but it needs to be remembered that we have only a single refuse sample. That unit lacks the large red tecomates described by García Cook and Merino Carrión, but that is probably a sampling issue since we have those from Early Tlatempa units. We report the same prominence of rounded-walled bowls and tecomates noted by García Cook and Merino Carrión but find a variety of other forms not mentioned in their description, particularly outsloping-walled dishes (B2). García Cook's sample of Tzompantepec figurines appears to be similar in size to ours. We found 21 anthropomorphic heads and torsos; Trejo (1997:28) mentions 16. There are also some matches (C1 and Tzompantepec 1), despite the lack of coffee-bean eyes among the six heads illustrated by Trejo and/or García Cook and Merino Carrión.

Tlatempa (800–650 B.C.)

White slips—often with excised and/or incised decoration—are characteristic of this phase (Figure 11.3). The white group ranks first, seciond, or third behind only Amomoloc Plain, San José White-and-Brown, and/or Yauhtentzi Red-on-White. Although it is still usually among the top three types, Amomoloc Plain is no longer predominant, constituting between 15 and 35 percent of rims. Yauhtentzi Red-on-White is often also among the top three. San José White-and-Brown is sometimes highly ranked. The modified-rim dish or bowl (B3) becomes

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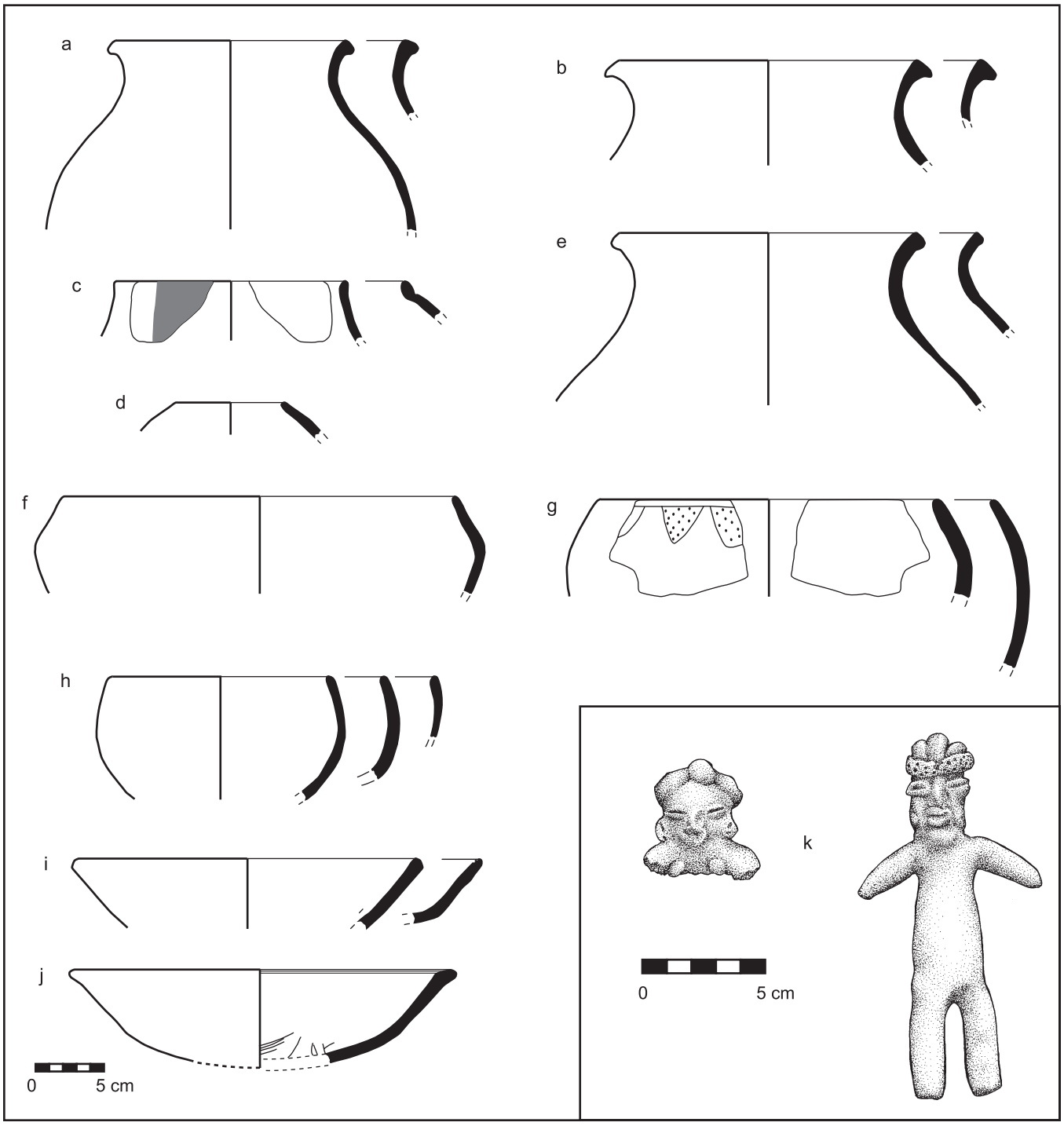

Figure 11.2. Tzompantepec-phase pottery and figurines: (a–b, e) Amomoloc Plain ollas with unslipped burnished exteriors; (c) Pascuala Black-and-White jars (gray indicates smudging); (d) Yauhtentzi White tecomate; (f) Yauhtentzi White bowl with incurving walls; (g) (left to right) Yauhtentzi White convex bowl with grooved and punched decoration on exterior; San José White-and-Brown convex bowl with white-slipped exterior and burnished brown interior; (h) (left to right) Yauhtentzi White convex bowl; Amomoloc Plain convex bowl; Mesitas Brown convex bowl; (i) Yauhtentzi White bowls with outsloping walls and grooved line decoration on interior bases; (j) Yauhtentzi White bowl with outsloping walls and incised decoration on interior rim and base; (k) Amomoloc figurines with coffee-bean eyes.

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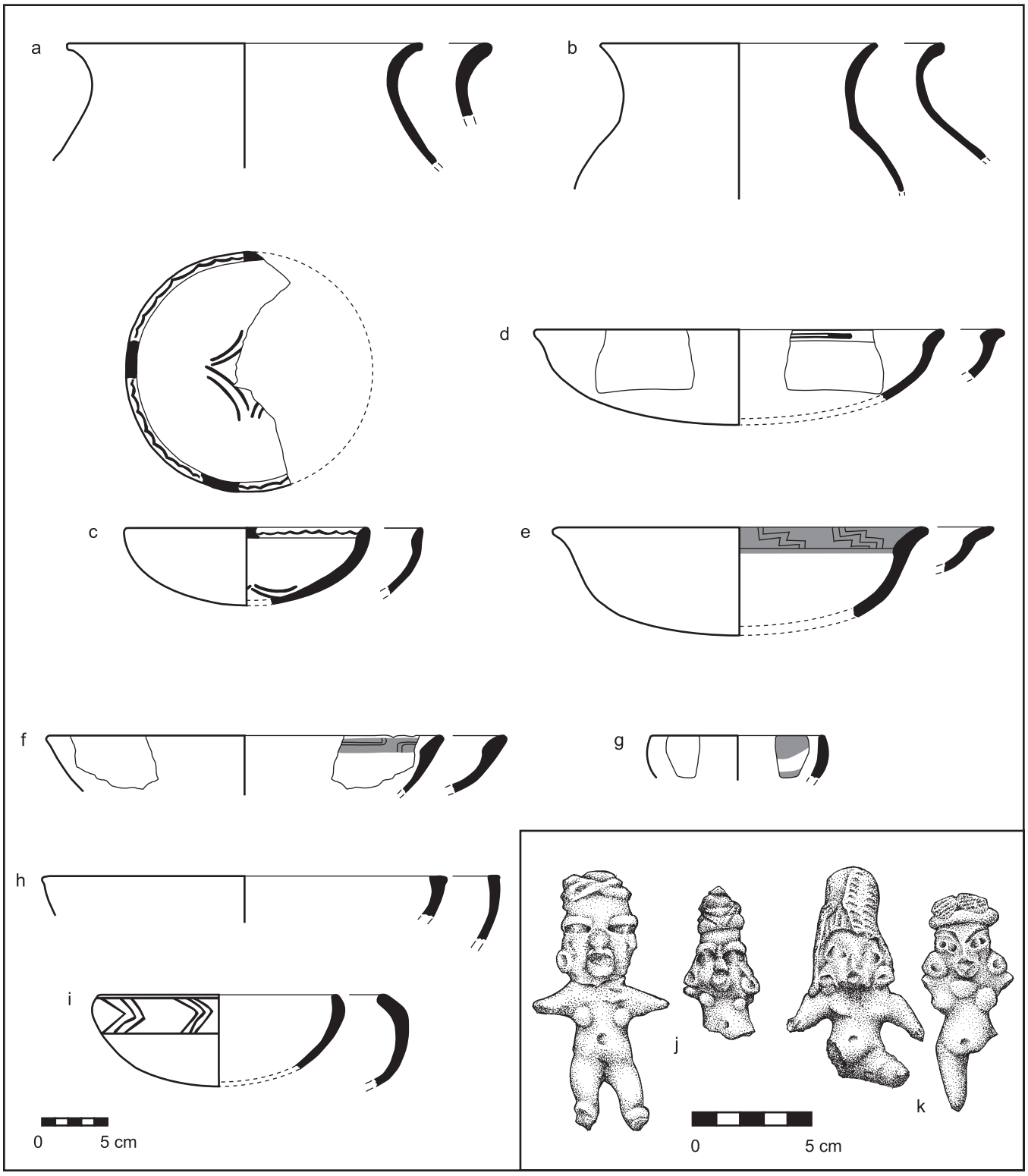

Figure 11.3. Tlatempa-phase pottery and figurines: (a–b) Amomoloc Plain ollas with unslipped burnished exteriors; (c–d) Yauhtentzi White bowls with interior ledges and incised and excised decorations; (e–f) Yauhtentzi Red-on-White bowls with interior ledges and incised decorations; (g) simple Yauhtentzi Red-on-White bowl with interior painted decoration; (h) (left to right) San José White-and-Brown bowl with white exterior and brown interior; Yauhtentzi White bowl; both with flat lips; (i) San José White-and-Brown exterior-excised bowl with white exterior and brown interior; Yauhtentzi White bowl; both with incurving walls; (j) Cuatlapanga-type figurines; (k) Coaxomulco-type figurines.

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the standard individual serving vessel, constituting almost half of the B1–B11 group overall and at least 25 percent in each of our contexts. This is the highest frequency of rim modification in any of our phases. The outflaring everted–rim dish or bowl with an interior ledge (B3-6) is often among the top five vessel forms and may constitute 10 percent or more of all rims (Figure 11.3c–f). Individual serving vessels in general are relatively large in diameter, and therefore the proportion of dishes to bowls is the greatest of any of our phases. In keeping with that, this is also the phase when the most elaborate decoration is to be found preferentially on the inside of vessels. Feet on vessels are rare. The typical olla has a burnished exterior and an outcurving neck with a direct rim (figures 11.3a, 11.3b); compare this with the thickened rims common in Tzompantepec. Figurines are predominantly of the Cuatlapanga type, a combination of attributes from C1 and B in the Vaillant classification (Figure 11.3j). Note the reliance on appliqués (not smoothed in) for the facial features, breasts, and ornaments, including heavy brows and a mouth formed with an impression toward the top of a large appliqué. Cuatlapanga figurines sometimes bear traces of red, white, and black paint on well-smoothed (unslipped, unburnished) surfaces.

For Tlatempa, the match between our material and the vessel forms, decorative modes, figurines, and censers illustrated by García Cook and Merino Carrión (1988:láminas 2–5) is very strong. It should be noted that García Cook and Merino Carrión (1988, 1989) also identify a "Tlatempa del Valle," which is something quite different and will merit discussion in our section on absolute chronology.

The preceding description is worded so as to apply to both Early and Late Tlatempa. Here are the specific characteristics of our two proposed subphases.

Early Tlatempa. Yauhtentzi Red-on-White is more common than Yauhtentzi White. (That is, the ratio of Yauhtentzi Red-on-White to Yauhtentzi White is greater than or equal to 1.0.) San José White-and-Brown is absent. The outflaring everted–rim bowl with thickened interior ledge (B3-6) usually constitutes 5 to 10 percent of rims, but beveled-rim dishes (B3-2) are typically more common. Twenty-eight percent or more of rims are Amomoloc Plain, and among forms, 30 percent of rims are from ollas. (In both cases, the percentages in Late Tlatempa are usually lower.) Typeable figurines are almost entirely Cuatlapanga (along with a heterogeneous hodgepodge of crude figures).

Late Tlatempa. Yauhtentzi White is the predominant serving ware. (That is, the ratio of Yauhtentzi Red-on-White to Yauhtentzi White is less than 1.0.) San José White-and-Brown is usually present and may be one of the most common types. The outflaring everted–rim bowl with interior ledge (B3-6) is more common than the beveled-rim dish (B3-2) and often constitutes 10 percent or even 20 percent of rims. Amomoloc Plain varies from 15 to 25 percent among the types, and less than 30 percent of rims are from ollas. Cuatlapanga continues as the most common figurine type, but it is joined in small numbers by Coaxomulco (Figure 11.3k). Note the smoothed-in breasts and the absence of the heavy Cuatlapanga eyebrow. Hair is often indicated with striations, a rare trait in Cuatlapanga. These are C10 in Noguera's (1956:215) amendation to the Hay–Vaillant scheme.

Texoloc (650–500 B.C.)

The brown and red-and-brown groups are particularly common in this phase. Added together, they rank one or two, in a few units dropping to three but no lower. They include Mesitas and Potrero, two types that reach their highest frequency during Texoloc. In general, however, Texoloc is the phase in which the coexistence of different colors of surface finish is most balanced, with browns, reds, and whites often important in the same sample. Laguna Red may be the most common type, a trait shared with the subsequent Tezoquipan phase, but Xalmonto Red-and-White is a minor type in Texoloc, usually 5 percent or less and generally not among the top five. Within the combined brown and red-and-brown groups, bowls or dishes with outsloping walls and direct rims (B2)—of whatever base form—are rare and form less than 10 percent of rims, in stark contrast to Tenexac units. The proportion of bowls to dishes rises in Texoloc with respect to Tlatempa, but dishes are still very common. Vessels with modified rims (B3) are still the most common category of individual serving vessels, but new forms of rim modification take the lead. Dishes, and more rarely bowls, with sharply downcurving everted rims (B3-4) are the most characteristic of Texoloc, often constituting 10 percent or more of all rims (Figure 11.4f–g). Another form of rim modification popular during Texoloc is an interior thickening found on the inside of the collars of composite silhouette bowls (B6-1b). Composite silhouette dishes and bowls (B6), practically unknown before, make their first strong appearance but are not as overwhelming as in the subsequent Tezoquipan phase. In Texoloc they usually constitute less than 20 percent of rims. In keeping with these changes in vessel form, the preferential locus of decoration begins to shift from the inside to the outside of the serving vessels. Vessel feet are still uncommon. On the exteriors of ollas, burnishing is less common than in Tzompantepec and Tlatempa, and outcurving necks are thicker. Figurines are of the Ehco type (Vaillant's E2), with Gazca, Huehuetitla, and Huiloac present in small numbers (Figure 11.4k–m). Ehco figurines are most characteristically made of a fine, soft, temperless, nearly white paste that contrasts strikingly with contemporaneous pottery.

As was the case with Tlatempa, the match between our samples and "Texoloc" as described and illustrated by García Cook and Merino Carrión (1988:284–291) is very strong, with the sole exception that certain forms they describe as characteristic of the subsequent Tezoquipan phase—particularly red-slipped composite silhouette

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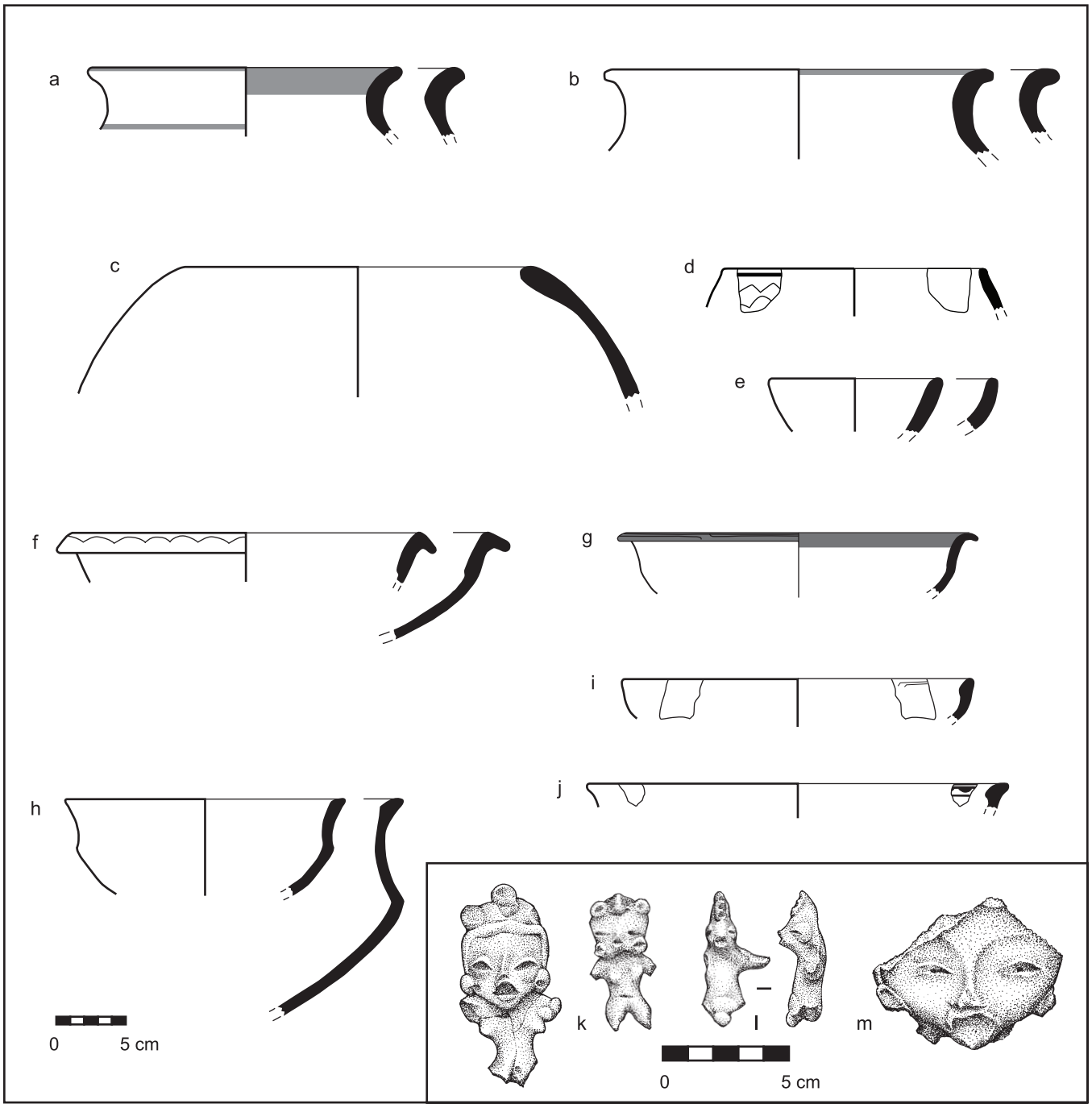

Figure 11.4. Texoloc-phase pottery and figurines: (a–b) Laguna Red-and-Scraped ollas with banded red paint decoration; (c) Laguna Red tecomate; (d) Laguna Red restricted-rim bowl with exterior grooved decoration; (e) Amomoloc Plain bowls; (f) Mesitas Brown bowls with grooved decorations on downcurving rims; (g) Potrero Red-on-Brown bowl with grooved decoration on downcurving rim; (h) (left to right) Yauhtentzi White and Potrero Red-on-Brown composite silhouette bowls; (i) Yauhtentzi White bowl with interior ledge and incised decoration; (j) Yauhtentzi White bowl with interior ledge and excised decoration; (k) Ehco-type figurines; (l) figurine of the Gazca grouping; (m) Huiloac-type figurine.

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dishes and bowls—begin to appear already in our Texoloc samples (at frequencies lower than in the subsequent Tezoquipan phase).

Laguna Texoloc (650–500 B.C.)

We have worked with only partial success to identify Texoloc-phase refuse deposits at La Laguna. Given that the mounds in the site center contain plenty of Texoloc diagnostics in their fill, it is surprising that we have not managed to find indisputable refuse deposits of this phase. It may be that the extent of settlement was small. By relaxing the criteria by which we distinguish Texoloc and Tezoquipan, we are able to identify a few units from La Laguna as likely Texoloc. Given that they display more Tezoquipan-like attributes than units from Tetel or Las Mesitas, we suspect that they date from late in the Texoloc phase. The combined brown and red-and-brown group is ranked 2-3 rather than 1-2. All the reds together—types comprising vessels that are mainly red, including Laguna Red, Xalmonto Red-and-White, and Gazca White-on-Red—do not reach 55 percent of all rims and are usually well below 50 percent. Xalmonto Red-and-White is usually still a minor type but not as clearly as in the case of units we classify as Texoloc at Tetel and Las Mesitas. Palmas Black-and-White is exceptionally common in the La Laguna Texoloc units, more so than in either "standard" Texoloc or later Tezoquipan units. The same is true of composite silhouette bowls with a thickening on the inside of the collar (B6-1b). Both attributes would thus seem to be either local specialties of La Laguna as a site or attributes that peak for a brief time at the transition from Texoloc to Tezoquipan[1]. Bowls and dishes with sharply downcurving everted rims (B3-4) are present but do not make the top five forms.

(Early) Tezoquipan (500 to 400 B.C. or Later)

Laguna Red is ranked one or two (Figure 11.5). Xalmonto Red-and-White is also usually high in rank, often two or three. A group of reds that includes Laguna Red, Laguna Red-and-Scraped, Xalmonto Red-and-White, and Gazca White-on-Red constitutes 55 percent or more of all rims. De Haro Polychrome is often present at 2 to 5 percent. Bowls outnumber dishes by a factor of 10, whereas in previous phases that ratio rarely reached 3. Composite silhouette (B6) bowls are the most common form among dishes and bowls (B1–B11). They are distinctly more common than in the Texoloc phase and come in many shapes and sizes. Many bowls have three feet (Figure 11.5). The feet are most commonly small, conical, and solid, but hollow feet and other shapes are also present. The typical individual serving vessel of the Tezoquipan phase is a composite silhouette bowl with an unmodified rim, slightly outsloping collar, and rounded base. This very specific form (B6-1a) accounts by itself for 14 percent of all vessel forms in Early Tezoquipan. It is on average smaller in diameter than the individual serving vessels of previous phases. Bowls and dishes with sharply downcurving everted rims (B3-4) are usually absent altogether, but they do persist. The focus of all ceramic decoration is now distinctly on the outside of the vessel. On the exterior collar of composite silhouette bowls, there are often incised or painted motifs—or, in the case of Xalmonto, patterned zones of red and white (Figure 11.5g–h). Variations on a step motif are particularly common. Figurines of the Ehco type continue, but there is an increase in Huiloac and Huehuetitla (related to types G, I, and L in the Hay–Vaillant scheme). Those types are similar to Ehco but are burnished and, in the former case, larger than Ehco figurines (Figure 11.5k–l).

It is only after protracted discussion among ourselves that we identify first occupation materials from La Laguna as legitimately "Tezoquipan"—after all, the phase has previously been assigned to 350 B.C. to A.D. 100 (García Cook and Merino Carrión 1988:296) and characterized as the "Protoclassic" of Tlaxcala (Dávila 1996). It remains possible that what we are calling Early Tezoquipan would have been identified as Late Texoloc by García Cook and Merino Carrión (1988:296), who remark of their type Tezoquipan Rojo and its subtypes: "Aunque algunos de estos subtipos se inician desde Texoloc Tardío, por el 500 a.C., su máximo apogeo es durante Tezoquipan." However, the sample we have from La Laguna, which six radiocarbon dates place definitively before 400 B.C., convincingly matches Tezoquipan as described by García Cook and Merino Carrión (1988:296–304). Our reds, taken together, constitute more than 50 percent of the total rim sherds, just as noted by García Cook and Merino Carrión for Tezoquipan Rojo and its subtypes. Further, we can readily link the subtypes of Tezoquipan Rojo to our own markers of the Tezoquipan ceramic complex: Tezoquipan Rojo Interior y Exterior is our Laguna Red; Tezoquipan Rojo Interior Blanco Exterior, Tezoquipan Rojo Interior Blanco Inciso Exterior, and Tezoquipan Rojo Interior Blanco Sobre Rojo Inciso Exterior are all varieties of our Xalmonto Red-and-White. Even the complexly named Tezoquipan Blanco Pintado de Rojo Sobre Rojo Exterior, Rojo Interior is instantly identifiable as a rare decorative variety of Xalmonto that we have not defined as a separate type due to our small sample size. Among these types, we register the same dominance of composite silhouette bowls noted by García Cook and Merino Carrión, and our decorative modes match those they illustrate very satisfactorily. Our Gazca White-on-Red may match García Cook and Merino Carrión's Tezoquipan-Tezoyuca Blanco Sobre Rojo—though composite rather than simple silhouettes dominate our collection as well as that of the very similar type Blanco Pintado Sobre Rojo Pulido at Xochitécatl (Serra Puche et al. 2004:89–92). Finally, our figurines match some (E, G, E-H) but not others (H4 and other H types) identified by García Cook and Merino Carrión (1988:302) for Tezoquipan. We suggest below that this mix of figurines helps establish a Ticomán 2–3

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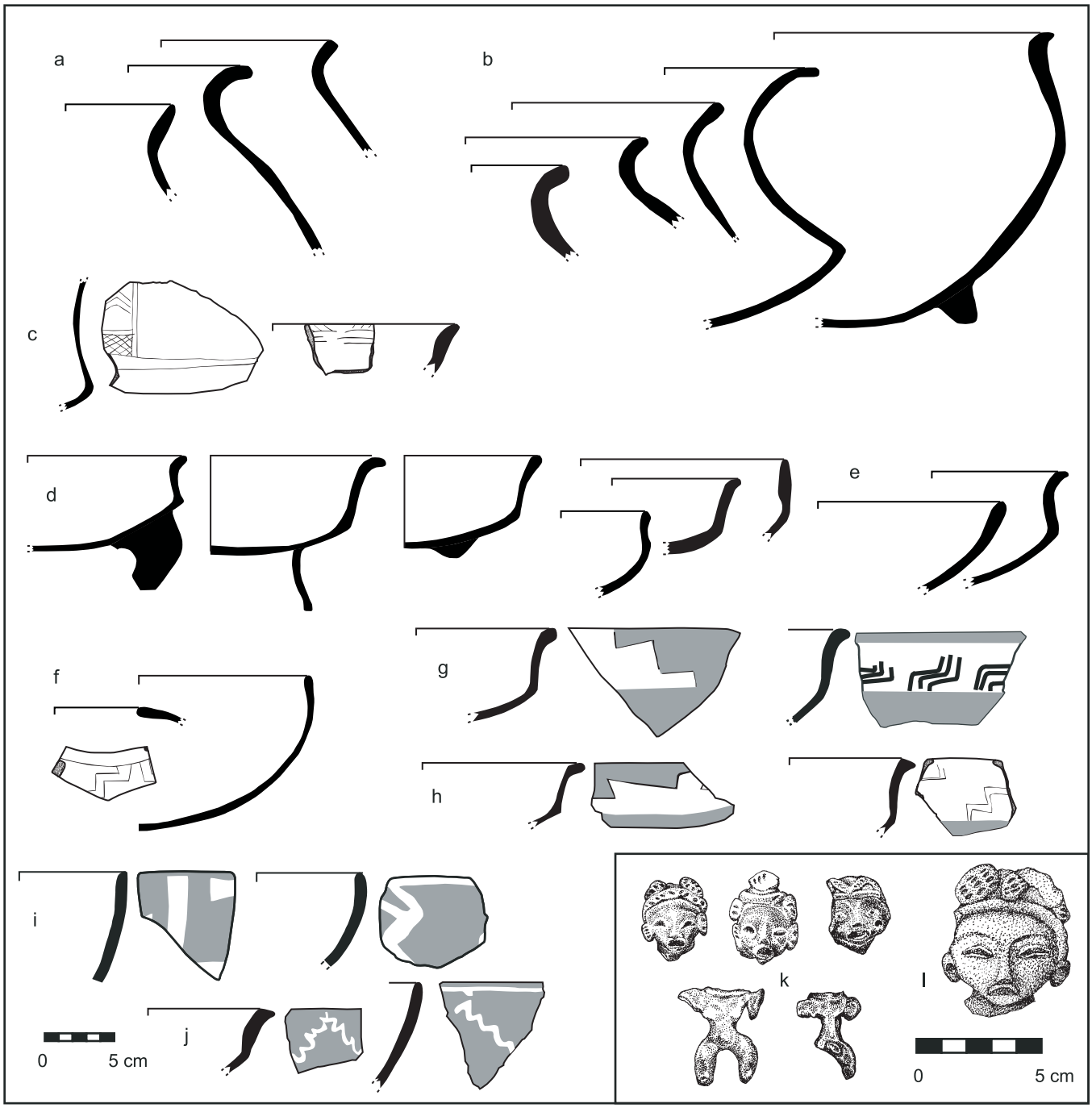

Figure 11.5. Tezoquipan-phase pottery and figurines: (a) Amomoloc Plain ollas; (b) Laguna Red-and-Scraped (left to right): three ollas, shouldered jar with rounded base (Form F2), and composite silhouette basin (Form B8); (c) (left to right) Ardillas Black bowl with exterior incising; Palmas Black-and-White dish with incised interior rim; (d) Laguna Red composite silhouette bowls; (e) Yauhtentzi White: open bowl and composite silhouette bowl; (f) (left to right) Laguna Red: tecomate with exterior incising and hemispherical bowl; (g–h) Xalmonto Red-and-White composite silhouette bowls; (i) De Haro Polychrome: two rounded-walled bowls; (j) Gazca White-on-Red (left to right): composite silhouette dish and rounded-walled bowl; (k) Huehuetitla-type figurines; (l) Huiloac-type figurine.

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correlation—rather than a Tezoyuca–Patlachique correlation—for Tezoquipan.

"Late Tezoquipan" (100 B.C. or Earlier to A.D. 50)

In our usage, this is not a formally defined ceramic complex or phase. It provides us with a term to refer to the first part of the second occupation at La Laguna based on our suspicion that Laguna Red (or variants thereof) was still the dominant pottery type and that the pottery assemblage more generally did not yet seriously diverge from Tezoquipan as defined by García Cook and Merino Carrión (1988). Our evidence on these points appears to be conflicting. One set of samples looks identical to earlier Tezoquipan ceramics, with the only possible difference being a more common occurrence of very large (rim diameter between 25 and 45 cm) red bowls. Another sample diverges decidedly from Tezoquipan patterns and includes numerous Tenexac attributes. We review the evidence toward the end of this chapter.

Tenexac (A.D. 50–200)

The brown and red-and-brown groups considered together are again important in this phase, ranked one or two (Figure 11.6). The browns are of Metl rather than Laguna ware (see Chapter 9). Metl Brown sherds are harder than those of Mesitas Brown, and the polished surface has a waxy feel. The walls are often thinner than in earlier phases, but larger burnished brown (unslipped) bowls do have thick walls. The tone of the browns ranges from tan to dark brown or even black (see discussions of Metl Brown and Metl Burnished Buff in Chapter 9). Yano Polychrome, a new type, appears in low frequencies. In contrast to Texoloc, bowls and dishes with outsloping sides and direct rims (B2) are common, usually 40 percent or more of rims within the brown and red-and-brown groups combined and more than 25 percent of all bowls, B1–B11 (Figure 11.6d). Brown B2 dishes usually have flat bases (B2-3), a trait that has been extraordinarily rare since Tzompantepec. They lack feet or other supports, though it appears that use of supports continued on red-slipped, composite silhouette bowls. The typical individual serving vessel of Tenexac would thus be a B2 bowl. It seems to be followed by B6 as a close second, though some of these may actually be carry-ups. In Tenexac, ollas with short outcurving necks often have a noticeable break in the interior profile of the neck (Figure 11.6a); there are also ollas with tall outflaring or outcurving necks. Figurines seem to have been produced only in small numbers at this time; many of our figurines from deposits of this age at La Laguna are probably carry-ups from earlier deposits. Tenanyecac and Teotihuacan 1 figurines (Figure 11.6j–k) are diagnostic of the Tenexac phase; their presence in a unit is significant, but their absence means little.

The shift away from Laguna ware in Tlaxcala has been placed at the beginning of the Classic by Snow (1966) and García Cook and Merino Carrión (1988). García Cook and Merino Carrión (1989; García Cook 1974; Merino Carrión 1989) identify at least two ceramic complexes in Classic-period Tlaxcala—Tenanyecac and Teotihuacan—the implication being that Teotihuacan directly controlled a corridor in which material culture links with the metropolis were particularly strong. What we identify as Tenexac has numerous points of similarity with Tenanyecac as described by García Cook and Merino Carrión (1988:304–310). We opt instead for a new local name for the ceramic complex, a decision that also helps free us to scrutinize our inconclusive evidence concerning dates for the associated phase.

Key for Classification of Units

As is apparent from the foregoing descriptions, we conceive the material attributes of phases as *polythetic* sets. No single attribute is decisive. Classification of a unit of refuse involves the weighing of multiple pieces of information concerning pottery types, vessel forms, and figurines. Given a high level of noise in the form of variation between near-contemporaneous units, it is legitimate to wonder: How replicable and robust are such intuitive assessments of the relative importance of multiple variables? In an effort to demonstrate robustness and increase replicability, we devised the key shown in Figure 11.7.

Note that Figure 11.7 itself does not provide all the necessary information for classification of units. Instead it directs the user to consider specific phases based on descriptions provided in the previous section. Thus it preserves the polythetic character of the classification while isolating certain attributes that prove useful in distinguishing the groups we identified on the sorting table. The idea is not to spit out a single answer but rather to provide the analyst with a basis to make a judgment call. Each path through the key ends with a suggested phase for the unit being considered. The characteristics of that unit are to be compared to material attributes associated with the suggested phase. If observed characteristics do not match those of the suggested phase, it is likely that the unit in question includes a mixture of materials from more than one phase.

Use of the key—which requires reference to descriptions of phases presented above as well as to Figure 11.7—requires an analysis of rim sherds, diagnostic body sherds, and figurines (heads and bodies). It will not work on very small samples. We required 35 identifiable rim sherds for inclusion in our chronological sample, though we made exceptions in the cases of features A48 and A49 at Amomoloc. Sample A49-1S, with 32 rim sherds, can clearly be classified as Early Tlatempa and thus expands our sample from that subphase. Sample A48-1S, although quite small at 24 rim sherds and just two limb fragments of figurines, has a known stratigraphic relation with Feature A54, a piece of information too valuable to discard from the analysis.

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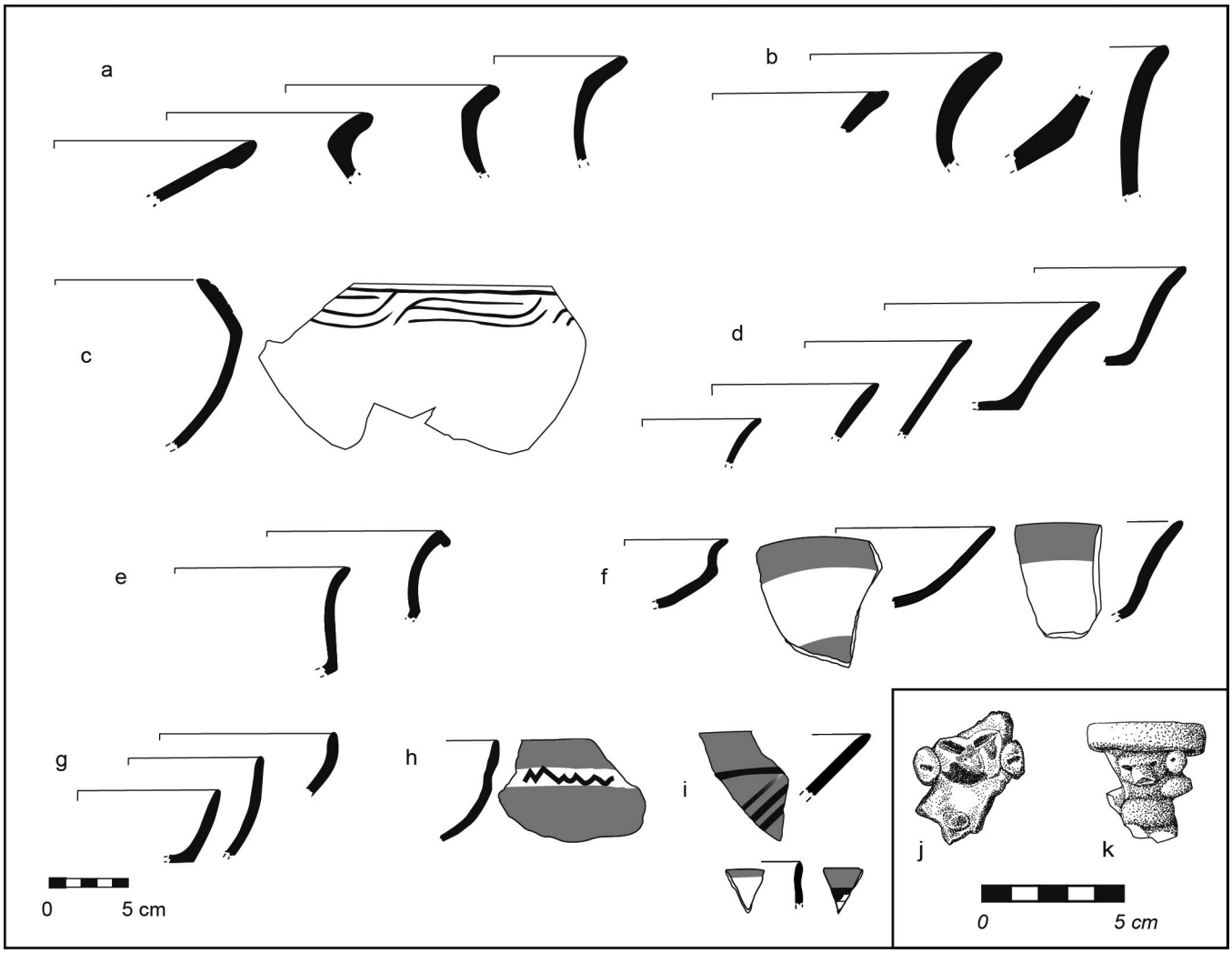

Figure 11.6. Tenexac-phase pottery and figurines: (a) Amomoloc Plain (left to right): comal; three ollas with breaks in interior profile of neck; (b) Metl Burnished Buff (left to right): wedge-rim olla, olla with tall flaring neck, shoulder and rim of large composite silhouette basins; (c) Metl Brown restricted-orifice bowl with exterior incising; (d) bowls with outsloping walls and flat bases (left to right): four Metl Brown; one Metl Burnished Buff; (e) Metl Brown composite silhouette bowls with rounded bases; (f) Gonzalez Red-on-Buff (left to right): composite silhouette bowl with slipped-red interior and exterior collar, flat-based open bowl with red-and-brown interior, and composite silhouette bowl with red-and-brown interior; (g) Metl Brown bowls with rounded walls; bases flat or uncertain; (h) Xalmonto Red-and-White bowl with incised white band on exterior; (i) Yano Polychrome outsloping-walled dish (top) and bowl (bottom); (j) Tenanyecac-type figurine; (k) Teotihuacan 1 figurine.

To use the key it is first necessary to summarize the data in a fashion that is stable enough to form the basis of chronological conclusions replicable among different interpreters. In the case of pottery types, we found inter-observer differences in identifying some of the types (particularly Mesitas versus Metl Brown). Further, when different analysts studied different parts of the sequence, they were not always on the lookout for minor types characteristic of other parts of the sequence. For instance, Rodríguez and Borejsza, in studying Tezoquipan materials, were not aware of Jennifer Carballo's type Ceniza White. This is probably not a problem since Ceniza White is a minor type of the Tzompantepec phase, but it seemed best to be certain. We therefore use the combination of types and groups of types shown in Table 11.1 for our seriations. We consider all white slipped together, all burnished brown or brown slipped together, and all red-on-brown slipped or red-on-well-burnished brown together. In the last two cases, note that we distinguish (well) burnished and/or slipped brown from scraped buff (typically ollas) and also from Laguna Red variants with exterior unslipped areas. Varieties of Laguna Red are also considered together. Once this more stable data set has been created, pottery type information is prepared for analysis through

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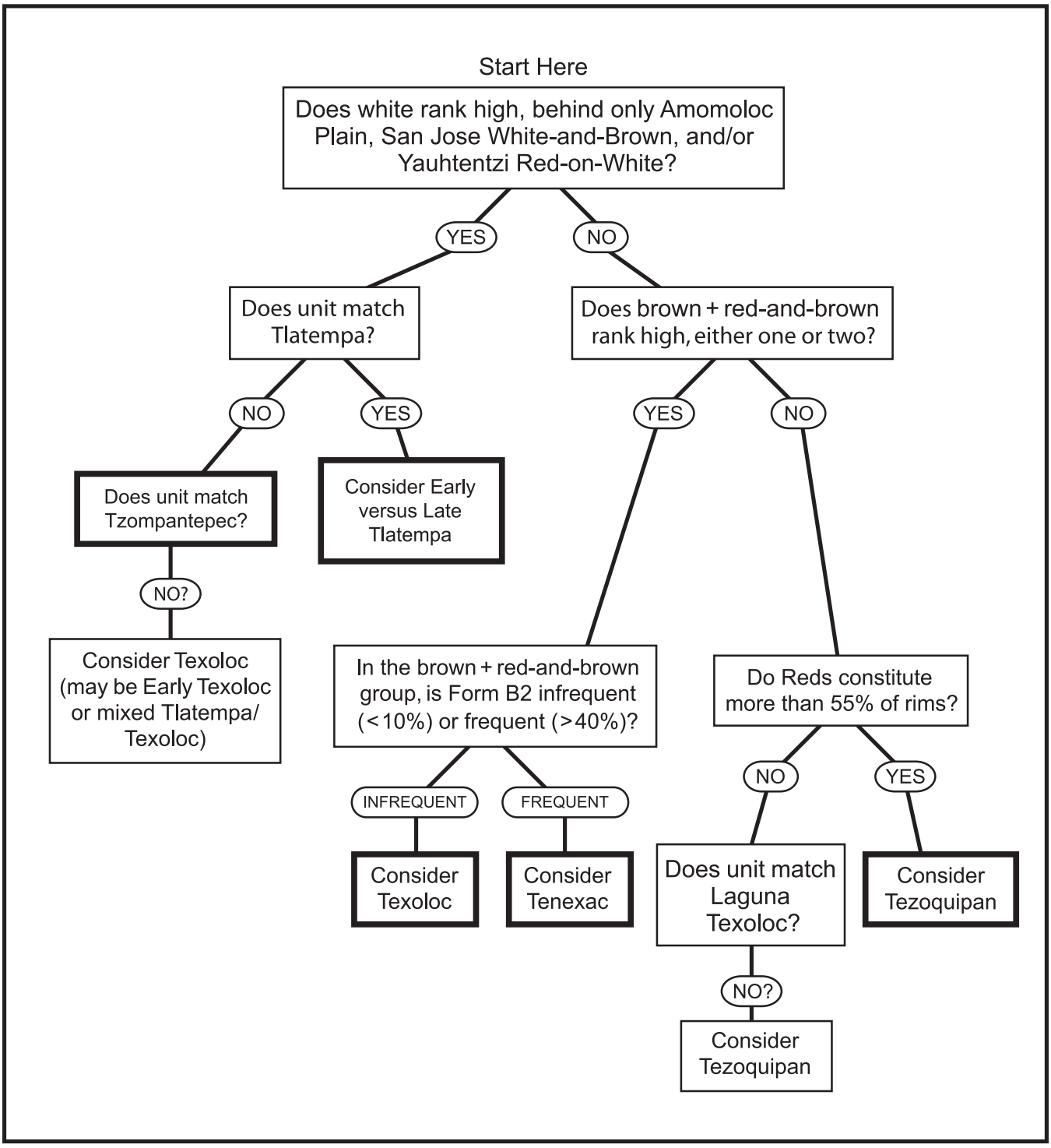

Figure 11.7. Key for classification of refuse contexts.

computation, by unit, of percentages of certain groups of types (white, brown, red-on-brown, and Laguna Red broadly defined) and the remaining types (such as Pascuala Black-and-White or San José White-and-Brown). The types/groups of types are then ranked by percentage. Because of considerable unit-to-unit variation in brown and red-on-brown in the Texoloc phase, these two categories are combined at certain points in the key, requiring computation of the rank of that new grouping with respect to the other types. Also, for the purposes of sorting Tezoquipan from Texoloc, it is helpful to identify a red group that includes Laguna Red, Laguna Red-and-Scraped, Xalmonto Red-and-White, and Gazca White-on-Red.

We have used only the more common vessel forms of a

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Table 11.1. The Stable Set of Types and Groups of Types Used for Seriation.

Code	Type, or Group with Constituent Types
01AmPlain	Amomoloc Plain
02WhiteGrp	White Group, includes: Ceniza White Yauhtentzi White
03YauR/W	Yauhtentzi Red-on-White
04SJW/B	San José White-and-Brown
05PasBW	Pascuala Black-and-White
06PalBW	Palmas Black-and-White
07fGray	Fermín Fine Gray
08ArdBl	Ardillas Black
09B-Burn	Brown-Burnished Group, includes: Mesitas Brown Mesitas Fine Brown Metl Brown Metl Burnished Buff
10BurnRB	Red-on-Burnished Brown Group, includes: Potrero Red-on-Brown Potrero Streaky Red-on-Brown Laguna Dark Red-on-Buff Tejales Incised González Red-on-Brown
11Xilo	Xilomantla Polychrome
12LagR-Grp	Laguna Red Group, includes: Laguna Red Laguna Dark Red Laguna Red-and-Scraped
13XalRW	Xalmonto Red-and-White
14Gaz	Gazca White-on-Red
15DeH	De Haro Polychrome
16ApizOr	Apizaco Orange
17Yano	Yano Polychrome

given phase as markers because of the variation from unit to unit already mentioned. Another issue that complicates consideration of vessel form is the category of unidentified bowls (B in our data set). As composite silhouette dishes and bowls expand as a percentage of the assemblage, the number of unidentified bowls rises. This may partly be the result of inter-observer differences, but the main problem is that it is impossible to know whether or not small rim fragments are from composite silhouette vessels. We have generally eliminated unidentified bowls from our calculations of percentages and rankings of vessel forms—it would be unhelpful to claim that "Unidentified Bowl" was the top-ranked vessel form—but it is important to remember that this decision affects samples from different phases in different ways. (We do not eliminate unidentified bowls when the question at hand concerns a larger classificatory level, such as the percentage of ollas in the sample.)

The classifications of units in the Chronological Sample to the basic phases (Tzompantepec, Tlatempa, Texoloc, Early Tezoquipan, and Tenexac) and subphases (Early versus Late Tlatempa), provided in Table 8.1, are those yielded by application of the key. As we have pointed out, "Late Tezoquipan" is based on our stratigraphic assessments; most units of the Chronological Sample that should be Late Tezoquipan come out as Early Tezoquipan in application of the key, while one Late Tezoquipan unit (Lag-H1) seriates with Tenexac. Feature C133 is a unique assemblage that has not been incorporated into the key; it comes out as perhaps Tenexac but with a weak match.

Discussion of Interpretive Issues

The first part of the sequence proved relatively easy to define at our three small sites, perhaps facilitated by the short, partially overlapping occupation spans: Amomoloc was occupied in the Tzompantepec and Tlatempa phases, Tetel in Tlatempa and Texoloc, and Las Mesitas in Texoloc. Those occupations together spanned approximately 900 through 500 B.C. The rest of the sequence is represented in our excavated deposits only at La Laguna. It has proven more difficult to work out, partly due to the unusual occupation history of the site. As far as we can tell, settlement at La Laguna expanded rapidly from about 500 B.C. Then, around 400 B.C., the site was practically abandoned, only to be settled again around 100 B.C. Around A.D. 150 or 200, the site was abandoned a second time. It has proven difficult to trace the sequence of changing material culture during the second of the two pulses of occupation. Interpretive issues that merit comment here are our division of Tlatempa into subphases and the lingering puzzle of La Laguna.

Early and Late Tlatempa. With the identification of the Tzompantepec deposit in Feature A46, we noticed that certain Tlatempa features at Amomoloc (A22, A23, A47) had more Tzompantepec-like attributes than others (A60, A64, A67, A68, A73). Ceniza White was present in Feature A22; Pascuala Black-and-White was present in A22, A23, and A47; and ollas, though less common than in Tzompantepec, nevertheless formed a large portion of the assemblage in A22, A23, and A47. Those observations led to the identification of other attributes shared among the "early" group, particularly a prominence of Yauhtentzi Red-on-White over Yauhtentzi White but also high percentages

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of Amomoloc Plain and high frequencies of beveled-rim bowls (B3-2). The "late" group was instead characterized by predominance of Yauhtentzi White, presence of San José White-and-Brown, higher frequencies of outcurving everted rims with interior ledges (B3-6) than of beveled rims (B3-2), and often the presence of Coaxomulco figurines. One of the samples (A73-2S) also contained an Ehco figurine, typical of the subsequent Texoloc phase. These patterns form the basis of our proposed subphase division within Tlatempa.

Among the contexts in the Chronological Sample, five can be readily classified as Early Tlatempa (A22-2S, A23-2S, A47-1S, A49-1S, and A57-2S); another eight are classifiable as Late Tlatempa (A4-4S, A48-1S, A60-1S, A64-2S, A67-1S, A68-4S, A73-2S, and A74-1S). The proper classification of four samples is less clear. Samples A63-2S and A71-1S are dominated by Yauhtentzi White but otherwise exhibit Early Tlatempa attributes. (San José White-and-Brown is absent; Amomoloc Plain comprises 31 and 36 percent of types, respectively; and Coaxomulco figurines are absent.) Sample A54-2S has a high percentage of Amomoloc Plain and a matron figurine but otherwise exhibits mainly late traits. Sample A12-2S is dominated by Yauhtentzi Red-on-White, and the frequency of bowl form B3-6 is the same as that of B3-2—but otherwise the unit, like A54-2S, exhibits late traits. We have classified A63-2S and A71-1S as "early" and A54-2S and A12-2S as "late." We will return to these specific units in our discussion of the other seriations.

The two subphases should be understood as tentative proposals that need to be tested on more samples. The distinctions we make are only barely above the level of synchronic noise in the data. We have only one firmly established stratigraphic relationship, and that is consistent with our suggestions: Feature A48 is a later feature that cuts into an earlier A54. Despite the small sample size, Unit A48-1S has several strong Late Tlatempa markers, including dominance of Yauhtentzi White, presence of San José White-and-Brown, and salience of B3-6 over B3-2. Classification purely on the basis of its material attributes would place it broadly contemporary with or possibly later than Unit A54-2S—consistent with the stratigraphy.

Texoloc, Tezoquipan, and Tenexac at La Laguna. In the original periodization of García Cook and Merino Carrión (1988), the first occupation at La Laguna should fall in the Texoloc phase (their dates 800–350 B.C.) and the second occupation in the Tezoquipan phase (their dates 350 B.C.–A.D. 100). Yet despite radiocarbon dates that place it before 400 B.C., the pottery in most of our refuse samples from the first occupation is a good match for Tezoquipan as described by García Cook and Merino Carrión. Texoloc—again following the description of García Cook and Merino Carrión (1988), bolstered by our good matches at Tetel and Las Mesitas—proves surprisingly elusive among the refuse samples that we have excavated at La Laguna. We have decided to identify the abundant set of materials from the first occupation that look Tezoquipan as, indeed, Tezoquipan. We refer to these first-occupation units as Early Tezoquipan. In terms of sheer quantity, the Early Tezoquipan ceramics from La Laguna constitute the largest assemblage recovered at any of the four sites and the one with largest number of whole or refittable vessels. The contexts from which they have been recovered are numerous, and we are confident that the Early Tezoquipan of La Laguna is not a matter of a few anomalous features. Our rare Texoloc features at La Laguna, only subtly different from (Early) Tezoquipan, probably date from late in the Texoloc phase.

The material culture of the second occupation at La Laguna proves more of a puzzle. In areas D, H, and I we have good evidence of a distinctive material culture from the second occupation—the Tenexac phase. However, radiocarbon dates directly associated with these materials suggest that Tenexac characterized only the latter part of the second occupation. The material culture of the first half or even two-thirds of the second occupation thus remains undefined. Unfortunately, we have no good sample of domestic debris with an associated radiocarbon date that falls within the early portion of the second occupation.

We do have relevant evidence from areas B, F, and H, but it does not seem to add up in a consistent way. Features B61, C120, C121, and C132 were pits that stratigraphic analysis places in the second occupation, but the materials they contained are indistinguishable from Early Tezoquipan materials, and a single radiocarbon date from C120 would, if accepted, place that pit in the *first* instead of second occupation. Feature C133, dug from the same surface as C120, C121, and C132, contained refuse seemingly related to Tenexac but without the most prominent phase marker in all other Tenexac units—the flat-based bowl with outsloping sides and a direct rim. Samples of mound fill and refuse in Area H (Lag-H1 and Lag-H2), while only indirectly dated based on architectural associations, raise the possibility of the appearance of Tenexac markers before A.D. 50/100 and potentially even at the beginning of the second occupation. We reserve further discussion of these issues until the end of this chapter, where we review all available evidence, including appropriate correlations with adjacent regions.

Patterns of Change in Pottery

In this section we present a series of tables that trace changes in pottery types and vessel forms over the course of the occupation. Equivalent tables for figurines are provided in Chapter 10 and are not repeated here.

The tables provide summary statistics derived by pooling units of the Chronological Sample by phase (or subphase). They register general patterns of change throughout the occupation of our sites. They also provide a basis for assessing the degree to which our classifications suc-

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cessfully isolate historically specific dimensions of material culture—an assessment we make by looking for conformity with or deviation from the form of the battleship curve. In examining the tables, it is important to remember that "Late Tezoquipan" is based on stratigraphic arguments, not distinctions in material culture and that there would appear to be a gap of at least 300 years between Early Tezoquipan and "Late Tezoquipan."

Tables 11.2 and 11.3 provide information on ceramic types, the former representing the types and groups of types actually used in working out our seriations and the latter representing instead the complete set of types. Our commentary focuses on Table 11.3. Frequencies of most of our minor types take the form of battleship curves satisfactorily. Ceniza White, Potrero Streaky-Red-on-Brown, Pascuala Black-and-White, Mesitas Fine Brown, and Laguna Dark Red make relatively brief appearances early in the sequence, while Apizaco Orange, Metl Burnished Buff, Gonzalez Red-on-Brown, and Yano Polychrome are late types that appear in the Tenexac phase (or in Unit Lag-H1, assigned on the basis of stratigraphy to Late Tezoquipan). Gazca White-on-Red is a Texoloc–Tezoquipan type that exhibits a very satisfying battleship curve. Four other minor types, Xalmonto Red-and-White, Ardillas Black, Palmas Black-and-White, and De Haro Polychrome, are less satisfying in this regard since their continued presence in the Tenexac phase is something of a surprise. Carry-ups are a complicating factor in the Tenexac middens, and there may also be some problems of recognition in the case of Ardillas Black, for instance, since the Tenexac examples could possibly be very dark Metl Brown.

Although San José White-and-Brown exhibits a clear battleship curve, we are somewhat puzzled by the length of its tail, since the combination of a white exterior and a brown interior seems unusual enough to exhibit historical specificity. It appears that after a strong initial pulse in Late Tlatempa (with distinctive forms and incised/excised decorative regime), this general pattern of white exterior/brown interior persisted for a surprising length of time in the study area.

Fermín Fine Gray exhibits no particular temporal form, probably because this is something of a catch-all category for imported vessels that may actually be from a variety of locations. Given our tiny sample size, we have not tried to subdivide this group into multiple types. Tejales Incised, a decorative variant of vessels with surface finishes intermediate between Potrero Red-on-Brown and Laguna Red-and-Scraped, was a designation used only by Rodríguez and Borejsza in their study of Early Tezoquipan materials from La Laguna and Texoloc materials from Las Mesitas.

Among the more common types, two deviations from the expected form of the battleship curve are readily explicable. Unslipped plainware, mainly consisting of ollas, proved difficult to differentiate on the basis of paste and

Table 11.2. Pottery Types or Groups of Types Used in Chronological Analysis: Relative Percentages by Phase (or Subphase).

Stabilized Types	Tzompantepec	Early Tlatempa	Late Tlatempa	Texoloc	Texoloc at Laguna	Early Tezoquipan	Late Tezoquipman[a]	Tenexac	Total
01AmPlain	50.0	31.1	22.4	9.0	18.2	13.3	11.8	12.8	18.0
02WhiteGrp	33.3	24.1	37.0	17.6	3.4	4.6	3.0	1.5	16.0
03YauR/W	.9	25.7	18.6	5.9	.0	.0	.0	.0	8.6
04SJW/B	.0	.0	6.4	2.7	1.2	1.0	2.0	.2	2.2
05PasBW	3.7	.4	.1	.1	.0	.1	.0	.0	.2
06PalBW	.0	.0	.0	3.8	10.2	2.6	3.8	.9	1.9
07fGray	.0	.0	.3	.0	.0	.1	.0	.1	.1
08ArdBl	.0	.0	.0	.0	8.3	4.4	4.5	1.6	1.8
09B-Burn	8.3	8.5	7.0	15.8	9.3	7.1	12.3	29.4	13.2
10BurnRB	3.7	2.7	2.8	10.4	6.5	2.4	7.3	6.3	4.8
11Xilo	.0	.0	.0	.1	.0	.0	.0	.0	.0
12LagR-Grp	.0	7.1	5.3	30.3	25.0	46.7	40.5	40.9	26.4
13XalRW	.0	.4	.2	2.8	6.2	11.5	7.5	3.4	4.0
14Gaz	.0	.0	.0	1.4	4.3	2.8	1.5	.2	1.0
15DeH	.0	.0	.0	.0	7.1	3.5	4.3	1.9	1.6
16ApizOr	.0	.0	.0	.0	.3	.0	1.0	.6	.2
17Yano	.0	.0	.0	.0	.0	.0	.5	.2	.1
Total rims	108	931	1,477	852	324	1,214	398	1,289	6,593

[a] Late Tezoquipan = Tezoquipan assigned stratigraphically to the second occupation at La Laguna.

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Table 11.3. All Pottery Types: Relative Percentages by Phase.

Type or other grouping	Tzompantepec	Early Tlatempa	Late Tlatempa	Texoloc	Texoloc at Laguna	Early Tezoquipan	Late Tezoquipman[a]	Tenexac	Total
Amomoloc Plain	50.0	31.1	22.4	9.0	18.2	13.3	11.8	12.8	18.0
Apizaco Orange	.0	.0	.0	.0	0.3	.0	1.0	0.6	0.2
Ardillas Black	.0	.0	.0	.0	8.3	4.4	4.5	1.6	1.8
Ceniza White	1.9	.1	.0	. 0	.0	.0	.0	.0	.0
De Haro Polychrome	.0	.0	.0	.0	7.1	3.5	4.3	1.9	1.6
Fermín Fine Gray	.0	.0	.3	.0	.0	0.1	.0	0.1	0.1
Gazca White-on-Red	.0	.0	.0	1.4	4.3	2.8	1.5	0.2	1.0
González Red-on-Brown	.0	.0	.0	.0	.0	.0	.0	4.4	0.9
Laguna Dark Red	.0	3.4	2.2	2.6	.0	.0	.0	.0	1.3
Laguna Dark Red-on-Buff	.0	1.4	1.8	.0	.0	.0	.0	.0	0.6
Laguna Red	.0	1.1	1.4	12.7	14.5	27.3	27.6	23.5	14.1
Laguna Red-and-Scraped	.0	2.6	1.8	15.0	10.5	19.2	12.8	15.5	10.6
Mesitas Brown	8.3	7.9	5.1	15.5	9.3	5.8	12.3	1.6	7.0
Metl Brown	.0	.0	.0	.0	.0	.2	.0	15.9	3.1
Metl Burnished Buff	.0	.0	.0	.0	.0	.0	.0	1.2	0.2
Mesitas Fine Brown	.0	.5	1.8	.4	.0	1.2	.0	.0	0.7
Palmas Black-and-White	.0	.0	.0	3.8	10.2	2.6	3.8	0.9	1.9
Pascuala Black-and-White	3.7	.4	.1	.1	.0	.1	.0	.0	0.2
Polychrome (unidentified)	.0	.0	.0	.0	.0	.0	.0	0.1	.0
Potrero Red-on-Brown	.0	.8	.9	9.9	6.5	2.1	7.3	0.7	2.9
Potrero Streaky Red-on-Brown	3.7	.5	.1	.0	.0	.0	.0	.0	0.2
San José White-and-Brown	.0	.0	6.4	2.7	1.2	1.0	2.0	0.2	2.2
Tejales Incised	.0	.0	.0	.6	.0	.4	.0	.0	0.2
Unidentified-black	.0	.0	.0	.0	.0	.0	.0	0.2	.0
Unidentified-black/red	.0	.0	.0	.0	.0	.1	.0	.0	.0
Unidentified-brown	.0	.0	.0	.0	.0	.0	.0	10.6	2.1
Unidentified-red	.0	.0	.0	.0	.0	.0	.0	1.9	0.4
Unidentified- red/brown	.0	.0	.0	.0	.0	.0	.0	1.2	0.2
Unidentified-white	.0	.0	.0	.1	.0	.3	.0	0.7	0.2
Xalmonto Red-and-White	.0	.4	.2	2.8	6.2	11.5	7.5	3.4	4.0
Xilomantla Polychrome	.0	.0	.0	0.1	.0	.0	.0	.0	.0
Yano Polychrome	.0	.0	.0	.0	.0	.0	0.5	0.2	0.1
Yauhtentzi Red-on-White	.9	25.7	18.6	5.9	.0	.0	.0	.0	8.6
Yauhtentzi White	31.5	24.0	37.0	17.5	3.4	4.3	3.0	0.8	15.7
Total N	108	931	1,477	853	324	1,233	398	1291	6621
Type/color unidentified				24	1	46	3	227	301

[a] Late Tezoquipan = Tezoquipan assigned stratigraphically to the second occupation at La Laguna.

surface characteristics. We assigned it mainly to a single type, Amomoloc Plain. Overall, the type exhibits a gradual decline over the course of the occupation, punctuated by a marked but temporary dip in the Texoloc samples from Tetel and Las Mesitas. The reason for that dip is that Texoloc ollas were often given a band of red slip around the interior rim and/or on the neck; they are therefore classified as Laguna Red-and-Scraped. Another case of oscillating frequency is Yauhtentzi White, which declines from Tzompantepec to Early Tlatempa and then rises again. The reason for that pattern is the popularity, during Early Tlatempa, of the use of red slip atop some white vessels. We distinguish what was basically a decorative variant of Yauhtentzi White as a distinct type, Yauhtentzi Red-on-

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White. The two types considered together exhibit a clear battleship curve.

The remaining types are those for which we encountered the most problems of recognition and/or definition. In Chapter 9 we discussed our realization rather late in the analysis that different investigators were using different criteria for distinguishing Laguna Red from Laguna Red-and-Scraped; it proved impossible retroactively to fully coordinate the basis for separation of the two types between the different data sets. Still, although the issue is further complicated by the hiatus at La Laguna and our inability to describe the material culture of the initial reoccupation, it is clear that there was a long-lasting tradition of red-slipped pottery in our study area, with strong continuity of surface paste and characteristics.

Tables 11.4, 11.5, and 11.6 examine different aspects of vessel form, and Table 11.7 provides counts for all the form codes (described in Chapter 9) in case readers would like to explore additional dimensions of vessel form. Table 11.4 examines basic vessel forms. Ollas decline as a percentage of the assemblage from Tzompantepec to Late Tlatempa and then stabilize. Somewhat to our surprise, tecomates do not exhibit a pattern of decline but persist at a low frequency throughout the sequence. Bowls and dishes are the predominant form throughout, plates and other forms are exceedingly rare, and comales show up only at the very end of the sequence.

In Table 11.5, an examination of the relative percentages of different bowl forms, several diachronic patterns appear. One interesting point about this table concerns our Laguna Texoloc, the probable late-Texoloc refuse samples that we extracted from Tezoquipan with some difficulty. Here they fall in with Texoloc at Tetel and Las Mesitas in terms of the strong presence of modified-rim bowls (B3) and the still modest presence of composite silhouettes (B6).

The prominence of simple, rounded-walled, direct-rim forms (B1, B4, B5) in Tzompantepec and their gradual decline through Texoloc comes out clearly in the pooled data, despite the considerable variation we found from unit to unit. Outsloping walls with direct rims (B2) are instead characteristic of both the beginning of the sequence (Tzompantepec) and the end (Tenexac); those in Late Tezoquipan are all from Lag-H1, the single unit that seriates with Tenexac. Dishes with rounded or outcurving walls, rounded bases, and modified rims (B3) are particularly characteristic, instead, of the Tlatempa and Texoloc phases. Sometimes those have a gentle shoulder and are thus technically "composite silhouette" (figures 11.3d–f, 11.4f–g), but they do not take what we refer to as the typical composite silhouette form (B6), in which the collar is outsloping to vertical (figures 11.4h, 11.5d, 11.5g, 11.5h). B6 forms are very rare in Tlatempa; they increase markedly in Texoloc before reaching a peak of popularity in Tezoquipan. The form we consider to be a cup (B10) is strongly associated with Tlatempa and appears to have constituted a specialized component of the service assemblage of that period. Form B8, instead, is a deep composite silhouette basin that seems to have been a persistent part of the food preparation assemblage late in the sequence.

Table 11.6 examines the spectrum of different rim modifications within Form B3. It should be remembered that B3 was mainly associated with Tlatempa and Texoloc. Still, several of these forms, particularly the simple beveled-rim dish or bowl, might easily be reinvented. The percentage of B3-2 fluctuates. Form B3-8, a bowl with a recurved rim and lip thinning to a point, was a minor Tlatempa form that was reinvented in Tenexac hundreds of years later. (Note that the apparently high Tzompantepec value represents a single sherd.) Patterns to be noted in Table 11.6 are the declining popularity of the beveled rim (B3-2) in relation to the outcurving everted rim with interior ledge (B3-6) from Early to Late Tlatempa, and the strong association of the downcurving everted rim (B3-4) with Texoloc. Some of our frustration with Laguna Texoloc is evident here. In contrast to our observations concerning Table 11.5, here Laguna Texoloc appears to resemble Early Tezoquipan more than it does the Texoloc represented at Tetel and Las Mesitas.

SECOND SERIATION: CORRESPONDENCE ANALYSIS OF POTTERY TYPES

Although we have considerable confidence in the results of our first seriation, the paucity of stratigraphic relations between units is a concern. In our second and third seriations, we therefore use correspondence analysis to probe the robustness of our first, qualitative effort. These analyses began with Jennifer Carballo's (2011) seriation of types at Amomoloc and Tetel, designed to assess the validity of the division of the Tlatempa phase into early and late subphases.

The approach was to combine correspondence analysis and group average (or average linkage) cluster analysis to evaluate the patterning derived from each procedure. The procedure was similar to the steps outlined by Duff (1996) in his microseriation of ceramic wares from Pueblo de los Muertos in New Mexico, though Duff employs k-means cluster analyses. (For detailed explanations of correspondence analysis, see Madsen 1988, Shennan 1997:308–341, Smith and Neiman 2007:55–58; for group average cluster analysis, see Drennan 2009:313–315, Shennan 1997:239–240; also see Garraty 2009 for a similar approach.) Correspondence analysis is well suited to nonnumeric data, such as counts or presence/absence data, and its graphic display of variability in the patterning of data can be useful for capturing change over time. Group average cluster analysis can help guide placement of boundaries between phases once the chronological ordering of features is determined by correspondence analysis.

We began the analysis of the Amomoloc and Tetel samples with a pilot seriation of the largest refuse contexts and

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Table 11.4. Basic Vessel Forms: Relative Percentages by Phase.

Vessel Form	Tzompantepec	Early Tlatempa	Late Tlatempa	Texoloc	Texoloc at Laguna	Early Tezoquipan	Late Tezoquipman[a]	Tenexac	Total
Bowl/dish	52.8	63.2	71.8	69.4	69.0	68.7	74.2	74.1	69.9
Comal	.0	.0	.0	0.1	.0	.0	.0	0.1	.0
Olla	42.6	32.7	25.8	23.1	26.3	23.5	22.4	22.7	25.4
Other	.0	.0	.0	0.1	.0	1.6	.0	0.3	0.4
Plate	.0	.0	.0	0.1	.0	0.6	0.5	0.4	0.2
Tecomate	4.6	4.2	2.4	7.2	4.6	5.7	2.8	2.4	4.0
Total N	108	931	1,477	872	323	1,223	243	1,502	6,679

[a] Late Tezoquipan = Tezoquipan assigned stratigraphically to the second occupation at La Laguna.

Table 11.5. Basic Bowl Forms: Relative Percentages by Phase.

Bowl Form	Tzompantepec	Early Tlatempa	Late Tlatempa	Texoloc	Texoloc at Laguna	Early Tezoquipan	Late Tezoquipman[a]	Tenexac	Total
B01 + B04	52.6	37.9	36.0	23.0	25.5	17.8	28.0	16.4	27.3
B02	19.3	2.2	1.0	2.9	0.6	5.3	16.0	35.6	9.7
B03	15.8	47.1	48.4	45.0	44.7	18.1	16.0	11.1	33.8
B05	12.3	7.3	6.5	4.7	0.6	1.0	2.3	4.8	4.8
B06	.0	1.4	1.7	20.6	26.7	45.2	32.6	27.0	18.3
B07	.0	.0	.0	.0	.0	0.6	.0	.0	0.1
B08	.0	.0	.0	0.2	.0	3.8	0.6	3.7	1.4
B09	.0	0.2	0.9	0.7	.0	2.2	0.6	0.1	0.8
B10	.0	0.7	2.1	0.2	.0	.0	.0	0.7	0.8
B11	.0	3.2	3.3	2.7	1.9	5.6	4.0	0.5	3.0
B12	.0	.0	.0	.0	.0	0.3	.0	.0	.0
Total N	57	588	1,061	549	161	624	175	763	3,978

[a] Late Tezoquipan = Tezoquipan assigned stratigraphically to the second occupation at La Laguna.

Table 11.6. Variants of Modified-Rim Bowls (B3): Relative Percentages by Phase.

B3 variant	Tzompantepec	Early Tlatempa	Late Tlatempa	Texoloc	Texoloc at Laguna	Early Tezoquipan	Late Tezoquipman[a]	Tenexac	Total
B3-2	22.2	40.8	31.1	23.9	69.4	54.9	78.6	52.9	38.1
B3-3	.0	4.7	9.5	4.5	.0	.0	.0	.0	5.4
B3-4	.0	4.0	1.9	46.2	15.3	24.8	17.9	18.8	14.5
B3-5	11.1	6.1	7.8	11.7	15.3	13.3	3.6	16.5	9.5
B3-6	22.2	26.7	39.7	13.4	.0	1.8	.0	3.5	23.6
B3-7	33.3	13.0	6.8	0.4	.0	.0	.0	2.4	5.7
B3-8	11.1	4.7	3.1	.0	.0	2.7	.0	5.9	2.8
B3-9	.0	.0	.0	.0	.0	2.7	.0	.0	0.2
Total N	9	277	514	247	72	113	28	85	1,345
B3 as % of all bowls	15.8	47.1	48.4	45.0	44.7	18.1	16.0	11.1	33.8

[a] Late Tezoquipan = Tezoquipan assigned stratigraphically to the second occupation at La Laguna.

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Table 11.7. Vessel Form Codes at Their Most Specific Level: Raw Counts of Rim Sherds in the Chronological Sample.

Form code[a]	Tzompantepec	Early Tlatempa	Late Tlatempa	Texoloc	Texoloc at Laguna	Early Tezoquipan	Late Tezoquipman[b]	Tenexac	Total
B				56	62	211	109	218	656
B or 0								36	36
B01								22	22
B01/2						5	7	21	33
B01-1	20	186	290	96				8	600
B01-2					1		1	2	4
B02	11	13	11	16	1	32	28	226	338
B02-1								3	3
B02-2						1		10	11
B02-3								23	23
B02-4								10	10
B03-2	2	113	160	59	50	62	22	45	513
B03-3		13	49	11					73
B03-4		11	10	114	11	28	5	16	195
B03-5	1	17	40	29	11	15	1	14	128
B03-6	2	74	204	33		2		3	318
B03-7	3	36	35	1				2	77
B03-8	1	13	16			3		5	38
B03-9						3			3
B04	10	37	92	30	40	111	48	93	461
B05								12	12
B05-1	1	42	62	22	1	2	4	18	152
B05-2	6	1	7	4				5	23
B05-3						4		2	6
B06		1	2	7	4	77	18	138	247
B06-1		7	15	46				1	69
B06-1a				15	33	168	33	30	279
B06-1b				12	6	28	2	8	56
B06-1c						5	2	2	9
B06-1d								20	20
B06-1e								5	5
B06-2			1	33		4	2	2	42
B07						4			4
B08				1		21	1	28	51
B08?						3			3
B09		1	10	4					15
B09-1						14	1	1	16
B10-1		3	18					1	22
B10-2		1	4	1				4	10
B11		19	35	15	3	35	7	4	118
B12						2			2
F1				1		1			2
F2						14		1	15
lid						4			4

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Form code[a]	Tzompantepec	Early Tlatempa	Late Tlatempa	Texoloc	Texoloc at Laguna	Early Tezoquipan	Late Tezoquipman[b]	Tenexac	Total
0				8	1	22	4	30	65
01								33	33
01-1	5	277	340	168	83	262	84	168	1,387
01-2	33	14	17					1	65
01-3								29	29
02								35	35
03			4	18		3		1	26
04	6	12	15	7				9	49
05-1	2	1	5						8
05-2					1				1
P				1		1	1	5	8
P1				1				2	3
P2						6	1	1	8
T				22	15	66	11	12	126
T1						3		17	20
T1-1	4	28	20	27					79
T1-2								1	1
T2	1	11	15	14		1		2	44
unidentified				3	1	33	9	129	175
Total N	108	931	1,477	875	324	1,256	401	1,514	6,886

[a] Censers (C) and crude cylinders (Y) not included.
[b] Late Tezoquipan = Tezoquipan assigned stratigraphically to the second occupation at La Laguna.

then expanded consideration to all secure features from Amomoloc and Tetel with more than 25 rim sherds (totaling 3,300 rim sherds from 25 features). We used original type designations (Chapter 9) rather than the simplified categories we used in seriations conducted on the entire data set (Table 11.1). Since Jennifer Carballo was the sole analyst of the Amomoloc–Tetel material, we did not face the inter-observer differences in identification of types that we encounter in analysis of the entire collection. The results are summarized in figures 11.8 and 11.9.

Both correspondence analysis and group average cluster analysis arrange the refuse samples in a similar manner, with a few exceptions. The advantage of correspondence analysis is that we are presented not only with the sequence of features but also with a scaling that shows the patterning of data visually. We can see which features cluster together and look for breaks in the sequence (Bech 1988:33).

Except for two outliers—A19 and A64, of which more in a moment—the plot of the first two principal axes from the correspondence analysis takes the form of a horseshoe-shaped curve that would suggest coherent results (Figure 11.8). The three phases, Tzompantepec, Tlatempa, and Texoloc, are distinguished from each other and positioned in proper order on the curve. The Texoloc features A11, A10, and A15 cluster together at one end of the curve (Figure 11.8, upper left). These three features are also, not surprisingly, grouped in the group average cluster analysis (Figure 11.9). Feature A16 of Tetel falls between the other Texoloc features and those of Late Tlatempa due to the strong presence of Amomoloc Plain and Yauhtentzi White. Both of those are traits shared with Tlatempa, raising the possibility of mixing. However, the spectrum of forms for Yauhtentzi White in Feature A16 resembles other Texoloc features rather than Late Tlatempa. (Form B3-6 makes only a trace appearance.)

Our basic distinction between Early and Late Tlatempa emerges in the correspondence analysis. The outliers—samples A19-1S and A64-2S—have unusually high frequencies of San José White-and-Brown. Since presence of that type is a strong Late Tlatempa marker, there seems no reason to try to distinguish between these samples and other Late Tlatempa features. (Sample A19-1S has been dropped from the Chronological Sample in this volume due to its relatively small sample size.) The four samples that gave us some trouble in the first seriation—A12-2S, A54-2S, A63-2S, and A71-1S—fall between the main set of Early Tlatempa samples and those of Late Tlatempa. The cluster analysis (Figure 11.9) distinguishes: (1) the outli-

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ers A19 and A64; (2) an Early Tlatempa set; and (3) a Late Tlatempa set, with features A12, A54, A63, and A71 again emerging as difficult in that their affinities as identified in the cluster analysis do not closely match those identified in the correspondence analysis.

Overall, the seriation of Amomoloc and Tetel refuse samples supports our phasing for the early part of the sequence. Our proposed distinction between Early and Late Tlatempa emerges from this seriation based solely on pottery types, blurred only by difficulties of classification of the same four samples that gave us trouble in our first seriation.

Our next step was to try to extend this analysis to the entire Chronological Sample. It was clear from the beginning that we faced the significant challenge of inter-observer differences in the identification of types discussed above and in Chapter 9. As input for the new correspondence analysis, we used the set of more stable types and groups of types identified in Table 11.1. The plot of the first two principal axes in this case revealed an unsatisfying T-shaped distribution, the results of the lumping of the brown and red-on-brown types—particularly Mesitas Brown with Metl Brown and Potrero Red-on-Brown with Gonzales Red-on-Brown. The plot yielded two branches from Texoloc, one to Tezoquipan (based on real similarities in the occurrence of red-slipped and other minor types)

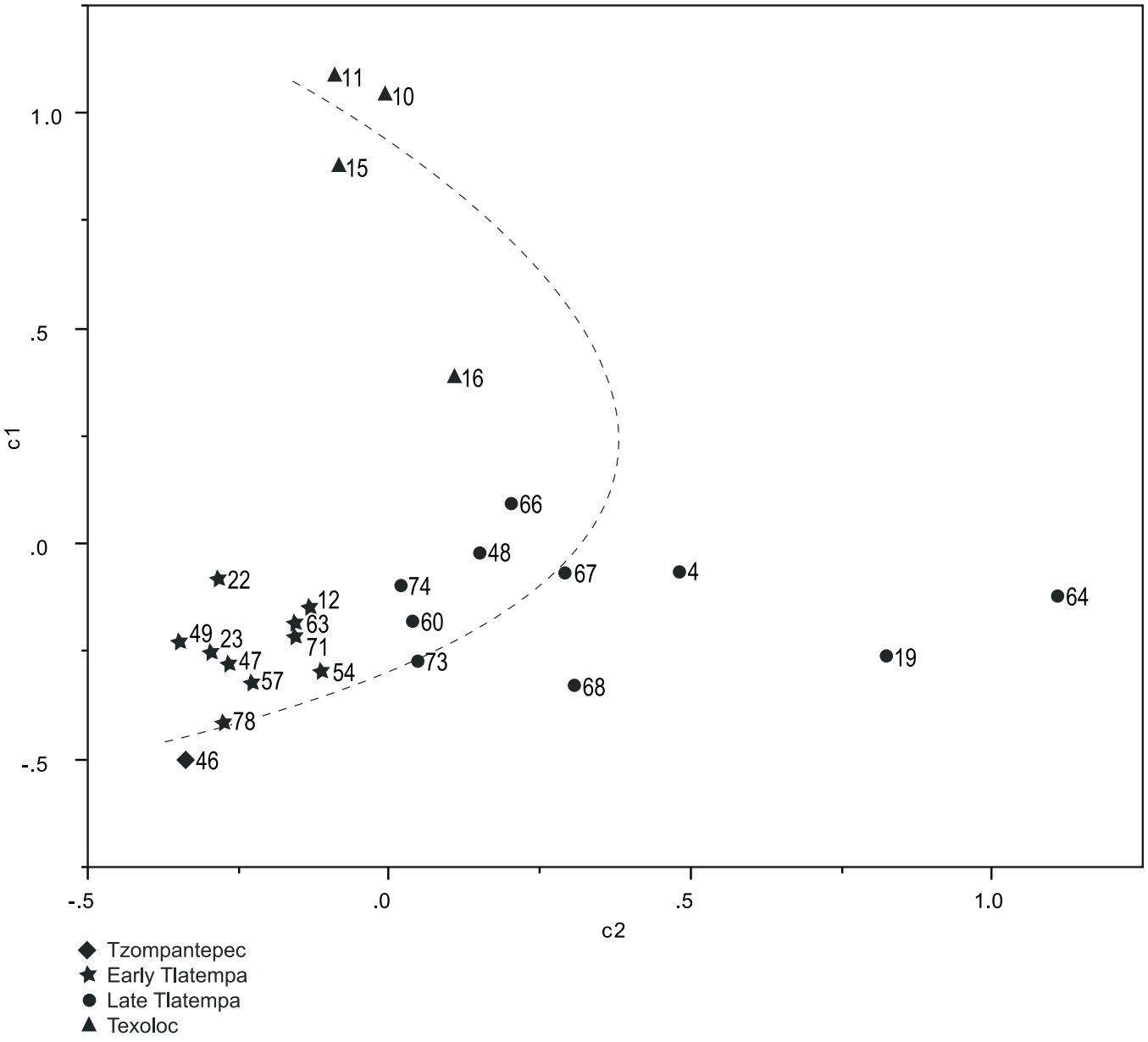

Figure 11.8. Plot of the first two principal axes from the correspondence analysis of pottery types from Amomoloc and Tetel.

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and one to Tenexac (based on the spuriously similarities of "high brown" and "red-on-brown" that would have disappeared if we had been able to rely more confidently on different investigators' typological distinctions within those categories).

A selective use of vessel form information remedied this problem. We separated brown and red-on-brown outsloping-walled dishes with direct rims—form B2—as "types" distinct from all other brown or red-on-brown. Correspondence analysis yielded a coherent U-shaped distribution that distinguished successfully between Tlatempa, Texoloc, Tezoquipan, and Tenexac. Tzompantepec, however, was not differentiated from Tlatempa, nor were Early and Late Tlatempa successfully distinguished—based again on the simplified input involving lumping of certain types.

In sum, there is not enough information in the stabilized "types" of Table 11.1 alone to make fine chronological divisions among our refuse samples. But such an analysis ignores the chronological information in vessel form and figurines. Our third seriation drew on all three sources of information.

THIRD SERIATION: CORRESPONDENCE ANALYSIS WITH INFORMATION FROM MULTIPLE ARTIFACT CLASSES

The results of the correspondence analysis of pottery types (and groups of types) support our more traditional seriation in a general way, but the analysis as a whole is unsatisfyingly crude in comparison to our first seriation since it ignores time-sensitive information among vessel forms and figurines. In our third seriation, we apply the same approach to a matrix that draws on three classes of information: pottery types, vessel forms, and figurine types.

There is no simple way to extend the approach taken in the second seriation to include these new sources of evidence. Conceivably, one might throw all the information—counts of pottery types, vessel forms, and figurine types—into one big matrix. However, such an approach muddies the relationships that really seem to matter: it is the relation of red slip to white slip, for instance, rather than of red slip to Cuatlapanga figurines, that needs to be measured. Further, the figurine types, present in low frequencies, should be measured in terms of presence/absence rather than relative frequencies, whereas the opposite is true for pottery types. We tried splitting the pottery assemblage by both type and form, but the result was a huge matrix with distressingly low counts in most cells—and that approach could not logically be extended to the distinct artifact class of figurines.

Given these problems, we devised an alternative scheme for construction of the matrix for the third seriation, based on Boolean variables. The variables, shown in Table 11.8, are statements to be considered in relation to the pottery or figurines of a given unit, answerable either "true" (1) or "false" (0). In the resulting matrix (Table 11.9), the columns still correspond to individual units of the chronological sample. The rows, instead of representing individual types, now correspond to the individual Boolean variables, which may reference any of the three sources of information (pottery types, vessel forms, figurine types, or in a few cases combinations thereof).

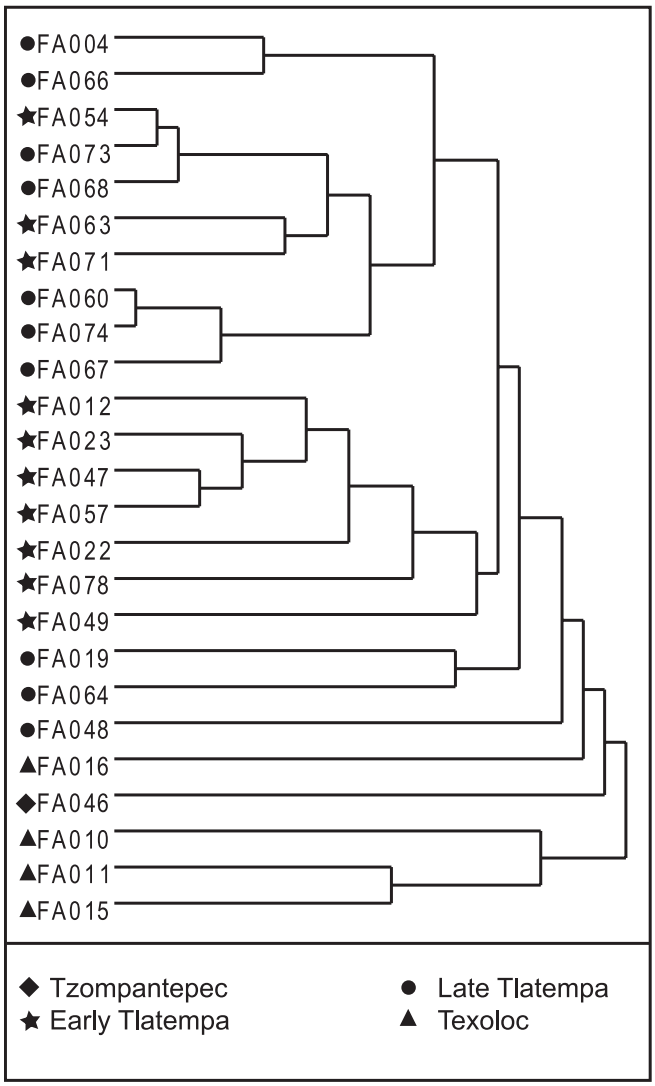

Figure 11.9. Group average cluster analysis for seriation of pottery types from Amomoloc and Tetel.

In developing the variables, we drew on work that went into creating the key (Figure 11.7). We devised sets of variables that we hoped would promote the segregation of each of our basic phases or subphases. In the final ordering of variables presented in Table 11.9, variables 1 to 6 correspond to Tzompantepec patterns, 6 to 8 to Early Tlatempa, 9 to 11 to Tlatempa as a whole, 12 to 14 to Late Tlatempa, 15 to 17 to Texoloc, 18 to 22 to Tezoquipan, and 23 to 26 to Tenexac. For Laguna Texoloc and Late Tezoquipan, the plan was simply to track those within the larger

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Table 11.8. Questions Posed as Variables to Construct the Matrix for the Third Seriation.

Variable: Question to Be Answered True (1) or False (0)	Code
More than 5 percent of all rims are form B2, slipped white.	01WhiteB2
45 percent or more of all rims are Amomoloc Plain.	02Plain50%
Ceniza White is present.	03Ceniza
Matron or early coffee-bean eye figurines are present.	04MatronFig
Pascuala Black-and-White is present.	05PasDF
Ollas constitute 30 percent or more of all rims.	06Ollas
The ratio of Yauhtentzi Red-on-White to the white group is greater than or equal to 1.0.	07YauRW
28 percent or more of all typed rims are Amomoloc Plain.	08Plain28%
The white group is ranked one, two, or three behind only 01AmPlain, 03YauRW, or 04SJW/B.	09WhiteGrp
Cuatlapanga figurines are present.	10CuatFig
Modified-rim dishes (B3) constitute 25 percent or more of identified bowls (B1-B11).	11B3
The frequency of Form B3-6 is greater than that of B3-2.	12B3-6
Coaxomulco figurines are present.	13CoaxFig
San José White-and-Brown (04SJW/B) is present.	14SJW/B
Form B3-4 is the most common form among modified-rim bowls (B3).	15B3-4
Ehco figurines are present (not including Laguna grouping).	16EhcoFig
The combined brown and red-on-brown groups are ranked one or two; less than 10 percent of those are Form B2.	17Brown-Not B2
Huehuetitla or Huiloac figurines are present.	18HueFig
The composite silhouette bowl (B6) is the most common form among identified bowls (B1-B11).	19B6
De Haro Polychrome is present.	20DeHaro
"Reds" (the red group plus Xalmonto plus Gazca) constitute 55 percent or more of all rims.	21Reds
Xalmonto Red-and-White is ranked one, two, or three.	22Xalmonto
The combined brown and red-on-brown groups are ranked one or two; more than 40 percent of those are B2.	23Brown-B2
Form B2 comprises 25 percent or more of identified bowls (B1-B11).	24B2
Form B2-3 is present.	25B2-3
Tenanyecac, Teotihuacan, or white-slipped figurines are present.	26TenanFig

Texoloc and Tezoquipan sets to further interrogate our assessments that those were difficult or impossible to reliably distinguish.

The matrix shown in Table 11.9 presents our proposed ordering of units based on an extended effort of rearranging columns and rows so that the 1's cluster as much as possible along a diagonal from upper left (early) to lower right (late). The variables (rows) were numbered only after this arrangement had been achieved. We present the matrix in this form to demonstrate the strong patterning it contains.

The results of both group average cluster analysis and correspondence analysis on this matrix are very satisfactory. Results of the two approaches reinforce each other and provide substantial support for interpretations developed during the more qualitative initial seriation.

The cluster analysis shown in Figure 11.10 divides the chronological sample into a set of phases/subphases basically consistent with those argued for on the basis of the first seriation. Eight groups are distinguished: Tzompantepec; Early Tlatempa; Late Tlatempa; three varieties of Texoloc, Tezoquipan, and Tenexac. The four difficult Tlatempa samples (from features A12, A54, A63, and A71) are classified in the same way we argued for in reporting the first seriation (the first two to Late Tlatempa; the second two to Early Tlatempa). Texoloc is more or less divided by site (Tetel, Las Mesitas, and La Laguna). Only four units are "misclassified" according to our original assessments: A48-1S is grouped with Early Tlatempa instead of Late Tlatempa; A16-1S is classified with Late Tlatempa instead of Texoloc; Laguna–Texoloc C143 is united with Tezoquipan instead of with the other Laguna–Texoloc samples (C137, C141); and B36-2S is grouped with Texoloc instead

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of Tezoquipan. Late Tezoquipan—as observed already in the course of the first seriation—does not exist as a cluster of material culture traits.

Results of the correspondence analysis are shown in figures 11.11 and 11.12. The early part of the sequence plots satisfactorily with only Late Tlatempa Unit A74-1S misplaced among the Early Tlatempa samples due to lack of Cuatlapanga figurines (a sample size issue) and a relatively low frequency of Form B3-6. It is worth noting that the "misplaced" unit here (A74) is different than that in the cluster analysis (A48). Three of the four problem units (A12, A54, A63, and A71) fall between the main clusters of Early and Late Tlatempa, with A54 tending toward Late Tlatempa and the last two toward Early Tlatempa. Feature A12 groups with Late Tlatempa. These assignments are in accordance with results of the cluster analysis (Figure 11.10) and with our assessment based on the first seriation.

Texoloc and Tezoquipan are partially differentiated in Figure 11.11, with some intermixing. Laguna–Texoloc Unit C143 falls in Tezoquipan, as it does in the cluster analysis. More surprisingly, so do Las Mesitas units A32-33 and A34-4S, apparently due to the strong representation of composite silhouette bowls (B6) in those samples. We spent many frustrating hours working on separation of Texoloc and Tezoquipan in the course of preparing the first seriation. The distribution of units from these phases in Figure 11.11 appears to provide something of a graphic representation of that experience. Our sense is that the temporal trends between Texoloc and Early Tezoquipan are real but gradual and are nearly overwhelmed by considerable noise in the data.

Late Tezoquipan is a different matter altogether. Like the cluster analysis and in accordance with our assessment based on the first seriation, correspondence analysis reveals no internal coherence among the samples designated Late Tezoquipan on stratigraphic grounds. Unit B61 is slightly displaced toward Tenexac from the main Early Tezoquipan swarm, but this is due to the complete absence of residual Texoloc traits rather than any new positive trait or the presence of incipient Tenexac markers. Units C120, C121, and C132 fall in with Early Tezoquipan, while Unit Lag-H1—mound fill of Structure 14M-1sub, which should contain materials of the first century B.C. (or earlier), precisely the time of Late Tezoquipan—seriates with the Tenexac samples.

Figure 11.12 superimposes stratigraphic information (from Table 8.3) on the same correspondence analysis plot of Figure 11.11. Most of the stratigraphic relationships between pairs of units are consistent with a temporal interpretation of the curve. The line between B13-1S and B13-2S (too short to be visible in the figure) intersects the curve obliquely, but the units are plotted so closely together that the issue seems irrelevant. Relations between Unit C123 and the Late Tezoquipan units C120, C121, and C132, shown in dotted lines in the figure, also intersect the curve obliquely. The only actual reversal in the plot, marked by a frowning face in the figure, is that Late Tezoquipan Unit Lag-H1 falls further into Tenexac than the overlying Lag-H2; that result is due to the strong presence of composite silhouette bowls (B6) and of Ehco figurines in Lag-H2, the latter at least probably present as carry-ups.

FINAL ASSESSMENT OF THE SERIATIONS

Recurring patterns in the various seriations demonstrate the strength of our basic chronological distinctions as well as areas of ambiguity in the data. Various methods separated Tzompantepec, Tlatempa, Texoloc, Tezoquipan, and Tenexac phases, though all methods as well revealed some fuzziness in the distinction between Texoloc and Tezoquipan. A likely reason for that result is that due to the hiatus at La Laguna, we have only the beginning of the Tezoquipan phase represented among our refuse samples—though it is well represented, since we have little else from the first occupation of the site.

Different methods also lead to the separation of what we identify as Early and Late Tlatempa. Except for four units that recurrently pose problems, units "misclassified" in one analysis are "correctly" classified in another. With the results of all the seriations at hand, we have decided on subphase designations for the problem units. Still, our divisions of Tlatempa deserve testing and refinement based, it is to be hoped, on an expanded data set.

Further work is also warranted on the definition of Texoloc. One problem brought out in Figure 11.10, where our Texoloc samples fall into different clusters by site, is that the character of Texoloc refuse samples from Tetel, Las Mesitas, and La Laguna is in each case distinct. As a result, we are wary about potentially confusing synchronic differences between sites with chronological patterns. At Tetel, white wares are more common in Texoloc refuse samples than in our other sites. Are these carry-ups from the Tlatempa occupation absent at the other sites? Are our Tetel samples all "early" Texoloc? Or is the persistence of white wares here a localized mini-tradition characteristic of Tetel? Expanded samples from multiple sites will be necessary to answer such questions.

RADIOCARBON DATES

The final task is identification of absolute dates for the phases. Radiocarbon dates to be considered are those from our own excavations as well as dates reported by García Cook (1976a, 1976b). Our new dates are presented in Tables 11.10 and 11.11 and those reported by García Cook in Table 11.12.

Table 11.10 lists our radiocarbon dates associated with samples of Formative ceramics. Of the dates listed, 25 were generated as part of investigations of the Apizaco Formative Project reported in these volumes, two were obtained

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Table 11.9. Matrix for the Third Seriation.

Variable	A46	A22	A23	A47	A49	A57	A71	A63	A68	A12	A54	A64	A67	A74	A48	A04	A60	A73	A16	A45	A11	A10	A15	A32-33
01WhiteB2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02Plain50%	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03Ceniza	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04MatronFig	1	0	1	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0
05PasDF	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0
06Ollas	1	1	1	1	1	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0
07YauRW	0	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08Plain28%	1	0	1	1	1	1	1	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
09WhiteGrp	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0
10CuatFig	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	1	1	1	0
11B3	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
12B3-6	0	0	0	0	1	0	1	1	1	0	1	0	1	0	1	0	1	1	0	0	1	1	0	0
13CoaxFig	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	1	1	1	0	0	0	1	0
14SJW/B	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	1	1	1	1	0	1	1	1	0
15B3-4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
16EhcoFig	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1
17Brown-Not B2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1
18HueFig	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0
19B6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
20DeHaro	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21Reds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22Xalmonto	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23Brown-B2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24B2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25B2-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26TenanFig	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: Columns correspond to units of the chronological sample.

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A34	C143	C137	C141	B55	C120	A105	A112	A102	B36	C140	B13-2S	C121	B46	B50	Lag-I1	C132	B13-1S	B61	C123	B3	A109	A110-2S	Lag-H3	Lag-H1	Lag-H2	Lag-D1	Lag-D2
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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1	0	0	0	1	0	0	1	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	1	0	1	1	1	0	0	0	1	0	1	1	0	1	1	1	0	0	0	0	1	0	0	0	1	1	1
1	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	1	1	1	1	1	0	1	0	0	0	1	0	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1

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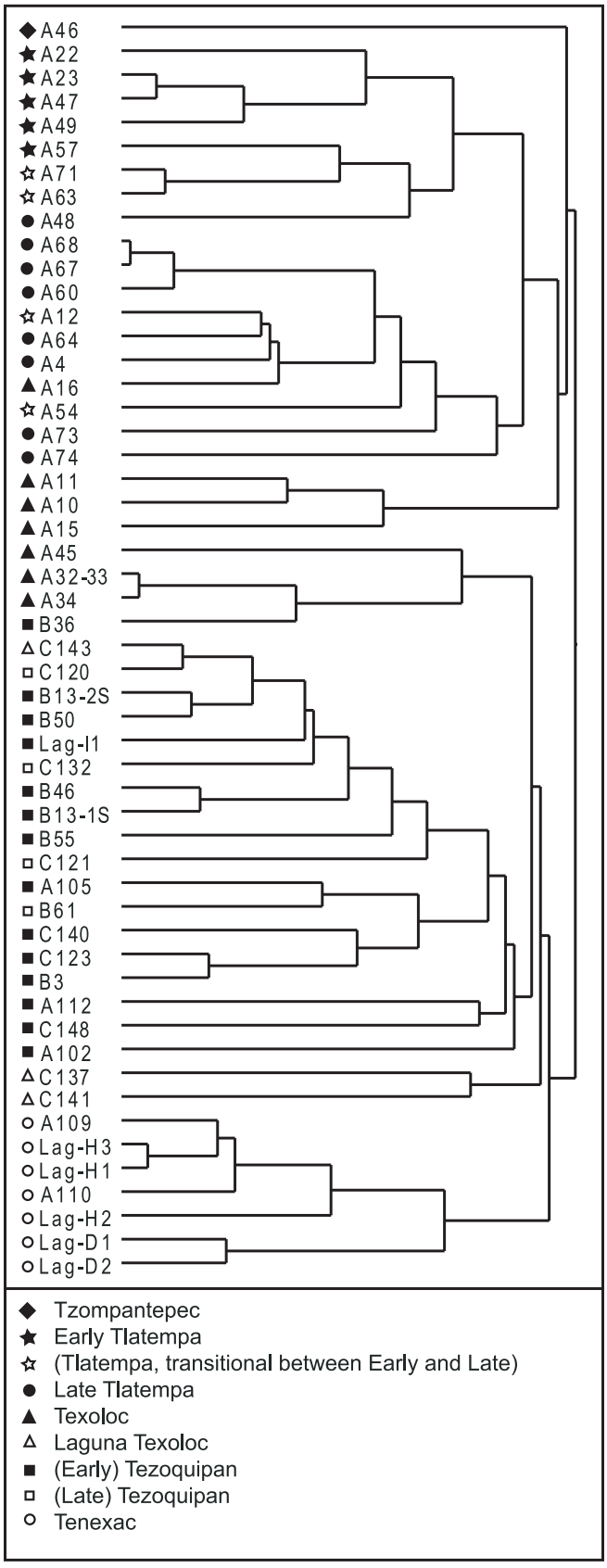

Figure 11.10. Group average cluster analysis for the third seriation, on units from the Chronological Sample.

by Carballo in his Proyecto Arqueológico La Laguna, and three dates on human bone were recently obtained by Borejsza. One date in the table (AA43607), from what appeared to be a small Tlatempa hearth at Amomoloc, falls in the Classic period. We reject the date as irrelevant to working out the Formative chronology, and we have not used the associated materials in the analyses reported in this volume. We have reservations also about Late Tezoquipan sample Beta-216423. The stratigraphy in that case places the feature in the second occupation at La Laguna, but the date falls in the first occupation; the sample is discussed further toward the end of this chapter.

The other dates in Table 11.10 are all acceptable. Twenty-three of them are dates on charcoal associated with units of the Chronological Sample; those are identified with an asterisk before the site name in the first column of the table. One of Borejsza's dates on bone (AA94043) is from Feature B46 of the Chronological Sample; it fits comfortably with the date on charcoal from that same feature (AA63373). Carballo's sample AA93566 is associated with Tenexac refuse from Feature C179 in Area I. The ceramic associations of the other dates from Carballo and Borejsza's recent work are with limited numbers of complete vessels placed as burial offerings or caches. The two most important are AA87631 and AA94044, which help support our suggestion that the ceramic complex in use at the beginning of the second occupation of La Laguna was Late Tezoquipan, dominated by red-slipped ceramics.[2]

Table 11.11 presents other radiocarbon dates from La Laguna. Most of them were obtained by Carballo in his recent work at the site; their association is with architecture rather than with samples of domestic refuse. Only five dates from Table 11.11 are relevant for our discussion in this chapter; those are identified with asterisks by site names in the first column of the table. Sample AA87636 is from Feature C118, a maguey-roasting pit on Structure 15M-1 in Area F. It indirectly dates either Feature C133 or features C120, C121, and C132 of the Chronological Sample, as we explain below. The other four dates are from Area H and are associated with the construction (or destruction) of Structure 14M-1sub or the building constructed atop it, 14M-1. Beta-227414 dates a burned posthole atop 14M-1sub; it places the construction of this building early in the second occupation of the site. Beta-227413 is from a posthole atop the subsequent 14M-1, and AA63517 is from a burned feature immediately beside the outermost platform of 14M-1. The former would place construction of 14M-1 in the first or early second century A.D.; the latter would suggest an earlier date, but it is not a direct date on the architecture. AA65515 is from the destruction of the buildings in Area H, which seems to have occurred at the time of abandonment of the site.

The final dates we have considered in our chronological synthesis are those reported by García Cook (1976a:Figure 4) from excavations at T-288 near Xochitécatl, Tlalancaleca (P-119), Gualupita las Dalias (P-164), and Los Teteles

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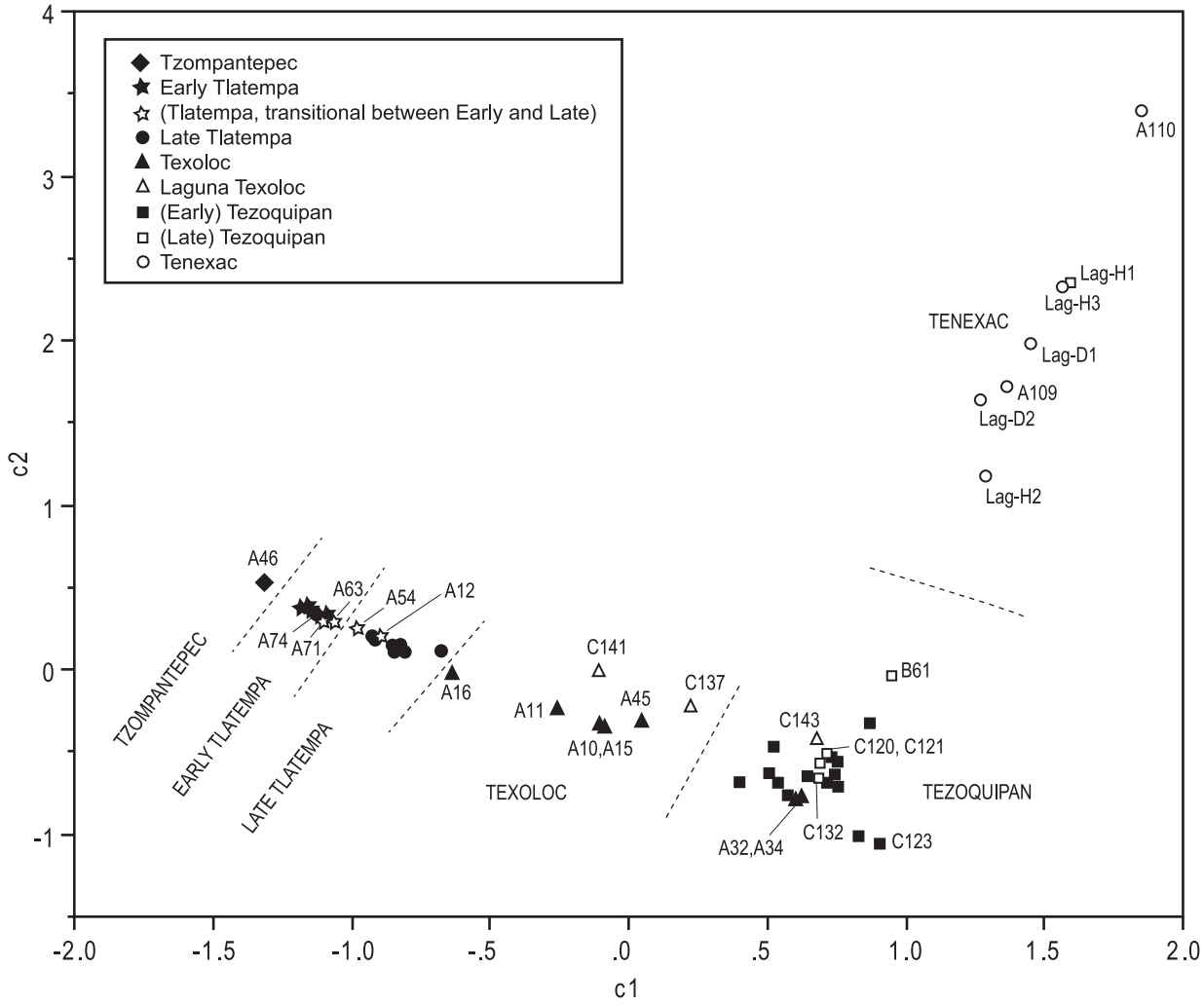

Figure 11.11. Plot of the first two principal axes from the correspondence analysis for the third seriation, on units from the Chronological Sample.

de Ocotitla (T-358). Those are presented in Table 11.12, with updated calibrations. Phase assignments of materials associated with the dates are based on information in García Cook (1976a:Figure 5, 1976b).

We first consider local evidence for absolute dating of our phases before moving, in the next section, to comparison with neighboring sequences. Figure 11.13 shows the total summed radiocarbon probabilities for our charcoal-based dates on refuse samples (Table 11.10), split by phase. Also included for comparison with Tenexac are other charcoal-based dates from second-occupation contexts at La Laguna, including AA87631 from Table 11.10 and the five starred dates from Table 11.11. Beta-216423 from Late Tezoquipan C120 (Table 11.10) is not included. Other dates on architecture at La Laguna (Table 11.11) are not included because some of those do not seem to fit with the stratigraphy of the constructions they date; they can only be considered alongside a detailed discussion of contexts—a topic far outside the purview of the present volume. The curves in Figure 11.13 were generated using the 2-D Dispersion Calibration Program Calpal Version May 2006 (University of Cologne Radiocarbon Calibration Program Package). For features with multiple dates from what we consider to be temporally restricted samples of refuse (features A4, A10, A11, and A46), we pooled dates using a feature in the calibration program Calib (Stuiver and Reimer 1993).

Our sequence begins after 1000 B.C. and ends before A.D. 400. The gap between 400 and 100 B.C. corresponds to the period of depopulation at La Laguna; it is not that the region as a whole was unoccupied at this time but that we found no occupation at any of the four sites excavated that corresponded to that epoch. At the left-hand side of the diagram, Tzompantepec comes out clearly earlier than Tlatempa, with the peak probability around 900 B.C. At the right-hand side of the diagram, the peak probability for Tenexac corresponds to the second century A.D. The curve for all second-occupation dates from La Laguna (including the Tenexac dates) extends back to approximately 100

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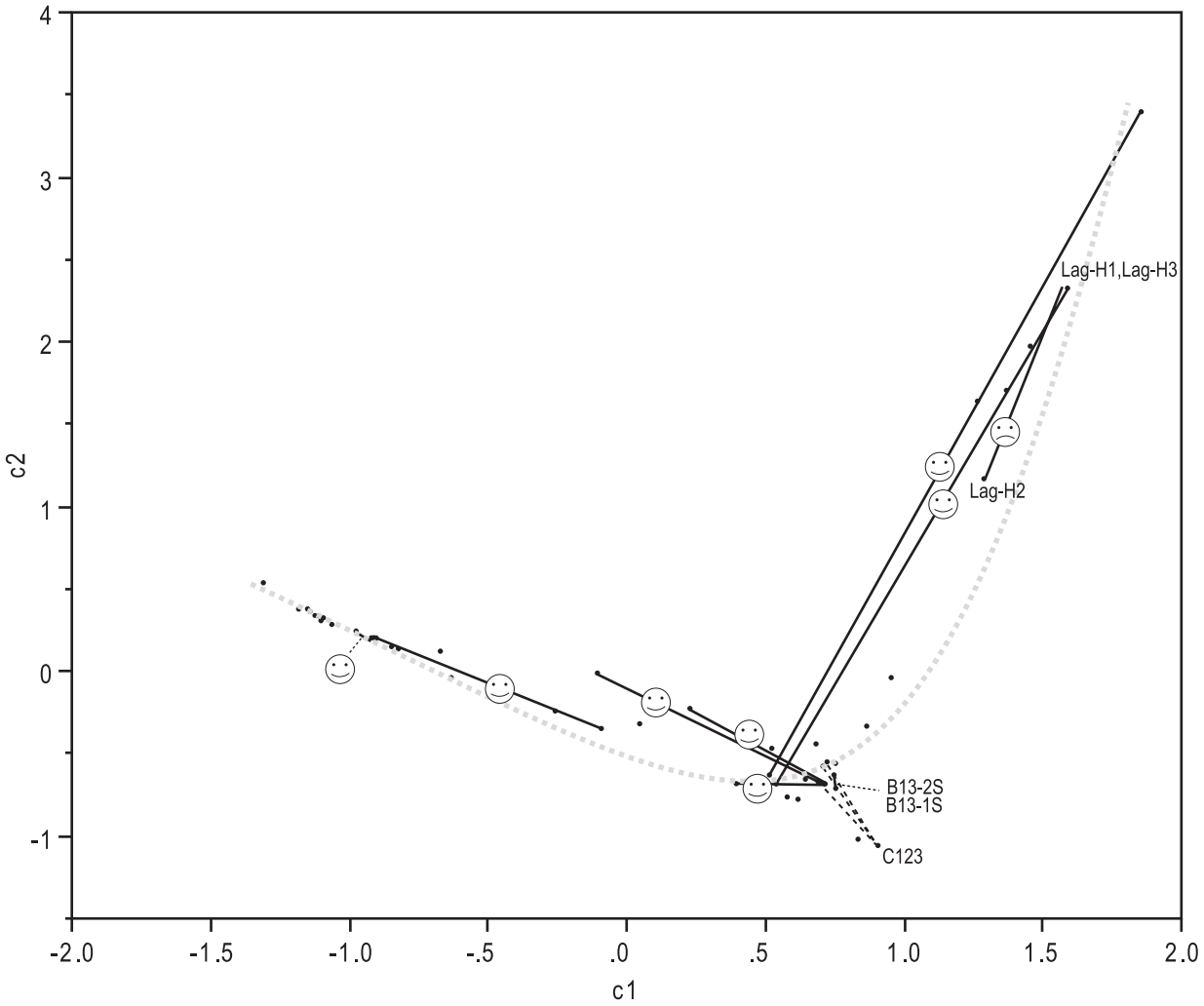

Figure 11.12. Plot of the first two principal axes from the correspondence analysis for the third seriation showing stratigraphic relations among pairs of units. Units that fall in correct stratigraphic order on the plot are marked with smiley faces.

B.C. and thus provides some support for our suggestion that there was some complex in use at La Laguna before Tenexac (Late Tezoquipan). Still, it must be remembered that the dates in question were associated with architectural activities. They thus have no direct association with any ceramic complex.

The depressing feature of the diagram is that the summed probability distributions for Tlatempa, Texoloc, and Tezoquipan entirely overlap, extending from 800 to 400 B.C. The problem is not that these phases overlapped during this time; it is instead that the radiocarbon calibration curve for this interval is essentially flat. Any single date between 2550 and 2400 B.P. in radiocarbon years has multiple intercepts on the calibration curve and a calibrated range that includes much of the span 800 to 400 cal B.C. Tlatempa and Texoloc turn out to be indistinguishable based on radiocarbon dates. Tezoquipan instead looks, as it should, like the latest of the three, since a larger portion of its distribution falls after 500 B.C. Still, radiocarbon will not be of much help in the effort to select absolute dates for the Tlatempa–Texoloc and Texoloc–Tezoquipan transitions.

The dates we propose for the phases differ from those originally proposed by García Cook; a comparison between our dates and his is thus of great interest. That issue is explored in figures 11.14 through 11.16, again based on summed probability distributions for all available dates of each phase. In the figures, none of García Cook's dates are pooled.

Figure 11.14 examines García Cook's (1976a) Tlatempa dates. The probability distribution matches our results for Tlatempa pretty well. Note that three of García Cook's dates derived from adjacent levels in Pozo 2 at T-288 (see Table 11.12). The date from Level IX is actually earlier than either of the two results from Level X, but the three dates are statistically the same at the 95 percent probability level (as calculated using the function in Calib). When those three dates are pooled, the summed probability dis-

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tributions of our Tlatempa dates and those of García Cook become virtually identical.

Figure 11.15 examines the opposite end of the sequence. Our Tenexac dates correspond remarkably well to those of García Cook for early Tenanyecac. Most of the latter derived from a single tomb at Los Teteles de Ocotitla. Because the tomb is complex, with evidence of multiple entries, it has not seemed appropriate to pool the dates from there. Neither our dates nor García Cook's can be considered a representative sample of their respective phases, but the results would provide a basis for equating Tenexac with Tenanyecac and assigning it a beginning date as late as A.D. 100. We revisit this issue at length below.

Figure 11.16 compares our Texoloc and Tezoquipan dates to those of García Cook (1976a). In contrast to the previous two figures, the results are a mess. In our descriptions of material attributes of the phases at the outset of this chapter, we noted that we seriously considered a label of Late Texoloc for what we have instead decided to call Early Tezoquipan. Such a move would at least partially harmonize our radiocarbon dates with those of García Cook. In the end, however, we decided it was important to keep our assignments of units to phases based solely on concrete attributes of material culture. Altering our assessment of the materials based on how the radiocarbon dates come out would open the door to just the sort of vicious circularity we have been striving to avoid. We will return to the placement of Texoloc and Tezoquipan in our comparison with other sequences.

ABSOLUTE CHRONOLOGY FOR THE PHASES

In the preceding sections we described at length our relative chronology of pottery and figurines. We also presented our radiocarbon dates and compared them to those of García Cook. Our final task is to link these data to the evidence of neighboring sequences to justify our decisions concerning chronology, shown in Figure 11.1 in relation to previous proposals from our area and in Figure 11.17 in relation to sequences of neighboring regions.

Comparisons with the Basin of Mexico figure prominently in our arguments concerning absolute dates for the Tlaxcala phases. Particularly important are three multiphase units: (1) the Early–Middle Formative tradition of decorated white ware, which needs to be thought of as divisible into early (Manantial) and late (Zacatenco) components; (2) the Late Formative Ticomán tradition; and (3) the Terminal Formative, including Tezoyuca, Patlachique, and Tzacualli phases. In the process of identifying absolute dates for phases, we position our phases with respect to these units of the Basin of Mexico sequence.

Because of the importance of the Basin in our argument, it seems useful to comment on our selection from among multiple available chronologies for that area. We find the terminology favored by Sanders et al. (1979) and Tolstoy (1978) more confusing than helpful.[3] Named phases grouped into the traditional divisions of Middle, Late, and Terminal Formative make more sense to us. We have found Tolstoy's (1978, 1989b) attention to detail and consideration of issues of calibration helpful, but his detailed descriptions often lack illustrations, and we are not sure how well his fine divisions of the Early–Middle Formative sequence stand up. Niederberger's (1976, 1987, 2000) divisions have the advantage of support from copiously illustrated monographs. For our basic understanding of the sequence, we have relied particularly on Niederberger and Tolstoy for the Early–Middle Formative and on Tolstoy, Rattray (2001), and Sanders et al. (1975) for the Late–Terminal Formative (see Figure 11.17). Also, several of us visited the American Museum of Natural History in New York to examine the Vaillant collection firsthand, in particular the pottery and figurines from the sites of Zacatenco and Ticomán.

We divide our work on an absolute chronology into three problems to be addressed separately: Tzompantepec and Tlatempa in relation to the Early–Middle Formative white ware tradition; Texoloc and Tezoquipan in relation to the Late Formative Ticomán tradition; and the second occupation of La Laguna as both an internal problem (interpretation of our own evidence) and an external one (correlations with other sequences).

Tzompantepec, Tlatempa, and the Early–Middle Formative White Ware Tradition

A key issue is how the Tzompantepec and Tlatempa phases are to be positioned with respect to the tradition of the white-slipped, incised pottery common in Mesoamerica from approximately 1200 through 600 B.C. That tradition corresponds to Manantial, Tetelpan, and Zacatenco in Niederberger's version of the Basin of Mexico sequence (Niederberger 2000:Table 1), to Barranca and Cantera at Chalcatzingo (Cyphers 1987), and so forth. García Cook equated Tlatempa with that entire white ware tradition (1200–800 B.C.) and positioned Tzompantepec before it, at 1700 through 1200 B.C. (García Cook 1974; García Cook and Merino Carrión 1988, 1989). We propose instead that both were relatively short phases toward the end of the white ware tradition—together corresponding roughly to the Zacatenco phase in the Basin.

García Cook (1974:8) correlated Tzompantepec with Ajalpan in Tehuacán based on surface finish and the range of simple rounded-walled vessel forms, including particularly red-slipped tecomates (see also Mora 1996:283 [1975]). We actually have no red tecomates in our Tzompantepec unit, but we think that is an effect of sampling since we have heavy red tecomates very similar to those described by García Cook and Merino Carrión (1988:276) in our Early Tlatempa units. One problem with the Ajalpan correlation is the predominance of white-slipped pot-

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Table 11.10. Radiocarbon Dates Associated with Formative Ceramics.

Site	Lab Number	Provenience	Context	Material	Method	$\delta^{13}C$	^{14}C Years B.P.	Cal Range 2σ	Relative Area Under Distribution	Ceramic Complex
*Amomoloc	AA63516	Terrace 2, Unit W, Feature 46, Lot 630 [A46-2S]	bell-shaped pit, near bottom	wood charcoal	AMS	-25.3	2788 ± 40	1030–830 B.C.	1.00	Tzompantepec
*Amomoloc	Beta191700	Terrace 2, Unit U, Feature 46, Lot 658 [A46-2S]	bell-shaped pit, near bottom	pine charcoal	AMS	-23.9	2690 ± 40	910–800 B.C.	1.00	Tzompantepec
*Tetel	AA43599	Unit A5, Feature 4, Lot 35 [A4-4S]	bell-shaped pit, near mouth	charred maize kernels (2)	AMS	-8.4	2656 ± 93	1040–520 B.C.	1.00	Tlatempa
*Amomoloc	AA58957	Terrace 2, Unit A, Feature 23, Lot 532 [A23-2S]	round pit, middle	pine charcoal	AMS	-23.9	2561 ± 39	810–730 B.C. 690–660 B.C. 650–540 B.C.	.52 .16 .33	Tlatempa
*Tetel	AA43600	Unit A14, Feature 12, Lot 95 [A12-2S]	bell-shaped pit, near walls or bottom	Charred maize kernel (1) and cob fragment	AMS	-10.1	2507 ± 41	790–500 B.C. 440–420 B.C.	.98 .02	Tlatempa
*Amomoloc	AA43606	Terrace 2, Unit A, Feature 22, Lot 505 [A22-3S]	irregular pit	wood charcoal	AMS	-25.3	2396 ± 47	750–690 B.C. 670–640 B.C. 590–390 B.C.	.15 .05 .80	Tlatempa
*Tetel	AA43598	Unit A4, Feature 4, Lot 25 [A4-4S]	bell-shaped pit, middle	charred maize kernels (3)	AMS	-8.6	2480 ± 44	770–480 B.C. 470–420 B.C.	.91 .09	Tlatempa
Amomoloc	AA43607	Terrace 2, Unit D, Feature 24, Lot 518	round pit	wood charcoal	AMS	-24.1	1171 ± 36	A.D. 770–970	1.00	Tlatempa
*Laguna	Beta227412	Area H, Feature 143, Square 17J, Lot 2066 [C143]	bell-shaped pit, on top of child burial	charcoal	AMS	-25.3	2580 ± 40	820–740 B.C. 690–660 B.C. 650–550 B.C.	.67 .12 .21	Texoloc
*Tetel	AA43602	Unit A6, Feature 10, Lot 55 [A10-1S]	round pit, middle	Charred maize kernels (2)	AMS	-8.8	2578 ± 42	820–740 B.C. 690–660 B.C. 650–550 B.C.	.63 .13 .24	Texoloc
*Tetel	AA43603	Unit A7, Feature 11, Lot 7 2 [A11-2S]	bell-shaped pit, middle	charred maize kernels (2)	AMS	-8.6	2534 ± 38	800–710 B.C. 700–540 B.C.	.36 .64	Texoloc
*Mesitas	AA58956	Unit A, Feature 32, Square A5, Lot 278 [A32+33]	bell-shaped pit	pine charcoal	AMS	-25.8	2521 ± 44	800–510 B.C. 440–420 B.C.	.99 .01	Texoloc
*Mesitas	AA58955	Unit F, Feature 45, Square F2, Lot 378 [A45-2S]	bell-shaped pit	pine charcoal	AMS	-24.7	2510 ± 39	790–510 B.C. 440–420 B.C.	.99 .01	Texoloc
*Tetel	AA43601	Unit A6, Feature 10, Lot 54 [A10-1S]	round pit, upper	charred maize kernels (4)	AMS	-8.6	2439 ± 41	750–690 B.C. 670–610 B.C. 600–410 B.C.	.22 .13 .64	Texoloc
*Tetel	AA43604	Unit A7, Feature 11, Lot 82 [A11-2S]	bell-shaped pit, near bottom	charred maize kernels (2)	AMS	-8.8	2405 ± 38	750–690 B.C. 670-640 B.C. 590–580 B.C. 560–400 B.C.	.15 .04 .01 .80	Texoloc
*Tetel	AA43605	Unit A15, Feature 15, Lot 112 [A15-1S]	round pit, middle	charred maize kernels (2)	AMS	-9.1	2400 ± 36	750–690 B.C. 660–650 B.C. 550–390 B.C.	.12 .03 .84	Texoloc

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Site	Lab Number	Provenience	Context	Material	Method	$\delta^{13}C$	^{14}C Years B.P.	Cal Range 2σ	Relative Area Under Distribution	Ceramic Complex
Laguna	AA94043	Unit F1, Feature 46, Bone 848	burial in bell-shaped pit	bone	AMS	-7.9	2554 ± 47	810–540 B.C.	1.00	Early Tezoquipan
*Laguna	AA65516	Area H, Feature 102, Square 24S, Lot 1633 [A102-2S]	pit	charcoal	AMS	-21.7	2507 ± 37	790–510 B.C. 440– 430 B.C.	.99 .01	Early Tezoquipan
Laguna	AA94045	Unit F3, Feature 83, Bone 2050	burial in pit	bone	AMS	-7.6	2502 ± 46	790–500 B.C. 490 B.C. 460–450 B.C. 440–420 B.C.	.95 .01 .01 .03	Early Tezoquipana
*Laguna	AA65514	Area H, Feature 105, Square 30H, Lot 1643 [A105-1S]	pit	charcoal	AMS	-23.4	2496 ± 37	790–510 B.C. 460–450 B.C. 440–420 B.C.	.97 .01 .02	Early Tezoquipan
*Laguna	AA63373	Unit F1, Feature 46, Zone 46-10, Lot 1428 [B46-2B]	bell-shaped pit, near bottom	charcoal	AMS	-23.8	2494 ± 38	790–500 B.C. 460–450 B.C. 440–420 B.C.	.96 .01 .03	Early Tezoquipan
*Laguna	Beta210313	Unit B1, Feature 13, Zone 27 [B13-2S]	midden	conifer charcoal	AMS	-26.1	2430 ± 40	750–690 B.C. 670–610 B.C. 600–400 B.C.	.21 .10 .69	Early Tezoquipan
*Laguna	AA63518	Area D, Feature 112, Square 64M, Lot 1703 [A112-1S]	pit	charcoal	AMS	-25.0	2399 ± 40	750–690 B.C. 670–640 B.C. 590–580 B.C. 560–390 B.C.	.14 .04 .01 .81	Early Tezoquipan
*Laguna	Beta210312	Unit B1, Feature 13, Zone 5, Lot 1071 [B13-1S]	midden	conifer charcoal	AMS	-23.0	2380 ± 40	740–690 B.C. 660–650 B.C. 550–390 B.C.	.09 .02 .89	Early Tezoquipan
Laguna	Beta216423	Area F, Feature 120, Square 24D, Lot 1773 [C120]	pit in house platform fill, bottom	charcoal	AMS	-10.4	2400 ± 40	750–690 B.C. 670–640 B.C. 590–580 B.C. 570–390 B.C.	.14 .04 .01 .81	Tezoquipan, stratigraphically "Late Tezoquipan"
Laguna	AA94044	Unit B2, Feature 10, Bone 81	locally redeposited burial	bone	AMS	-7.8	2309 ± 46	510–440 B.C. 420–350 B.C. 320–210 B.C.	.08 .58 .34	Tezoquipan, stratigraphically "Late Tezoquipan"
Laguna	AA87631	Area G, Structure 12L-5, Feature 166, Square N67, Lot 2332	face-down vessel in altar	charcoal	AMS	-25.1	1990 ± 39	90–70 B.C. 60 B.C.–A.D. 90 A.D. 110–120	.03 .96 .01	Tezoquipan, stratigraphically "Late Tezoquipan"
*Laguna	AA63519	Area D, Feature 110, Square 64M, Lot 1700 [A110-2S]	stone pavement or altar	charcoal	AMS	-24.5	1944 ± 41	40 B.C.–A.D. 130	1.00	Tenexac
Laguna	AA93566	Area I, Structure 12M-3, Feature 179, Lot 2562	circular stone Feature (granary?)	charcoal	AMS	-22.9	1858 ± 36	A.D. 80–240	1.00	Tenexac[a]
*Laguna	Beta262554	Area H, Square 24T, Lot 1631 [Lag-H3]	lens of charcoal in redeposited tepetate	charcoal	AMS	-23.7	1780 ± 40	A.D. 130–350 A.D. 370–380	.99 .01	Tenexac

Note: Calibrated using Calib 6.1.1 (Stuiver and Reimer 1993). AMS = accelerator mass spectrometry; LS = liquid scintillation.
[a] Limited number of offering vessels.

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Table 11.11. Other Radiocarbon Dates from La Laguna.

Site or Stream	Lab Number	Provenience	Context	Material	Method	$\delta^{13}C$	^{14}C Years B.P.	Cal Range 2σ	Relative Area Under Distribution
Teteles de Ocotilla	AA64090	Unit A, Feature 1, Lot 1011	between stones of terrace wall	charcoal	AMS	-16.4	3219 ± 44	1610–1570 B.C. 1560–1420 B.C.	.10 .90
Laguna	UNAM0915	Area I, Structure 12M-1, Square C1/8, Lot 2225	looter's trench	charcoal	LS	25.17	2795 ± 60	1120–820 B.C.	1.00
Laguna	AA93564	Area I, Structure 12M-1, between floors 7 and 8, Lot 2628	construction fill	charcoal	AMS	-24.4	2742 ± 38	980–810 B.C.	1.00
Laguna	AA93563	Area I, Structure 12M-1, Feature 187, Burial 13, Lot 2627	cremated burial	charcoal	AMS	-22.7	2548 ± 37	800–730 B.C. 690–660 B.C. 650–540 B.C.	.43 .17 .39
Laguna	AA94042	Unit B6, Feature 63, Bone 506	burial in pit	bone	AMS	-7.7	2523 ± 46	800–510 B.C. 440–420 B.C.	.99 .01
Laguna	AA87632	Area G, Structure 12L-3, Square N18, Lot 2375	ballcourt construction fill	charcoal	AMS	-23.3	2488 ± 40	780–490 B.C. 440–450 B.C. 440–420 B.C.	.94 .02 .04
Laguna	AA93568	Area G, Structure 12L-3, Feature 169, Lot 2400	pit in ballcourt construction fill	charcoal	AMS	-25.5	2474 ± 37	770–480 B.C. 470–420 B.C.	.91 .09
Laguna	UNAM0930	Area H, Structure 14M-1, Square 17O, Lot 2027	upper floor	charcoal	LS	23.74	2460 ± 60	770–410 B.C.	1.00
Laguna	UNAM0914	Area I, Structure 12M-1, Feature 162, Square C1/9, Lot 2234	upper floor pit	charcoal	LS	24.22	2450 ± 60	760–680 B.C. 670–410 B.C.	.24 .76
Laguna	AA93567	Area I, Structure 12M-3, Feature 183, Lot 2687	burial within platform	charcoal	AMS	-23.0	2444 ± 44	760–680 B.C. 670–610 B.C. 600–410 B.C.	.23 .15 .62
Laguna	AA87633	Area G, Structure 12L-1, Square N88, Lot 2412	upper floor	charcoal	AMS	-22.6	2229 ± 55	420–170 B.C.	1.00
Laguna	UNAM0913	Area I, Structure 12M-1, Square C1/8-9, Lot 2234	pit in upper floor	charcoal	LS	24.90	2220 ± 60	400–160 B.C. 140–120 B.C.	.98 .02
Laguna	AA63372	Unit F1, 0W-E section, contact of zones 66-1 and 100	lens of charcoal	charcoal	AMS	-24	2214 ± 51	390–170 B.C.	1.00
Laguna	Beta268147	Area G, Structure 12L-1, Feature 173, Square L89, Lot 2443	offering with obsidian bifaces	marine shell	AMS	-2.1	2160 ± 40	A.D. 90–320	1.00
Laguna	UNAM0916	Area I, Structure 12M-1, Square C1/8, Lot 2227	organic layer with daub in looter's trench	charcoal	LS	-24.4	2130 ± 55	360–270 B.C. 260–40 B.C.	.22 .78
*Laguna	Beta227414	Area H, Structure 14M-1sub, Feature 156, Square 20K, Lot 2101	posthole with in situ burning	charcoal	AMS	-19.6	2090 ± 40	340–330 B.C. 200–1 B.C.	.01 .99

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Site or Stream	Lab Number	Provenience	Context	Material	Method	$\delta^{13}C$	^{14}C Years B.P.	Cal Range 2σ	Relative Area Under Distribution
Laguna	AA93565	Area K, Structure 13M-1, Floor 1, Lot 2751	floor	charcoal	AMS	-23.3	2032 ± 32	160–130 B.C. 120 B.C.–A.D. 30 A.D. 40–50	.05 .92 .03
Laguna	UNAM0917	Area I, Structure 12M-1, Square C1/9, Lot 2232	upper floor	charcoal	LS	-24.0	2020 ± 55	180 B.C.–A.D. 80	1.00
*Laguna	AA63517	Area H, Structure 14M-1sub, Feature 106, Square 23S, Lot 1657	burned surface at foot of platform	charcoal	AMS	-25.4	2014 ± 39	160–140 B.C. 110 B.C.–A.D. 70	.02 .98
Laguna	AA87635	Area G, Structure 12L-1, Square M85, Lot 2429	upper floor	charcoal	AMS	-26.9	2008 ± 65	120 B.C.–A.D. 130	1.00
Laguna	AA87634	Area G, Structure 12L-1, Feature 171, squares L86–L87, Lot 2413	penultimate basin in floor	charcoal	AMS	-24.0	1982 ± 38	90–80 B.C. 50 B.C.–A.D. 90 A.D. 100–120	.01 .97 .02
Laguna	AA93562	Area K, Structure 13M-1, Feature 200, Lot 2573	fire pit in penultimate floor	charcoal	AMS	-23.1	1965 ± 37	40 B.C.–A.D. 90 A.D. 100–120	.94 .06
*Laguna	Beta227413	Area H, Structure 14M-1, Feature 154, Square 21L, Lot 2093	burned corner post of structure	charcoal	LS	-24.7	1920 ± 40	20–10 B.C. A.D. 1–180 A.D. 190–210	.01 .96 .04
*Laguna	AA87636	Area F, Structure 15M-1, Feature 118, squares F–G23–G24, Lot 1757	fire pit in upper floor of house platform	charcoal	AMS	-24.4	1913 ± 58	40–10 B.C. A.D. 1–230	.05 .95
*Laguna	AA65515	Area H, Square 30H, Lot 1636	rubble of structure collapse	charcoal	AMS	-21.8	1821 ± 35	A.D. 90–110 A.D. 120–260 A.D. 300–320	.03 .92 .04
Laguna	Beta268146	Area G, Structure 12L-1, Feature 173, Square L89, Lot 2443	offering with obsidian bifaces	charcoal	AMS	-24.9	1800 ± 40	A.D. 90–100 A.D. 130–340	.01 .99
Laguna	AA87630	Area G, plaza, Square N72, Lot 2281	floor level	charcoal	AMS	-22.8	1668 ± 41	A.D. 250–440 A.D. 490–530	.94 .06
Laguna	UNAM0914A	Area I, Structure 12M-1, Feature 162, Square C1/9, Lot 2234	upper floor pit	charcoal	LS	n/a	1580 ± 70	A.D. 260–280 A.D. 330–620	.01 .99
Laguna	AA63374	Area H, Feature 100, Zone 7	ditch fill	charcoal	AMS	-23.7	1146 ± 54	A.D. 730–740 A.D. 770–1010	.01 .99
Laguna	AA63375	Area H, Zone 9A, top 10 cm	top of soil A horizon buried under colluvium	Bulk organic matter	AMS	-18.2	1113±38	AD820-840 AD860-1020	.03 0.96

Note: Calibrated using Calib 6.1.1 (Stuiver and Reimer 1993). AMS = accelerator mass spectrometry; LS = liquid scintillation.

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Table 11.12. Previously Reported Radiocarbon Dates Associated with Formative Ceramics in Tlaxcala and Adjacent Parts of Puebla.

Site	Lab Number	Provenience	Context	Material	14C Years B.P.	Cal Range 2σ	Relative Area Under Distribution	Ceramic Complex
Xochitecatl	Tx2155	Pozo 2, capa IX	n/a	n/a	2760 ± 130	1310–740 B.C. 690–660 B.C. 650–550 B.C.	.95 .01 .04	Tlatempa
Tlalancaleca	Tx2146	Pozo 6, capa IX	n/a	n/a	2550 ± 1020	3120 B.C.–A.D. 1320	.99	Tlatempa
Xochitecatl	Hv6055	Pozo 2, capa X	n/a	n/a	2515 ± 90	810–410 B.C.	1.00	Tlatempa
Xochitecatl	Hv6056	Pozo 2, capa X	n/a	n/a	2485 ± 80	790–410 B.C.	1.00	Tlatempa
Tlalancaleca	Tx2145	Pozo 6, capa VI	n/a	n/a	2840 ± 270	1680–390 B.C.	1.00	Texoloc
Xochitecatl	Tx2154	Pozo 2, capa V	n/a	n/a	2530 ± 110	890–870 B.C. 850–400 B.C.	.01 .99	Texoloc
Tlalancaleca	Tx2148	Pozo 17, capa II	n/a	n/a	2330 ± 100	760–680 B.C. 670–180 B.C.	.11 .89	Texoloc
Tlalancaleca	Tx2149	Pozo 17, capa III	n/a	n/a	2280 ± 80	730–690 B.C. 540–110 B.C.	.02 .98	Texoloc
Tlalancaleca	Tx2150	Pozo 18, capa III	n/a	n/a	2250 ± 100	740–690 B.C. 660–650 B.C. 550–40 B.C.	.02 .01 .97	Texoloc
Xochitecatl	Hv6054	Pozo 2, capa VII	n/a	n/a	2205 ± 60	390–150 B.C. 140–110 B.C.	.96 .04	Texoloc
Xochitecatl	Hv6053	Pozo 2, capa V	n/a	n/a	2080 ± 65	350–290 B.C. 230–220 B.C. 210 B.C.–A.D. 60	.08 .01 .91	Texoloc
Tlalancaleca	Tx2153	Pozo N2 E7, capa V	n/a	n/a	2200 ± 1 70	760–680 B.C. 670 B.C.–A.D. 90 A.D. 100–130	.04 .94 .01	Tezoquipan
Gualupita las Dalias	Tx2164	Interior de estructura central	n/a	n/a	2180 ± 60	390–90 B.C. 70–60 B.C.	.99 .01	Tezoquipan
Tlalancaleca	Tx2152	Pozo N4 E3, capa III	n/a	n/a	1860 ± 100	50 B.C.–A.D. 410	1.00	Tezoquipan
Tlalancaleca	Tx2151	Pozo N5 E3, capa IV	n/a	n/a	1820 ± 90	A.D. 10 A.D. 20–410	.01 .99	Tezoquipan
Tlalancaleca	Tx2144	Pozo 6, capa IV	n/a	n/a	1700 ± 80	A.D. 140–200 A.D. 210–540	.07 .93	Tezoquipan
Teteles de Ocotitla	Tx2137	Pozo 1, elemento 2	outside tomb	charcoal	2230 ± 60	400–160 B.C. 130–120 B.C.	.00 .01	Early Tenanyecac

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Site	Lab Number	Provenience	Context	Material	14C Years B.P.	Cal Range 2σ	Relative Area Under Distribution	Ceramic Complex
Teteles de Ocotitla	Tx2143	Interior tumba, parte media	above lower stuccoed floor of tomb	charcoal	1940 ± 60	90–80 B.C. 50 B.C.–A.D. 230	.01 .99	Early Tenanyecac
Teteles de Ocotitla	Tx2139	Entierro 6	inside tomb	(charred?) plant matter	1840 ± 60	A.D. 50–340	1.00	Early Tenanyecac
Teteles de Ocotitla	Tx2141	Interior tumba, parte superior	under upper stuccoed floor of tomb	charcoal	1820 ± 60	A.D. 70–350 A.D. 370–380	.99 .01	Early Tenanyecac
Teteles de Ocotitla	Tx2138	Entierro 4	outside tomb	charcoal	1780 ± 50	A.D. 130–380	1.00	Early Tenanyecac
Teteles de Ocotitla	Tx2142	Interior tumba, parte media	middle part of tomb	charcoal	1690 ± 130	A.D. 70–610	1.00	Early Tenanyecac
Teteles de Ocotitla	Tx2140	Pozo 1, capa V	outside tomb	charred plant matter	1540 ± 60	A.D. 410–640	1.00	Tenanyecac

Note: Information taken from García Cook (1976a, 1976b). All samples were dated by conventional methods. No $\delta^{13}C$ reported. Calibrated using Calib 6.1.1 (Stuiver and Reimer 1993).

tery in Tzompantepec. White is second in frequency behind Amomoloc Plain in our sample, and García Cook and Merino Carrión (1988:276) describe Tzompantepec Blanca-Amarillenta first in their consideration of Tzompantepec pottery. In their other phase descriptions, this position is reserved for the most prominent type of the phase.

A second problem with the Ajalpan correlation is the presence of C1 figurines in Tzompantepec (García Cook 1974:7; Mora 1996:283 [1975]; García Cook and Merino Carrión 1988:278). Trejo (1997:Cuadro 1) provides a breakdown of Tzompantepec figurines by type; C1 constitutes half of the total sample of 16 figurines for that phase. Covarrubias (1957:Figure 2), building on suggestions by Vaillant (1930), thought C1 and related figurines—and El Arbolillo–Zacatenco materials more generally—marked the earliest village inhabitants of the Basin of Mexico. However, Tolstoy and Paradis (1970) reordered the early chronology of the Basin; it is now clear that C figurines are stratigraphically later than figurines of the D series (Niederberger 2000:Table 1; Tolstoy 1978:253–257). The presence of C1 figurines in Tzompantepec would place that phase after Manantial and thus sometime after 1000 B.C.

García Cook and Merino Carrión (1989:168–170) identified what they thought were two synchronic cultural spheres in the period 1200 to 800 B.C.: Tlatempa in Tlaxcala and Tlatempa del Valle to the south, in the Tlaxcala-Puebla Valley. Attributes of Tlatempa del Valle—represented at Moyotzingo (Aufdermauer 1970:láminas 1:12, 1:14)—include D1, D2, and "C9" [Pilli[4]] figurines (García Cook and Merino Carrión 1988:284, 1989:170). Tlatempa proper is instead characterized by figurine types that include C1, C10, A, B, and F.

According to current understandings of the Basin of Mexico sequence, the two sets of traits differ in time, with those for Tlatempa del Valle falling before 1000 B.C. and those for Tlatempa after 1000 B.C. Further, Tlatempa proper is also represented at Moyotzingo (Aufdermauer 1973:láminas 7–8) and at Xochitécatl (Serra Puche et al. 2004:figures 15–22), in both cases with dates in the early first millennium B.C.

We propose that Tlatempa is a valid phase in Tlaxcala and the northern part of the Puebla-Tlaxcala Valley, while Tlatempa del Valle is not. Two final points lay the basis for our proposed dates for Tzompantepec and Tlatempa.

First, in the Basin of Mexico, white-slipped dishes contemporaneous with D-series figurines (Manantial phase) are flat based with outsloping sides and direct rims. Niederberger (1987:Figure 569) points out that during the Tetelpan phase, flat-based dishes fade from the assemblage to be replaced by dishes with gently rounded bases and a break in the exterior profile. (We are *not* talking here about hemispherical bowls, which are part of most Early–Middle Formative assemblages.) The transition in base form is completed by the Zacatenco phase in the Basin of Mexico (Figure 11.18). This pattern is strong in that region (e.g., Ramírez et al. 2000:Figure 5 versus Figure 11; Niederberger 1976:134, láminas L and LI versus LII:1–15). However, the pattern does not seem to be generalizable to great

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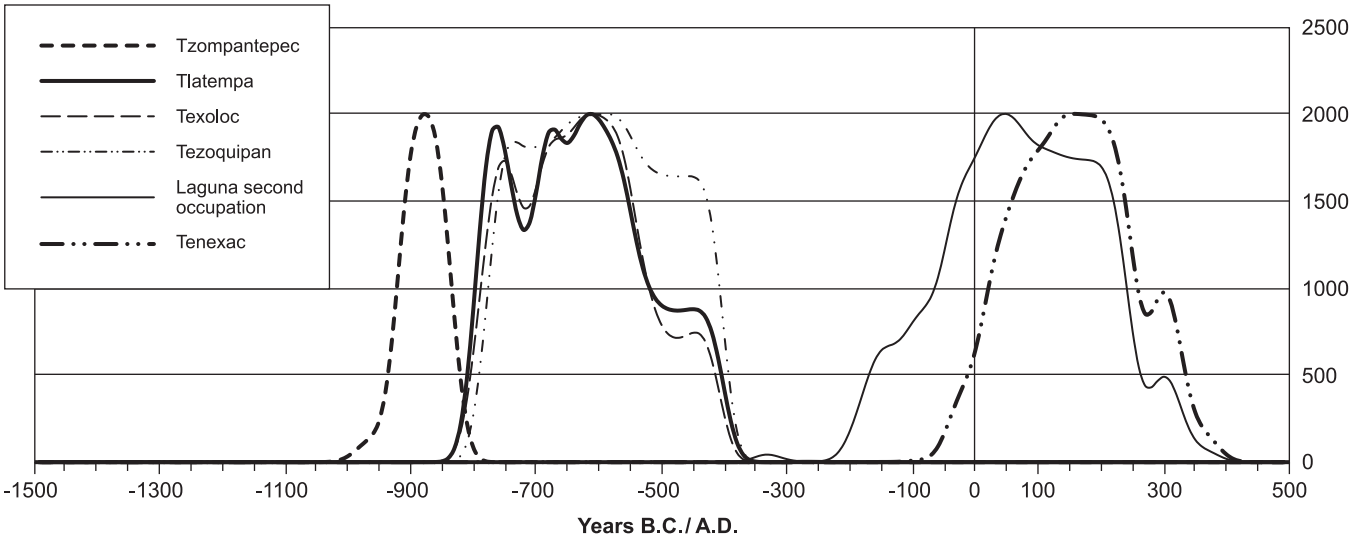

Figure 11.13. Summed radiocarbon probability for dates from the Chronological Sample, split by phase.

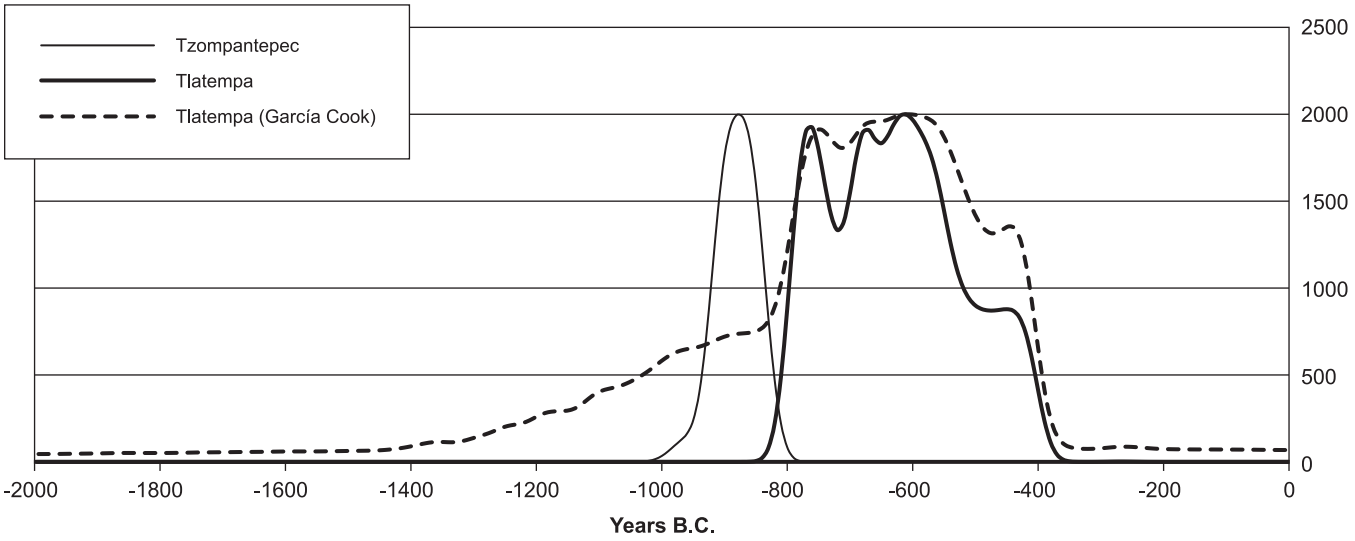

Figure 11.14. Comparison of García Cook's Tlatempa-phase dates with those reported here by means of summed radiocarbon probability distributions.

distances. Amatzinac White dishes with gently rounded bases appear already in the Barranca phase at Chalcatzingo (Cyphers 1987:Figure 13.13), while flat bases persist into the Middle Formative in Tehuacán and the Valley of Oaxaca (Drennan 1976:23; MacNeish et al. 1970:63–64). What might we expect in Tlaxcala? The closest site with a Manantial-horizon component is Moyotzingo, in the northern Puebla-Tlaxcala Valley. The sequence there mirrors that of the Basin, with the flat bases of Moyotzingo B (Aufdermauer 1973:Lámina 4) giving way to gently rounded bases in Moyotzingo C–D (Aufdermauer 1973:lámina 7–8).

Based on the above, we previously suggested a correlation of Tzompantepec with Tetelpan and Tlatempa with Zacatenco (Lesure et al. 2006:482–484). Correlation instead with earlier and later Zacatenco—Vaillant's (1931:211–215) Early and Middle Zacatenco or Tolstoy's (1978:256–257) El Arbolillo and La Pastora/Cuatepec subphases of Zacatenco—would fit better with the figurines, especially the scenario discussed in Chapter 10 of this volume, in which the Cuatlapanga type incorporates a mixture of stylistic attributes from C1 and B types. This revised proposal would constitute only a small adjustment in our previous suggestions—and such fine distinctions are at any rate well beyond what can be resolved by radiocarbon dating.

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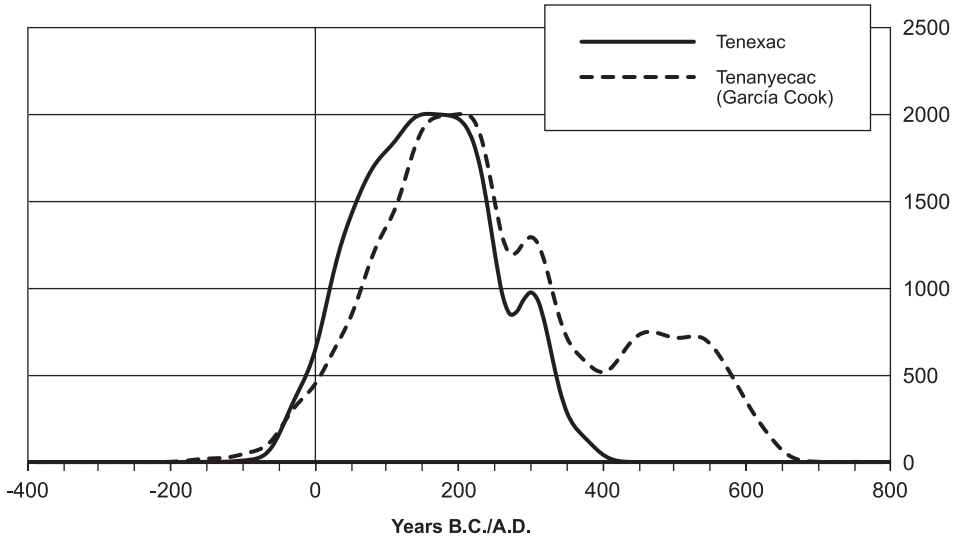

Figure 11.15. Comparison of García Cook's Tenanyecac-phase dates with those reported here for the Tenexac phase by means of summed radiocarbon probability distributions.

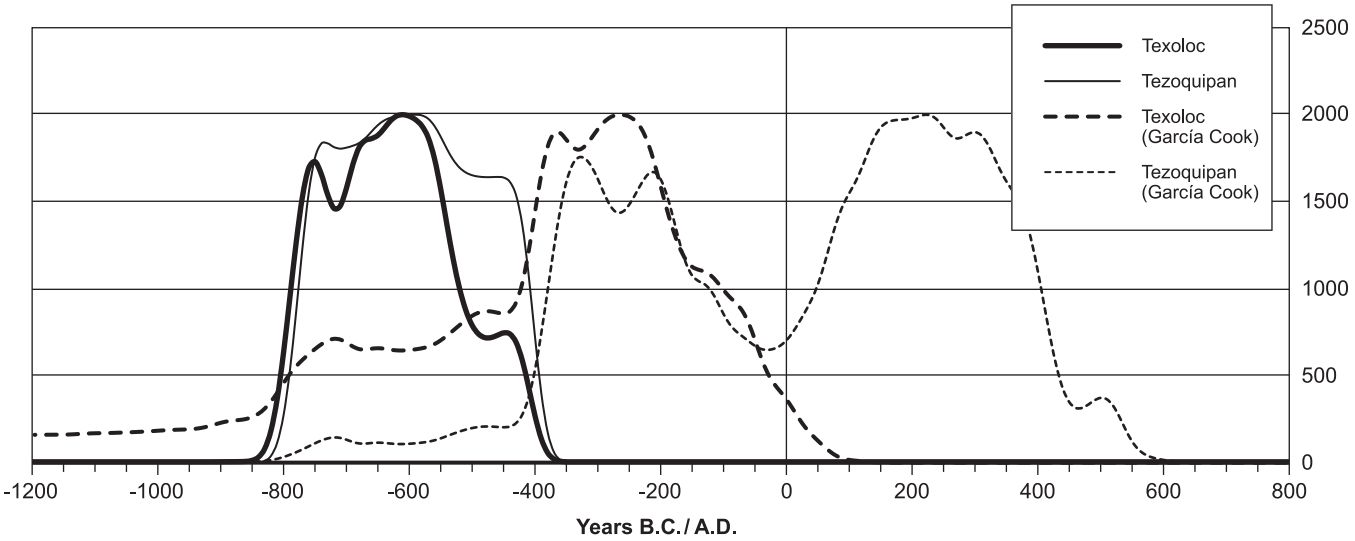

Figure 11.16. Comparison of García Cook's Texoloc- and Tezoquipan-phase dates with those reported here by means of summed radiocarbon probability distributions.

To sum up, we propose that Formative settlement in central Tlaxcala postdates both Moyotzingo A–B in Puebla and the Manantial phase in the Basin of Mexico. Central Tlaxcala was first settled by village agriculturalists after 1000 B.C., probably through migrations from the Puebla-Tlaxcala Valley. Tzompantepec is the earliest phase of occupation, and based on the predominance of white-slipped service ware, the presence of figurines of the C series, the mixture of flat and gently rounded dish bases, and the prominence among those same dishes of outsloping sides with direct rims, it should be correlated either with Tetelpan or Early Zacatenco in the Basin of Mexico. The dates we propose are 900 to 800 B.C. Tlatempa correlates comfortably with Zacatenco and probably specifically with Vaillant's Middle Zacatenco. We propose dates of 800 to 650 B.C.

Texoloc, Tezoquipan, and the Ticomán Tradition

Our next problem is the positioning of Texoloc and Tezoquipan, the phases for which we found the most discordance between our radiocarbon dates and the chronology propounded by García Cook (Figure 11.16). García Cook and

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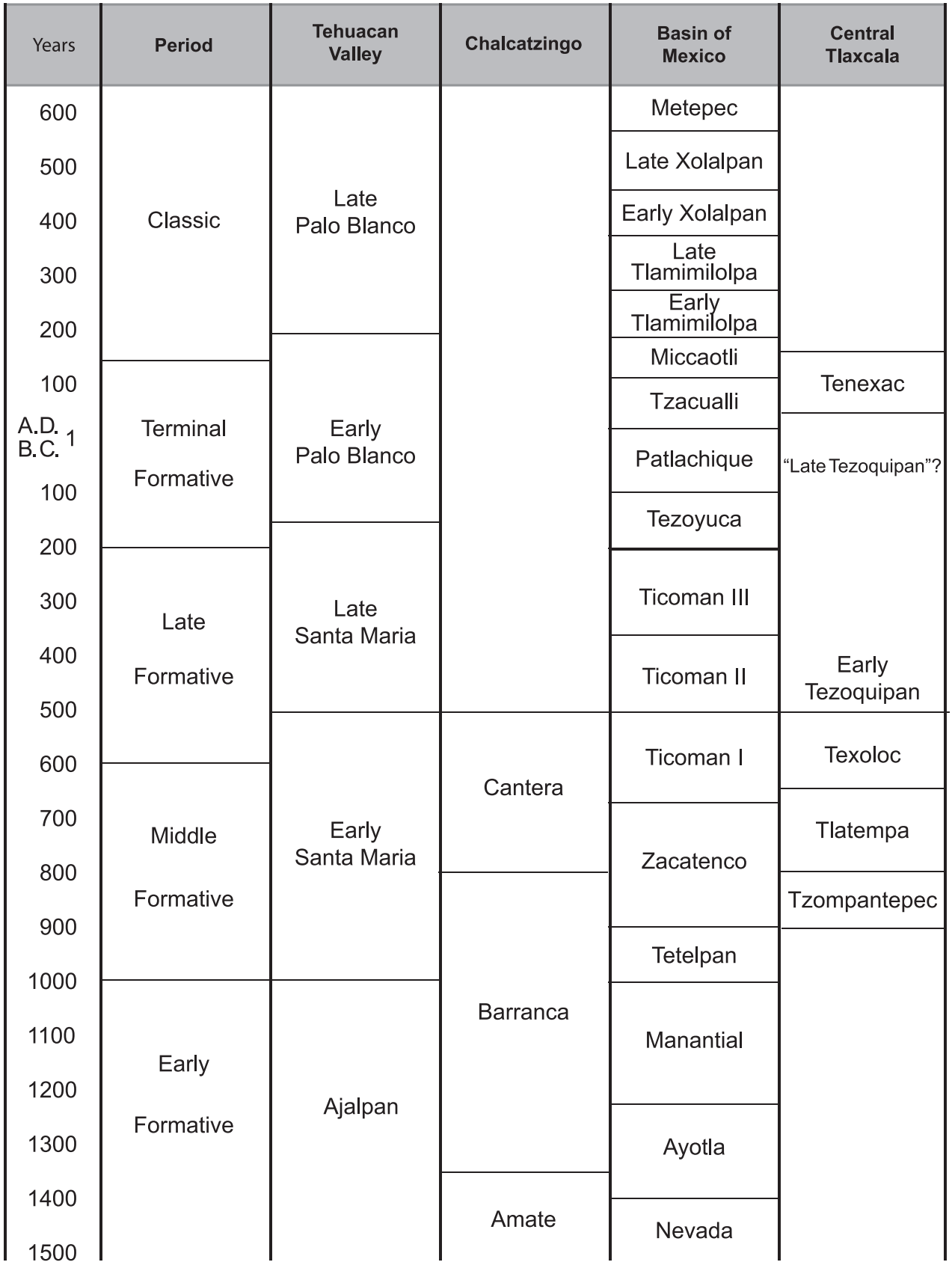

Figure 11.17. Our chronology for Tlaxcala (far right) compared to those of neighboring regions.

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Merino Carrión (1988) assigned dates of 800 to 350 B.C. to Texoloc, and García Cook (1974:10–11) correlated it with Middle Formative assemblages such as Middle Zacatenco and Early Tres Zapotes. Tezoquipan was dated 350 B.C. to A.D. 100 and correlated with Late or Terminal Formative assemblages such as Proto-Cholula, Late Ticomán, Late Cuicuilco, Tezoyuca, and Chupícuaro or other West Mexican cultures (García Cook 1974:12–13; García Cook and Merino Carrión 1988:301–302; García Cook and Rodríguez 1975).

We instead present the case for a much shortened Texoloc, and although we cannot fix an end date for Tezoquipan, we associate both phases with the Ticomán tradition of the Basin of Mexico. More specifically, we link Texoloc to Ticomán 1 and Early Tezoquipan to Ticomán 2, proposals that fit comfortably with our radiocarbon dates.

Ticomán 1, 2, and 3—Vaillant's (1931) Early, Intermediate, and Late Ticomán—form a larger culture-historical unit distinct from both the Middle Formative Zacatenco tradition (Vaillant 1931:329) and Terminal Formative complexes (Bennyhoff 1967:22).[5] Authors vary somewhat in dates they assign to the larger tradition—no doubt because other researchers besides ourselves have been bedeviled by the flat segment of the calibration curve at this time. Parsons et al. (1982) suggest 650 to 300 B.C. Tolstoy (1978) suggested 640 to 225 B.C., though he later seems to have moved the beginning of Ticomán 1 up to 550 B.C. (Tolstoy 1989b:Figure 12.2). Several authors favor an even later date for earliest Ticomán, perhaps 400 B.C. (Ramírez et al. 2000:37; Niederberger 2000:Table 1). Recalibration of relevant dates from Niederberger (1987), Rattray (1991), and Tolstoy (1989b) yields results for the Zacatenco–Ticomán transition that admit a range of possible interpretations from 650 B.C. to perhaps as late as 400 B.C. Our dates, for materials that include highly diagnostic E2 figurines, support the early end of this range.[6]

General characteristics of Ticomán ceramics include a prominence of red-on-buff and the presence of polychrome in the form of white paint on red-and-buff (Manzanilla 1985; McBride 1974:183; Tolstoy 1978:258–259; Vaillant 1931:330–334). Hollow tripod supports and red-slipped pottery are both more common than in the previous Zacatenco phase. Figurines include E, G, I, L, H1–H3, and H5. Type H4 is somewhat later than the rest of the H series and is particularly common subsequent to Ticomán 3, in the first Terminal Formative assemblages (Bennyhoff 1967:23–24; Tolstoy 1978:260).[7] In the pottery, the transition from the Ticomán tradition to the Terminal Formative sees a dramatic drop in red-on-buff in favor of burnished brown. Monochrome red is not prominent in Terminal Formative phases of the Basin.

Our Texoloc phase can be readily correlated in a general way with Ticomán. The E2-related figurines (our Ehco) are highly diagnostic. Red-on-brown surfaces are particularly common in the serving ware, and exact matches for our diagnostic Texoloc bowl form—the downcuriving everted–rim dish—make an occasional occurrence (McBride 1974:Plate 11a–h; Parsons et al. 1982:Figure 70d); we identified two examples in the Vaillant collection from Ticomán. Finally, the radiocarbon dates are compatible, particularly if one grants an earlier rather than later inception for the tradition.

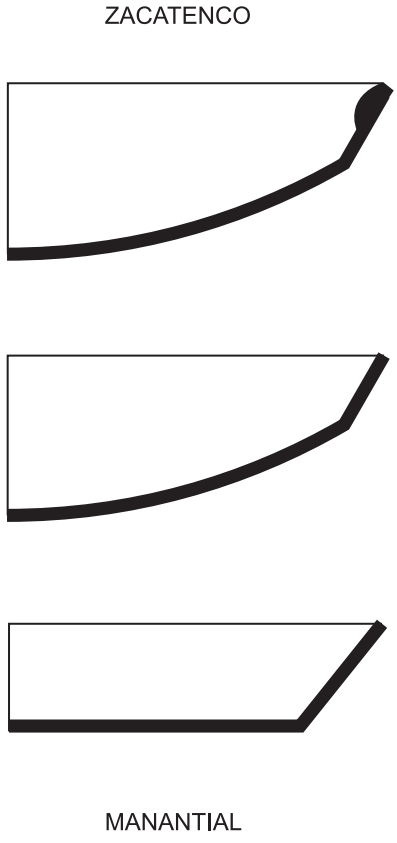

Figure 11.18. Schematic rendering of the shift in typical bowl base form in the Basin of Mexico from the Manantial phase (bottom) to the Zacatenco phase (top). Flat bases give way to rounded bases (with shoulders), and direct rims give way to rims modified in a variety of ways. Based on Niederberger 1987:Figure 569.

A proposed link between Tezoquipan and Ticomán also appears strong, given the salience of composite silhouette dishes with rounded bases, figurines related to types E, G, I, and L, and at least partial overlap of the radiocarbon dates. Surface finishes in the Ticomán collection look generally more similar to Texoloc than to Tezoquipan because of the prominence of red-on-brown instead of red (with particularly good matches for our Potrero type). Nevertheless, red slips at Ticomán are the same shade as Laguna Red, and plausible analogues for most of our Tezo-

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quipan types—Gazca, Xalmonto, and Palmas—are present. The white-painted Ticomán trichromes are absent in both Texoloc and Tezoquipan, except possibly for our type Xilomantla, which makes only a trace appearance in our Chronological Sample. Still, Ticomán Polychrome can be envisioned as a combination of Potrero with Gazca or Potrero with Xalmonto. Ticomán vessel forms are broadly similar to those of Texoloc and Tezoquipan, though they seem closer to those of the latter phase.

A correlation of Tezoquipan with the Ticomán tradition looks stronger when we consider the alternative—a correlation instead with the Terminal Formative complexes of the Basin. Important Terminal Formative traits that do not characterize Tezoquipan are: a sharp increase in burnished brown in relation to red-on-brown; a shift to short-rise composite silhouette bowls; a reduced overall prominence of composite silhouettes among bowl forms; and the presence of flat-based dishes (Rattray 2001:123–137; Sanders et al. 1975:129–132; Tolstoy 1978:260–261; West 1965).

Vaillant found that figurines provided the most reliable way to distinguish the three subphases of the Ticomán tradition (Vaillant 1931:330–333), and his proposed diagnostics have stood up to subsequent scrutiny (McBride 1974; Niederberger 2000:Table 1; Tolstoy 1978:258–259). Comparison with the Basin of Mexico sequence suggests a correlation of our phases with subdivisions of the Ticomán tradition that accords well with our radiocarbon dates and the occupation history of La Laguna. Comparison with sites in the Puebla-Tlaxcala Valley complicates matters somewhat. We lay out our proposals before considering complications.

Figurines of the Ticomán sequence are as follows: unburnished E series figurines with light-colored paste (especially E1 and E2) with a minority of G figurines in Ticomán 1; burnished G, I, and L figurines in Ticomán 2; and white-slipped or brown-burnished H1, H2, H3, and H5 figurines in Ticomán 3. Our Ehco type strongly matches E2, while our burnished Huehuetitla and Huiloac types appear to be local manifestations of G, I, and L (see Chapter 10). The excavations reported in this volume recovered single exemplars of H2 and H5 figurines; David Carballo recovered a few more such pieces in subsequent excavations—in a collection of Ehco, Huehuetitla, and Huiloac that numbers in the hundreds. Our proposal is that Texoloc correlates with Ticomán 1, Early Tezoquipan with Ticomán 2, and the hiatus at La Laguna with Ticomán 3. Based on our radiocarbon dates and our review of available first-millennium-B.C. dates from the Basin of Mexico, we propose approximately 650 through 500 B.C. for Texoloc–Ticomán 1, 500 through 400/300 B.C. for Early Tezoquipan–Ticomán 2, and 400/300 through 200 B.C. for Ticomán 3. From the standpoint of patterns in our collection, we would prefer a slightly earlier start date for Ticomán 1 than for Texoloc, since we think that villagers in central Tlaxcala were copying an established tradition and we have a single Ehco (E2) figurine from Tlatempa Feature A73 at Amomoloc. However, radiocarbon dates are not amenable to such fine distinctions, especially in the frustrating 800 to 400 B.C. interval.

Complications arise when we attempt to correlate our Texoloc/Early Tezoquipan with sites in the Puebla-Tlaxcala Valley. Tolstoy (1978:259–260) noted the apparent persistence of E-type figurines and variants thereof in that area beyond their period of occurrence in the Basin of Mexico. More generally, there appears to be persistence of Tezoquipan-related traits in the area through 100 B.C. At Xochitécatl, Serra Puche et al. (2004:figures 21, 22) place clear Texoloc diagnostics at 550 to 400 B.C.; in this case, differences with our placement of Texoloc seem likely due to the flat segment of the radiocarbon curve at this time. The figurines of Totimehuacan (C10, E, G) are a good match for our Late Tlatempa, Texoloc, and Early Tezoquipan, compatible with two early dates from that site (Spranz 1970:figures 45–46). If the E/G-related types continued in use through the late occupation of the pyramid—most likely between 260 and 50 B.C.—that would be something of a surprise. Still, a series of consistent third-through-first-century A.D. dates from Acatepec appears to have been associated with E/G figurines (Walter 1970:Figure 3). The pottery, as described by Walter (1970:27, figures 1–2) includes our Texoloc diagnostic B3-4 and other forms generally consistent with Tezoquipan; however, the match with Tezoquipan is far from close, and a correlation with Ticomán 3–4 (consistent with the radiocarbon dates) seems more satisfactory for the pottery than for the figurines. Red slips do not appear to be prominent; pedestal bases are significantly more common than in our Early Tezoquipan; large hollow supports reminiscent of Late Cuanalán (Manzanilla 1985:photos 13, 16) are present; and there are flat-based bowls, a trait more typical of Terminal Formative assemblages of the Basin (Tolstoy 1978:260). Seifele-Valencia (2007) reports ceramics broadly similar to ours from Cuauhtinchan Viejo but does not make much progress in subdividing the occupation span of 800 through 100 B.C.

The Second Occupation of La Laguna

The second occupation at La Laguna extended from approximately 100 B.C. through A.D. 150/200. We have identified a Tenexac phase that three radiocarbon dates place toward the end of the occupation, raising the question of what ceramic complex was in use early in the second occupation (Figure 11.13). Although we are not able to resolve that issue definitively here, David Carballo and Rodríguez hope to do so based on work in progress on materials from recent seasons at the site. Based on the data currently available, we propose that Tenexac correlates with the Tzacualli and Miccaotli phases of the Basin of Mexico and that the transition to Tenexac at La Laguna oc-

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curred around A.D. 50. The preceding ceramic complex at the site may have been a "Late Tezoquipan," in which red slips and composite silhouette, rounded-based bowls were prominent. However, we have conflicting evidence concerning the presence or absence of late types such as Metl Brown and Gonzalez Red-on-Brown in the early occupation, and we have one refuse unit (C133) that is not Late Tezoquipan but that does not seem to fit into Tenexac. We conclude that there remain three viable schemes for phases during the second occupation of the site.

We begin our discussion by noting diagnostic attributes of Terminal Formative pottery in the Basin of Mexico. The sequence of that area again serves as a useful point of reference, although the connections with Tlaxcala appear looser than in previous epochs. We then turn to a review of our evidence from La Laguna, including pottery, stratigraphy, and radiocarbon dates. We conclude by returning to the issue of correlations with other regional sequences.

Late Formative to Early Classic in the Basin of Mexico

Ticomán 3—Cuanalán in the Teotihuacan Valley—probably ended around 200 B.C. There followed three phases of the Terminal Formative—Tezoyuca, Patlachique, and Tzacualli—which were in turn followed by the Early Classic Miccaotli phase. There has been protracted debate over whether Tezoyuca was a Basin-wide phase or an intrusive unit that coexisted with other ceramic complexes (Bennyhoff 1967; Blucher 1971; Sanders et al. 1975:128–138; Sanders et al. 1979:98–105; West 1965). The upshot is that it should probably be considered a phase, equivalent to Cuicuilco 4 and Ticomán 4, but the issue is not of great relevance here because our materials do not particularly resemble Tezoyuca, which indeed falls in the hiatus at La Laguna. (See our description of Gazca White-on-Red in Chapter 9 for further commentary.) We concentrate our attention on Patlachique, Tzacualli, and Miccaotli; selected vessel forms for the last two phases are illustrated in Figure 11.19, where they are compared to Tenexac forms.

Patlachique-phase pottery (100 B.C.–A.D. 1) is described by Blucher (1971), Noguera (1943),[8] and Sanders et al. (1975). Compared to the Ticomán tradition, there is a dramatic rise in the frequency of burnished brown surfaces in relation to red-on-brown (Sanders et al. 1975:Table 37). Tecomates are still present in low numbers (Blucher 1971:313) but thereafter fall out of the sequence, and ollas with wedge-shaped or beveled rims appear (see Figure 11.19a–b for Tzacualli-phase examples of the latter). There are numerous bowls with composite silhouettes and rounded bases but also flat-based bowls with outsloping sides and direct rims. The collars of composite silhouette bowls are shorter relative to the height of the vessel that was typical in the Ticomán tradition (Sanders et al. 1975:132–133; West 1965:196). Composite silhouette bowls still have hollow supports (Noguera 1943:figures 2:12–2:17; Sanders et al. 1975:Figure 67). The considerable attention to polychrome, resist, and other decoration in the literature on Terminal Formative ceramics proves not very relevant for our discussion here due to our small sample size of decorated wares; for our comments, see descriptions of De Haro Polychrome, Yano Polychrome, and Tejales Incised in Chapter 9.

Pottery attributes of the Tzacualli phase (A.D. 1–100) are described by Rattray (2001), Sanders et al. (1975), Smith (1987), and West (1965). Brown-burnished surfaces persist. An important marker is the drastic decline in frequency of composite silhouette bowls and a proliferation instead of flat bases. The "bulk of the service ware" consists of flat-based bowls with rounded (slightly convex) or outsloping sides (Sanders et al. 1975:135), shown here in Figure 11.19g. Other forms at least sometimes have flat bases; these include a composite silhouette variety with rounded or outsloping lower walls, a vertical or incurving collar, and a direct rim (Figure 11.19d). Sometimes this last form has horizontal channeling on the collar (Figure 11.19e). In stark contrast to previous phases, vessel supports are absent.

In the Miccaotli phase (A.D. 100–170 [Cowgill 2014]), the dominance of burnished brown surfaces continues (Rattray 2001:153–161, figures 38–50). Wedge-rim ollas continue but are joined by ollas with outflaring necks and everted rims. An important addition to the assemblage is the outcurving (concave)-walled bowl with a flat base and nubbin supports (Figure 11.19h). The outcurving-walled bowl was to become characteristic of Classic-period vessel assemblages at Teotihuacan. It probably derived from Tzacualli prototypes with outsloping or rounded (convex) walls (Sanders et al. 1975:135; West 1965:196).

La Laguna: Second-Occupation Pottery from Areas B, F, and H

We have three Tenexac refuse samples associated with dates late in the second occupation and are convinced that the Tenexac complex was in use at the time of abandonment between A.D. 150 and 200. The more intractable questions have been: When did Tenexac start? What was the complex in use immediately before it? We consider those questions together in a review of evidence from areas B, F, and H.

Based on stratigraphic evidence, we would identify five refuse-filled pits with assemblages that do not match Tenexac as likely second-occupation deposits; an additional assemblage (Lag-H1), with characteristics matching Tenexac but in an earlier stratigraphic position, will be considered below. Feature B61, in La Laguna Area B, was a bell-shaped pit that appeared to have been dug from a ground surface associated with the second occupation, though the outline of its neck was somewhat obscured by the post-burial illuviation of clay. The other features of interest were all atop the residential platform in La Laguna Area F, Structure 15M-1. Features C120 and C121 were

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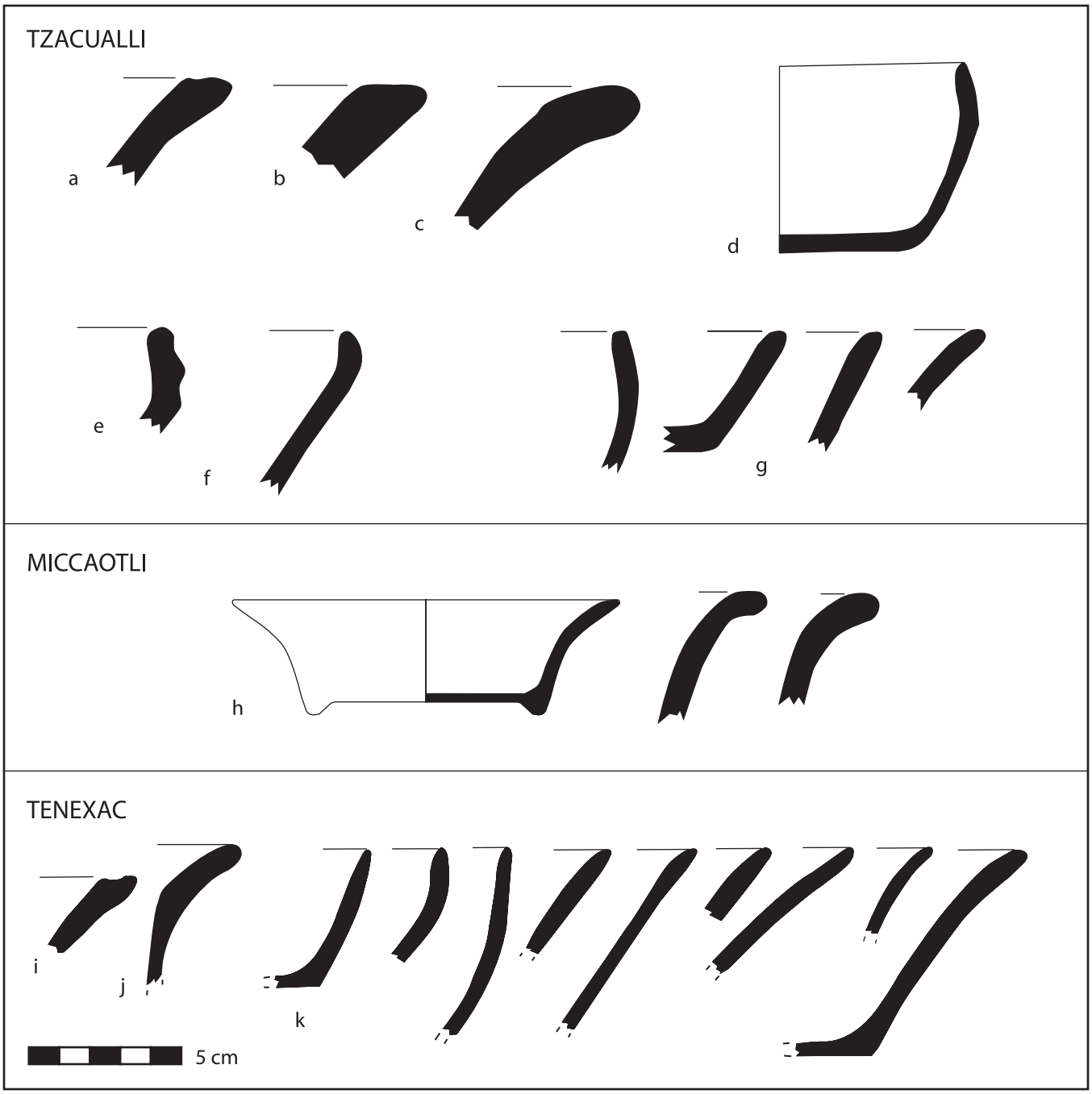

Figure 11.19. Selected Tzacualli and Miccaotli vessel forms (Basin of Mexico) compared to Tenexac (Tlaxcala). Tzacualli: (a–b) wedge-rim ollas; (c) everted-rim olla; (d) bowl with flat base and insloping collar; (e) bowl with horizontally channeled collar; (f) bowl with outsloping sides and short, vertical collar; (g) convex-walled and outsloping-walled dishes or bowls with direct rims (most seem to have had flat bases). Miccaotli: (h) Miccaotli-phase outcurving-walled bowls with flat bases and nubbin supports. Tenexac: (i) Metl Burnished Buff wedge-rim olla (rare); (j) Amomoloc Plain olla with interior ledge (perhaps similar to everted rim olla); (k) range of variation in Metl Brown convex-walled and outsloping-walled dishes or bowls with direct rims (most with flat bases). Tzacualli and Miccaotli images redrawn from: (a) Sanders et al. 1975:Figure 68e; (b–c) Rattray 2001:figures 38e, 38g; (d) Rattray 2001:Figure 33b; (e) Sanders et al. 1975:Figure 72a; (f) Sanders et al. 1975:Figure 76e; (g) Sanders et al. 1975:figures 74b, 74d, 75d, 75f; (h) Rattray 2001:figures 43c, 43d, 43f.

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bell-shaped pits, while C132 and C133 were open-profile pits; all four were dug from the surface of the platform. A maguey-roasting pit (C118), also atop the platform, yielded a radiocarbon date, as did the bell-shaped pit C120.

The 15M-1 platform was built on top of an erosional unconformity that had truncated the original soil profile and the necks of several infilled bell-shaped pits of the first occupation (Borejsza et al. 2008:Figure 5). Several lines of evidence point to this damage being inflicted at the end of the first occupation or during the period of relative abandonment that followed it. It thus seems clear based on stratigraphic arguments that the platform belongs exclusively to the second occupation of the site.

The features atop the platform should therefore all date to the second occupation of the site, at least 300 years later than Feature C123, an Early Tezoquipan pit beneath the platform. Despite this difference in time, the cultural contents of three of the features atop the platform—C120, C121, and C132—are indistinguishable from Early Tezoquipan assemblages (see figures 11.10 through 11.12). Diagnostics are consistent with Early Tezoquipan (Figure 11.5) rather than Tenexac (Figure 11.6), and no Terminal Formative markers such as those shown in Figure 11.19 are present. That pattern holds as well for Feature B61. On the face of it, even given hints of the persistence of E–G figurine traits in the Puebla-Tlaxcala Valley noted above, it would seem surprising that the material culture pertaining to the initial reoccupation of La Laguna would be identical to that before abandonment 300 years earlier. Prior to 400 B.C., our sequence registers readily observable changes in multiple aspects of material culture every 100 to 150 years.

A radiocarbon date from the lowest level of Feature C120 has a calibrated 2σ range of 750 to 390 B.C. (Beta-216423). That result would place the feature in the *first* occupation, raising the possibility that our stratigraphic inferences are incorrect. In other words, the platform might have been originally constructed during the first occupation and features C120, C121, and C132 might actually date to 500 to 400 B.C., consistent with seriation of the contents and the date from Feature C120. Carballo and Borejsza, however, hold to their assessment of the stratigraphy and suggest that the charcoal dated might have been old wood or might derive from the fill of the platform into which C120 was dug.

The maguey-roasting pit (Feature C118), also dug from the top of the platform, yielded a radiocarbon date with a 2σ range of 40 B.C. to A.D. 230 (AA87636). In other words, the roasting pit—unfortunately without diagnostic sherds—likely dates to our Tenexac phase, but it might instead fall in the preceding Late Tezoquipan interval. It could therefore indirectly date features C120, C121, and C132, though we would be forced to argue for stylistic stasis in pottery for the entire second half of the first millennium B.C. There is one further complication, however: Feature C133.

Feature C133—atop the same platform as features C120, C121, and C132 and quite close to the roasting pit, C118—was a complex deposit consisting of a pit dug from the platform floor level and apparently terminating at a large flagstone with nothing below it. The sherd content of C133 *cannot* appropriately be described as Tezoquipan, and it is certainly not from the same phase as C120, C121, and C132. We would be inclined to identify it as Tenexac, consistent with a strong presence of Metl Brown—except that the outsloping-walled bowls with direct rims (Figure 11.19k) that dominate all our other Tenexac samples are entirely absent. For that reason, although we include this feature in the Chronological Sample, we do not classify it as to phase. It might be an indication of significant synchronic differentiation among domestic assemblages of pottery during the Tenexac phase, but it could also represent our only clean sample of an immediately pre-Tenexac complex. Brown and red-on-brown surfaces predominate (Metl Brown and Gonzalez Red-on-Brown; Metl Burnished Buff is absent). Rounded vessel walls are common among bowls, as are everted or beveled rims. There are several tecomates or incurving-walled bowls with high shoulders. In at least one case, the base was flat (Figure 11.20; compare with Figure 11.19d).

One possibility is that C133 correlates with Patlachique. The colors would fit reasonably well, as would the low frequency of flat-based, outsloping-walled dishes. (In our case, that frequency is zero.) Various beveled and everted Patlachique-phase bowl rims are illustrated by Blucher (1971:figures 52d–f). The complete vessel shown in Figure 11.20 does not fit well in any of our local types (Chapter 9). It appears to resemble Blucher's (1971:Figure 54a) Patlachique-phase White-on-Orange-Brown more than it does anything described by Rattray (2001) for the Tzacualli phase.

If the C118 radiocarbon result indirectly dates C133 rather than C120 and its companions, then the occupation of the platform that generated C133 might be pre-Tenexac, in an era equivalent to Patlachique or Early Tzacualli. However, given the full calibrated range, this occupation might still date to after A.D. 50 and thus to the Tenexac phase.

David Carballo's 2006 investigations in Area H further complicate the picture. Excavations revealed an elite residence, Structure 14M-1, that was violently destroyed, probably as part of events that led to the second abandonment of the site. Three units of the Chronological Sample come from this area. One of those (Lag-H3) is associated with the occupation of Structure 14M-1. It is Tenexac and dates to the second century A.D. as suggested by the associated radiocarbon date (Beta-262554).

The other two units are of more interest at the moment. Neither is directly associated with a radiocarbon date, but both are indirectly associated with dates on architecture from Structure 14M-1 or the older structure over which it was constructed, Structure 14M-1sub.

Refuse sample Lag-H2 derives from the occupation

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of Structure 14M-1sub; it was sealed by the construction of 14M-1. That sample is thus bracketed by two dates on burned posts, one from the surface of 14M-1sub that puts construction of the earlier building probably between 150 and 50 B.C., and the other from the surface of 14M-1 itself, placing construction most likely between A.D. 50 and 130 (1σ; for 2σ see Table 11.11). The refuse sample seriates with the other Tenexac samples (for example, figures 11.10, 11.11). The associated dates would suggest that the Tenexac complex was likely present during the first century A.D., perhaps even early in that century.

Refuse sample Lag-H1 derives from the fill of that structure, 14M-1sub. Thus these materials should date earlier than construction of the platform, sometime between 150 and 50 B.C. There is no lower limit on the date of materials contained in the fill—the cultural debris could easily be from the first occupation of the site. Sherds are generally broken up, and there are numerous unidentified bowls, but the materials in the fill look basically Tezoquipan, with nevertheless a minor presence of our late types, Metl Brown and Gonzalez Red-on-Brown. There are outsloping-walled bowls (B2), our Tenexac diagnostic, though the base form in this case is unknown.

One possibility we considered was whether the fill of 14M-1sub or the later sample Lag-H2 might contain admixture from a still-unidentified complex represented at this point only by the assemblage from Feature C133. Extrapolating from that single feature, we would expect: a strong presence of Metl Brown and Gonzalez Red-on-Brown; high frequencies of rounded-walled bowls (B1, B4, B5); a presence of tecomates; high frequencies of beveled or everted rims among bowls, forms we would have perhaps misclassified as B3-2 or B3-5; and *absence* of outsloping-walled bowls (B2). The fill of 14M-1sub is too mixed and generally broken up to make much progress on this issue, but sample Lag-H2 is suggestive. Our Tenexac markers are present in strength, and the frequency of beveled or everted rims is similar to other Tenexac samples. However, rounded-walled bowls and tecomates make a strong appearance. Plausibly, this unit includes a mixture of Tenexac refuse with refuse of a C133-related, immediately pre-Tenexac complex.

The Second Occupation at La Laguna: Where we stand

We identify four alternative scenarios for the phase sequence of the second occupation at La Laguna. We review each in turn, considering its fit with previously published evidence from Tlaxcala and its general plausibility given comparisons with the Basin of Mexico's sequence. We reject the first scenario but cannot rule out any of the other three based on evidence currently available.

The first scenario is that the Tenexac complex was in use during the entire second occupation of the site, from approximately 100 B.C. through A.D. 200. That possibility is not in fact ruled out by the analysis in Figure 11.13 because the early-second-occupation dates are not directly associated with refuse deposits. Evidence potentially supporting the scenario is the presence of Tenexac traits in the refuse sample associated with the use of Structure 14M-

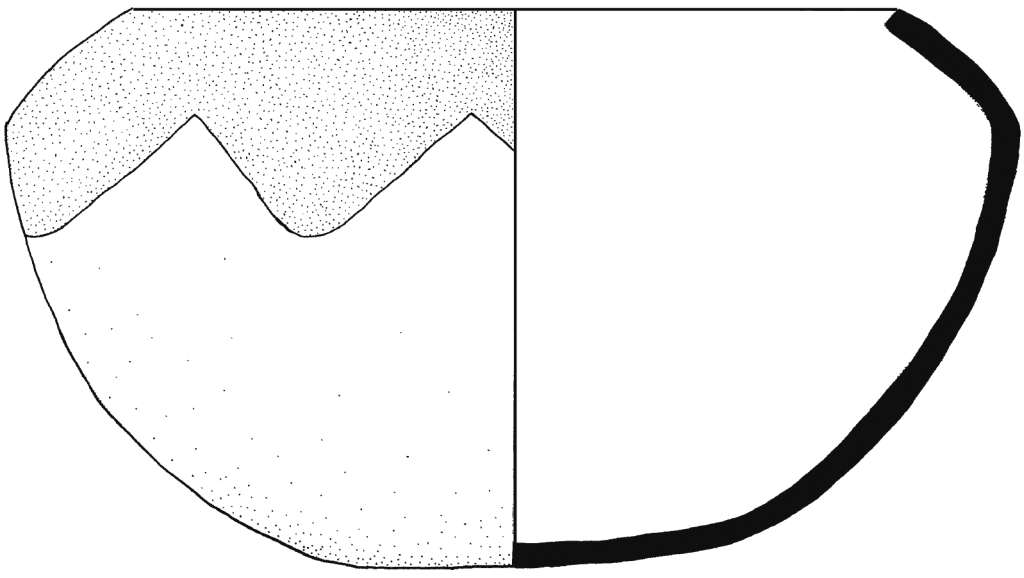

Figure 11.20. Complete vessel from Feature C133. The exterior is red above and white below, and the vessel does not fit into any of our types as described in Chapter 9. Compare, however, with Figure 11.19c.

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1sub in Area H (occupied during the first century A.D.) and materials in the fill of that structure (built in the late second or early first century B.C.).

Our main objection to the first scenario is based on comparison to the Terminal Formative sequence of the Basin of Mexico (figures 11.6 and 11.19). Unless we are wrong in identifying the Basin of Mexico—and Teotihuacan in particular—as the most likely source of stylistic influence on our area during the Terminal Formative,[9] a pottery assemblage dominated by brown, flat-based bowls with outsloping sides and direct rims—Tenexac—should have been impossible in our region prior to A.D. 1, the beginning of the Tzacualli phase. Tenexac may be correlated with Tzacualli or Miccaotli—an issue we turn to in a moment—but not Patlachique.

The second scenario would posit two successive ceramic complexes during the second occupation of La Laguna—a Late Tezoquipan (dominated by red-slipped composite silhouette bowls with rounded bases) from 100 B.C. through some point in the first century A.D., followed by Tenexac. Our Late Tezoquipan assemblage from features B61, C120, C121, and C132 could be accommodated as legitimately second-occupation deposits, with further support from Carballo's AA87631 date, directly associated with a single Laguna Red vessel, and Borejsza's AA94044 date, directly or indirectly associated with several Laguna Red, Laguna Red-and-Scraped, Tejales Incised, and Mesitas Brown vessels (see Note 2). This scheme would basically follow that argued by García Cook and Merino Carrión (1988, 1989), and it would thus be tempting, building on Figure 11.16, to equate Tenexac with Tenanyecac and to place the transition at A.D. 100.

However, several points lead us to favor a slightly earlier transition to Tenexac, perhaps around A.D. 50, no matter which scenario we end up selecting. The bracketing architectural dates for refuse sample Lag-H2, together with a strong Tenexac component in that unit—irrespective of whether it also contains a C133-related admixture—suggest a shift to Tenexac sometime *during* rather than at the very end of the first century A.D. Further, our characteristic Tenexac bowl (Figure 11.19k)—with *outsloping* (or slightly convex) rather than *outcurving* sides and a lack of any nubbin supports—seems a more satisfying match for Tzacualli (Figure 11.19g) rather than Miccaotli (Figure 11.19h) bowl forms (see also Sanders et al. 1975:figures 73, 77 and Rattray 2001:figures 33h–k, compared to Rattray 2001:figures 43:a–bb). It is worth noting that Miccaotli traits such as outcurving-walled, flat-based bowls with nubbin supports have been discovered in Tlaxcala—in the Tenanyecac tomb at Los Teteles de Ocotitla (García Cook et al. 1976:Lámina 1e)—suggesting that their absence at La Laguna is indeed significant. Tenexac most likely began during the Tzacualli phase and continued into Miccaotli.

The third scenario to be considered is one that would build on our suggestions above concerning a Patlachique–Tzacualli correlation for Feature C133 to reject the notion of "Late Tezoquipan" and to suggest instead that the C133 assemblage represents the material culture of the initial second occupation. Thus an as-yet-undescribed ceramic complex, dominated by brown slips and a high frequency of bowls with rounded walls and/or beveled or everted rims, would have been in use from 100 B.C. through A.D. 50. Under this scenario, features B61, C120, C121, and C132 are considered first-occupation deposits, in keeping with the seriation (figures 11.10 and 11.11) but not with our assessment of stratigraphy. Carballo and Rodríguez are currently assessing it in their ongoing ceramic analysis, but at this point we do not favor this scenario. Mainly we find implausible that a 150-year-long phase with considerable construction activity would have left so little impact on the samples of refuse we have recovered in excavations in multiple parts of the site. If the assemblage from C133 actually represents a distinct phase, we suspect it was short.

That last point leads directly to our fourth and final scenario. Maybe there were in fact three successive phases during the second occupation: a Late Tezoquipan complex, followed by a Patlachique/Tzacualli-related complex (seen in C133), followed by the Tzacualli/Miccaotli-related Tenexac complex. This final scheme seems consistent with most of our evidence, but it really remains at this point just a suggestion to be addressed with ceramic analysis still in progress.

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[1] The latter seems more likely in view of the very high frequency of Palmas Black-and-White in an assemblage recently excavated by Borejsza and Rodríguez at the site of Calaveras and placed by other lines of evidence in the latter part of the Texoloc phase.

[2] Sample AA87631 derives from an offering consisting of a single Laguna Red vessel in the ceremonial core of the site. Sample AA94044 is from a burial in Feature B10 in Ardillas B2 and B6, respectively. Borejsza identifies two Formative ground surfaces in this area, separated by a colluvium deposited at the end of the first occupation or during the hiatus. The calibrated date falls squarely within the hiatus. Feature B10 had a small Laguna Red O5-2 composite silhouette olla with a sharp edge separating the collar/neck and base. This is our only record of this form at La Laguna. Moreover, we suspect that this feature represents items that were dragged out from Feature B60, a damaged stone cist that contained two sets of offering vessels. The five vessels are a Laguna Red B6-1a (with solid conical feet), a Mesitas Brown B3-4, a Laguna Red-and-Scraped B6-2c, and two Tejales Incised vessels, Form B6-2b.

[3] It is not helpful, for instance, that what Parsons et al. (1982) referred to as First Intermediate 2 (FI2) corresponds to FI5–FI7 in Tolstoy's usage while Tolstoy's FI2 is Parsons et al.'s FI1-A.

[4] Niederberger 1976:209–211 has shifted C9 out of the C series and renamed it Pilli, since it turns out to be considerably older than the other C types and unrelated stylistically.

[5] Vaillant (1931:329) found such obtrusive changes in material culture between Middle Zacatenco and Late Zacatenco (Early Ticomán) that he thought the shift marked the arrival of a new group of people at the site of Zacatenco.

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[6] Borejsza and Rodríguez's recent excavations at the site of Calaveras, some 5 km west of Las Mesitas, recovered an assemblage of Formative ceramics in association with radiocarbon dates that fall into the pre-400 B.C. plateau on the calibration curve. The collections key out as Texoloc but contain a proportion of reds close to 50 percent and in several other respects presage a transition to Tezoquipan. This lends further credence to our pushing back the inception of the Tezoquipan phase.

[7] "Ticomán 4" was identified by Bennyhoff among Vaillant's materials based on comparisons with Cuicuilco (Tolstoy 1978:260).

[8] Noguera refers to the materials as Tzacualli, but they are now understood as Patlachique (Blucher 1971:31).

[9] We have considered Cholula as an alternative. Bennyhoff (1967:24), for instance, suggested that flat-based bowls in the Tezoyuca and Patlachique phases in the Basin might derive from Cholula. However, Uruñuela et al. (2009:140) have recently concluded that "prior to the Common Era, nothing suggests that Cholula prevailed over neighboring communities like Coapan, Colotzingo, Totimehuacan, or Xochitécatl." Further, if we accept Walter's (1970) dates from Acatepec as associated with the material he illustrates, it seems unlikely that any Tenexac-like assemblage would have been available in the southern Puebla-Tlaxcala Valley in the last two centuries B.C. By the Tzacualli phase (A.D. 1–100), Teotihuacan is certainly the most likely source of stylistic influence in our area.

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CHAPTER 12

Macroregional Research Topics for Formative Central Tlaxcala

Richard G. Lesure

AS NOTED IN Chapter 1, our reformulated research program of 2003 emphasized the importance of setting the Formative occupation of the study region into its macroregional context. That effort is a central concern for volumes 2 and 3 of *Formative Lifeways in Central Tlaxcala*, which will explore macroregional dimensions of, to put it briefly and respectively, the means of production and the relations of production. The goal of this chapter is to develop a framework for macroregional investigation suitable to the study of Formative Mesoamerica in general and to central Tlaxcala in particular.

A MULTISCALAR FRAMEWORK FOR INVESTIGATING FORMATIVE MESOAMERICA

Interest in macroregional perspectives on social change in ancient Mesoamerica has been in large part propelled by the gradually accruing record of surface surveys (Balkansky 2006; Feinman and Nicholas 1991; Kowalewski 2004; Nichols 1996). A central feature of that record is variation in settlement history from region to region, and the task for macroscale analysis is to explain that variation. Kowalewski (2004:89) establishes daunting requirements for macroregional studies—refined chronologies and full-coverage survey over tens or hundreds of thousands of square kilometers—which his own example does not meet (as he notes; page 93). The implication is of course that macroregional work must be a collective, collaborative project. Mesoamerican archaeologists need to develop frameworks for macroregional work that encourage and facilitate incremental contributions on the basis of a variety of data sets. Survey evidence is obviously important, but for our purposes a central methodological issue will be how to assess the macroregional implications of the detailed but necessarily small-scale data from excavations.

Macroregional analysis is necessarily multiscalar. It joins rather than replaces analysis at smaller scales and in addition demands efforts to trace interrelations among scales. Thus, while it is important to identify emergent properties of large-scale systems (Blanton and Peregrine 1997; Kowalewski 2008:246), it is also necessary to consider how varying local outcomes feed back into larger processes (Balkansky 2006:58; Feinman 1999:53–54). Chase-Dunn and Hall (1993:851) may claim that the world system is "the fundamental unit of social change," but their conception of world systems is itself multiscalar, subsuming units of multiple sizes. For instance, it posits multiple networks of interaction (bulk goods, prestige goods, information, and political/military networks) that differ in scale (Chase-Dunn and Hall 1997:52–55). The "early farming dispersal hypothesis"—the idea that agriculture spread from relatively few heartlands across the world, often by migration, and left traces in the distribution of languages that persist to the present—is one of few recent synthetic, large-scale proposals that concern Formative Mesoamerica (Bellwood 2005, building on, e.g., Renfrew 1987). I argue in the next section that this is an important and stimulating contribution even though the model itself, as applied to Mesoamerica, appears to be in some jeopardy. A key concern, elaborated by Wylie (2002) in a critique of Renfrew's earlier formulations of the farming dispersal hypothesis, is that large-scale claims need to be compatible with the processes observed to be operating at smaller scales.

Often the multiple scales of analysis can be conceived as *nested*—from the activity area to the region and beyond (Flannery 1976a:5–6; see also Balkansky 2006:55). Chase-

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Dunn and Hall (1997:53) find that networks of interaction in world systems are typically nested, with information and prestige goods networks covering the greatest distances, bulk goods exchange the smallest, and political/military interaction intermediate. Still, large-scale analyses examining interactions and boundaries will not necessarily yield a nested hierarchy of spatial units. Long-distance interactions in Formative Mesoamerica are a case in point. Exchanges of preciosities, iconography, and ritual practices between elites often resulted in intensive sharing between distant locations not replicated in intervening areas. The stylistic relations between the Middle Formative sites of Chalcatzingo and La Venta are a striking example. Perhaps even more interesting than the convergence of sculptural traditions is the shared use (at the household level) of the C8 figurine type. The type is common at Middle Formative Chalcatzingo and a cluster of surrounding sites but rare across the rest of Central Mexico (Cyphers 1988; see also Grove and Gillespie 1984). The linkages here skip over vast intervening areas to connect distant points. They are better conceived as networks than as evidence of a vast spatial unit subsuming numerous intervening regions.

One concern is the structure or *systemic logic* of supraregional systems. Wallerstein (1974) emphasized the role of a division of labor between regions in the production of necessities. Blanton and Feinman (1984), inspired by Schneider (1977), showed that long-distance interactions in ancient Mesoamerica involved exchanges of prestige goods and sacred knowledge more than necessities. That point becomes a common feature of premodern world systems in the comparative framework developed by Chase-Dunn and Hall (1997). Those authors review a spectrum of theories concerning systemic logic (pages 20–26). They favor the term *mode of accumulation* over *division of labor* or *mode of production* as better emphasizing the "institutional mechanisms by which labor is mobilized and social reproduction is accomplished" (page 29). Although the expression itself is not ideal, this general understanding of systemic logic directs attention to key issues while retaining the flexibility necessary to cover very different sorts of systems. A key point is that systems may change not just in substance (peripheries becoming cores and so forth) but in terms of their structural logic (Chase-Dunn and Hall 1997:29–32; Feinman 1999:53-54). Given the wide potential for variability and transformation, Bintliff's (1997) macroregional analysis of the ancient Aegean seems a promising approach. He experiments with a series of models that posit a variety of processes or systemic logics. At issue are their relative explanatory powers and the possibilities for combination.

An important concept for the investigation of supraregional processes is Kowalewski's (1995:154–160, 2004:90) notion of *concordant change*. The term is most usefully applied as an observation of synchronous, large-scale patterning—"the pattern of ups and downs at the same time across a macroregion" (Smith 2002:320)—that suggests common causal processes operating at a large scale. Drawing on Willey (1991), Balkansky (2006:58) suggests that "macroregional concordance was among the key structural properties of Mesoamerican civilization." The suggestion is provocative, though strictly speaking—to avoid slippage between concordance as explanadum or explanans—it might be better to say that concordant change was a property of *the observed record of* Mesoamerican civilization. It is not something that explains Mesoamerican culture change but rather something that itself must be explained. Certainly, the simultaneous shift to the Formative in multiple, widely dispersed locales around 1800 B.C. is a good example (Clark and Cheetham 2002; Lesure 2008), as are the cycles of integration and divergence documented by Smith (2002). Both of those patterns suggest topics for macroregional work.

To summarize the discussion thus far, large-scale concordances in various classes of evidence establish the need for analysis at macroregional scales. Such analysis necessarily joins rather than replaces that at other scales, and an important concern will be interrelations between scales. Constituent scales may be spatially nested, but they may also intersect in more complex ways. We can expect emergent properties at supraregional scales, and identification of systemic logic is an important theoretical concern.

Archaeologists have applied the term *macroregion* to entities of various sizes. At the smaller end of the spectrum, it has been applied to two or more contiguous regions; a macroregion would thus be measured in thousands of square kilometers rather than the hundreds that would be typical for a region (Balkansky 2006:54). Kowalewski (2004:88–89) would apply *macroregion* to a whole series of scales above the region, ranging up to units measured in hundreds of thousands of square kilometers. Smith (2002) favors the upper end of that range, referring to all of highland Mesoamerica or even Mesoamerica itself as a single macroregion. Finally, the term has been used particularly by Upham to refer to continental-scale linkages *between* culture areas: the Southwest and the Great Basin (Upham 2000) or the Southwest and Mesoamerica (Upham et al. 1992).

A macroregional concept confined to the smaller end of this continuum—along the lines suggested by Balkansky—seems most helpful for the investigation of Formative Mesoamerica. Thus a macroregion in the analyses to be developed in our volumes 2 and 3 will be a number of contiguous regions with long-lasting historical connections. Those we identify in Mesoamerica are measured in tens of thousands of square kilometers but not hundreds of thousands. It is worth emphasizing that *macroregion* is a heuristic concept that might be defined and used in a variety of ways. The claim being made here is that restricting the term to relatively "small" entities (compared to the full spectrum of uses of the term) is helpful specifically for the study of Formative Mesoamerica because it draws attention to an important scale of analysis that remains under-

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developed in comparison to regional and the interregional scales. Finally, while I propose to confine the term to a certain range of scales (larger than the region, smaller than the culture area), macroregions are not fixed entities. Their boundaries may shift over time, and different investigators might define them in varying ways.

In the remainder of this section, I develop this proposal concerning use of the term *macroregion* by situating it among other important scales for the study of Formative Mesoamerica. It is useful to identify at least five scales (beyond that of the individual site): regional, macroregional, interregional, culture-areal, and continental.

Regions are defined based on physiographic and/or cultural criteria. They may be river valleys or coastal plains in which persistent ties in material culture indicate interactions within an integrated settlement system (Balkansky 2006:54; Kowalewski 2008:226). Analysis at the regional scale is well established in Mesoamerica (Flannery ed. 1976; Nichols 1996; Sanders et al. 1979). Prominent among the host of topics investigated at this scale are relations between directly interacting communities.

Macroregions are composed of multiple, contiguous regions. Generally we expect some degree of stylistic unity within macroregions, suggesting interaction, but at a less intensive level than within any given region. Unities of material culture within a macroregion may fluctuate over time (Smith 2002; Willey 1991). The history of populations and their interactions are particular topics of investigation in the Formative, though late in this era appear supraregional political units that require attention at this scale (e.g., Marcus and Flannery 1996:195–207). Questions of linguistic unity, disunity, or divergence are also relevant. Examples of work at this scale include Lowe's (1977) efforts to trace the boundary between Mayan and Mixe-Zoquean speakers in ancient Chiapas; the proposals of Sanders et al. (1979:95–97) concerning the expansion of Formative-era agriculturalists into the Basin of Mexico; Clark and Pye's (2000:241–242) proposed link between abandonment of the Mazatán and El Mesak zones of the Soconusco and population coalescence at La Blanca; and Flannery and Marcus's (1983) goal (in *The Cloud People*) of tracing the divergent evolution of Zapotec and Mixtec civilizations.

In Formative Mesoamerica, long-distance exchanges of preciosities, iconography, and sacred knowledge extended well beyond the macroregion. In some cases, they were pan-Mesoamerican. It is useful to distinguish analysis at this *interregional* scale from that at the macroregional scale because the interactions involved had a different structure. For instance, in cases such as relations between Chalcatzingo and La Venta, interregional interaction yielded stylistic similarities between distant locations that were not shared by vast intervening tracts. Although the interregional scale involves larger distances than the macroregional scale, its focus on networks and interlinkages means that intervening macroregions do not nest within it the way regions nest within macroregions. Instances of concordant change certainly occur at the macroregional level—abandonments in Mazatán and El Mesak and expansion at La Blanca are good examples—but concordance at pan-Mesoamerican scales is of particular interest and an important topic for interregional analysis. Long-distance interaction appears to have been a key feature in the emergence of social inequality and sociopolitical complexity, and of course the dissemination of the "Olmec" ("X-Complex," "pan-Mesoamerican") art style is of great interest in interregional research (Blomster 1998, 2002; Cheetham 2009, 2010; Clark 2007; Flannery and Marcus 2000; Grove 1989; Grove and Gillespie 1992).

The *culture area* is more properly the spatial unit in which macroregions are nested; Mesoamerica comprised multiple constituent macroregions. Debates over everything "Olmec" again raise important issues concerning the history of Mesoamerica as a culture area; for a particularly bold version, see Matos Moctezuma (2000:figures 3–5). Given the linguistic map of late pre-Hispanic Mesoamerica, it seems certain that early Mesoamerica was linguistically and culturally heterogeneous. Further, the macroregion is an important scale of resolution for investigating that heterogeneity (Lesure 2011b:10–12). The interplay of persistent heterogeneity and increasing convergence is a topic of interest at scales even larger than that of the culture area (e.g., Taube 2000).

At the *continental scale*, developments in Mesoamerica are investigated in larger contexts that include South America, Central America, the Gulf Coast, the Caribbean, and/or the Southwestern United States. Of fundamental importance as a larger context for the Mesoamerican Formative is the much earlier spread of maize well beyond the borders of Mesoamerica (Piperno and Pearsall 1998). Other topics include the possible derivation of pottery making from Central America, perhaps via "dependent invention" (Clark and Gosser 1995), and Bellwood's (2005) early farming dispersal hypothesis, which posits migration of agriculturalists from Mesoamerica to the U.S. Southwest.

RESEARCH TOPICS AT THE MACROREGIONAL SCALE

The reformulated research plan for our 2003–2004 seasons involved understanding Formative developments in the study area in relation to long-term historical processes at a macroregional scale. We have since related the late initiation of the Formative in central Tlaxcala to a history of gradual expansion of agriculturalists from more favorable zones to the south (Lesure et al. 2006), a scenario that helps account for the destructive persistence, throughout the Formative of our region, of the practice of dry farming on erodible slopes (Borejsza et al. 2011). In this section I develop generalized macroregional research topics for the Formative era through a contrast with concerns at the continental, culture-areal, interregional, and regional scales. The effort is far from comprehensive in terms of the full range of topics that might be pursued at the macrore-

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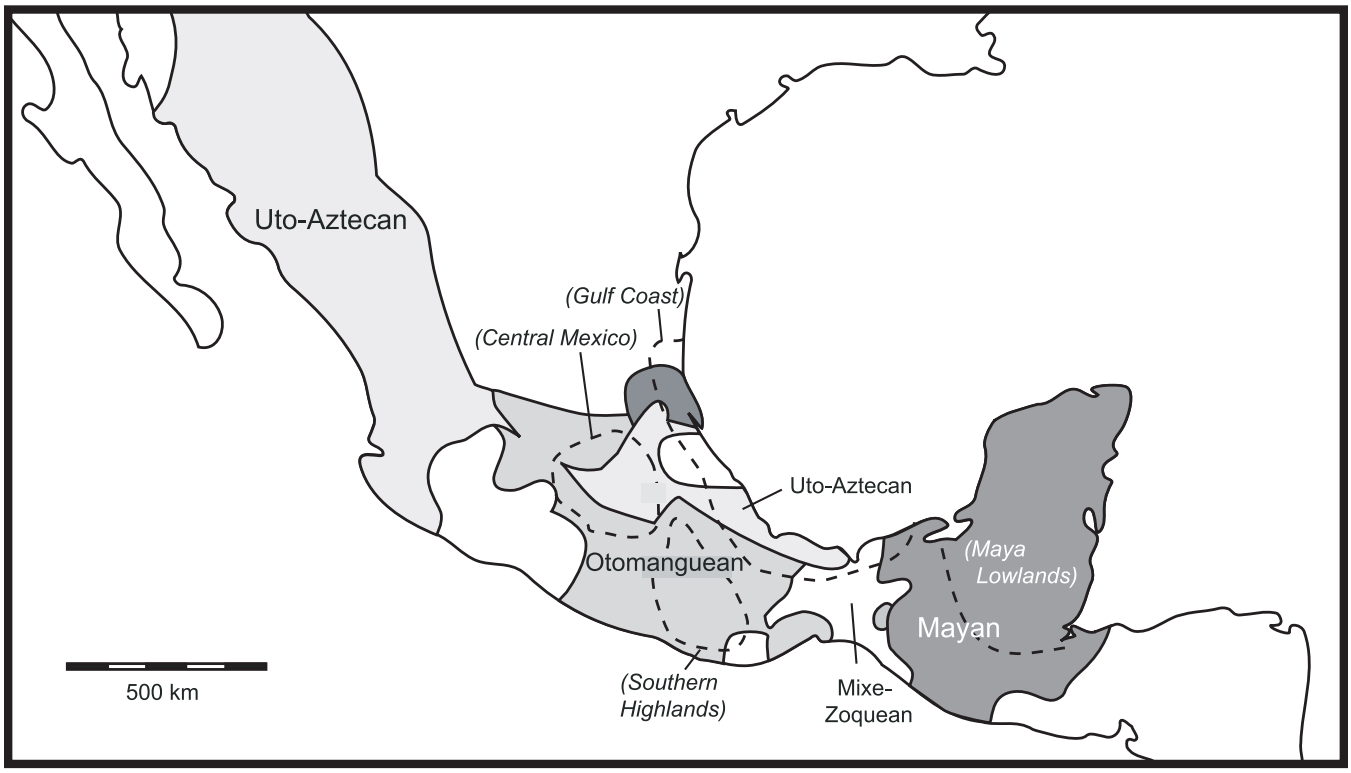

Figure 12.1. Distribution of four major Mesoamerican language families (Uto-Aztecan, Otomanguean, Mixe-Zoquean, and Mayan) approximately 3,000 years after the transition to agriculture (redrawn from Kaufman 1974). The dotted lines show several archaeological macroregions, with labels in parentheses.

gional scale. I focus on identifying concepts, bodies of theory, and unresolved problems relevant to the study of the specific materials to be covered in our subsequent volumes.

A Macroregional Agenda from Continental and Culture-Areal Concerns

I first consider how continental and culture-areal work, specifically the early farming dispersal hypothesis developed by Bellwood (2005), helps provide a research agenda at the macroregional level. Bellwood proposes that the development of effective agricultural economies was a rare phenomenon in prehistory. The demographic success of these new subsistence systems converted regions of early agriculture into heartlands from which farmers migrated radially, pushing aside or incorporating surrounding hunter-gatherers and low-level food producers. The scale of these expansions was continental in scope. Further, expanding farmers brought their languages and genes with them. Bellwood, elaborating on earlier suggestions by Renfrew (1987, 1992, 2003; Bellwood and Renfrew 2003; Cavalli-Sforza 1997), observes a global occurrence of language families with very wide distributions. He suggests that these mark persistent traces of expansions by early farmers (Bellwood 2005:Chapter 10).

There are all sorts of potential complications with the application of this scheme to Mesoamerica (see Lesure 2008), but an obvious one is the high level of linguistic diversity, even at the family level, within the culture area (Figure 12.1). Bellwood's (2005:237–239) solution is to argue that concordance across Mesoamerica in the shift to the Formative (early second millennium B.C.) indicates a nearly simultaneous shift to effective agriculture among speakers of proto-languages of the major Mesoamerican families. As a result, early farming expansions within Mesoamerica rapidly bumped up against each other. Only at the extremes of this network of interacting early farmers was there potential for large-scale expansion. Based on the linguistic map (Figure 12.1), Bellwood identifies two cases: the extension of Mayan languages across the Yucatán and, even more dramatically, the extension of Uto-Aztecan from Central Mexico to the U.S. Southwest.

Bellwood's proposals concerning Uto-Aztecan would require a radical revision of traditional understandings of the history of this language family. One linguist has pushed for just such revisions (Hill 2001, 2012), but others are decidedly skeptical (Campbell 2003; Kaufman and Justeson 2009). Reactions from archaeologists have also been mixed (Carpenter et al. 2002; LeBlanc 2008; Mabry 2005; Matson 2003; Merrill et al. 2009). One particularly telling point is that in the Southwest, Kohler et al. (2008) find a demographic signature of a "Neolithic" transformation—

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referred to as the Neolithic Demographic Transition (Bocquet-Appel 2002, 2008)—not at the supposed time of ar rival of Uto-Aztecan-speaking agriculturalists, with maize agriculture in the second millennium B.C., but more than a thousand years later, during the first millennium A.D. A Neolithic Demographic Transition should be one manifestation of the processes postulated in Bellwood's big-picture story. The lack of fit between these two in the Southwest recalls Wylie's (2002) criticisms, mentioned above, of an earlier version of the early farming dispersal hypothesis. (For Bellwood's take on the Neolithic Demographic Transition, see Bellwood and Oxenham 2008.)

It is too early to completely dismiss the early farming dispersal hypothesis, but that is a complex topic that is not of central concern here. The important point is that Bellwood's bold proposals highlight several research questions to be pursued at the macroregional scale.

An effort to sketch out a set of Mesoamerican macroregions based on geographic criteria, the locations of initial Formative settlement, and subsequent stylistic linkages yields a map with a roughly similar grain to that of large-scale linguistic diversity (Figure 12.1). In other words, Formative-era macroregions (defined based on geography and archaeological criteria, not language distributions) might plausibly constitute the multiple agricultural homelands (with subsequent limited expansions) that Bellwood postulates within Mesoamerica. The questions we are prompted to ask concern the structure and history of Formative populations in these areas (Lesure 2011c:273–276). Was the earliest Formative spatially restricted within any given macroregion (a "homeland") or spatially dispersed? What was the subsequent history of populations during the second and first millennia B.C.? Were there "expansions" from a "homeland," and if so, did they proceed at the kinds of rates that Bellwood (2005:274–277; Bellwood and Oxenham 2008:16–21) finds in different expansionary situations? For preliminary work on these kinds of questions, see Lesure (2008, 2011c).

Macroregional Topics from the Intersection of Interregional and Regional Work

A second issue is how the study of interregional interactions and their impact at the local (regional) scale helps shape research questions at the macroregional level. The role played by successive centers on the Gulf Coast (San Lorenzo, La Venta) in the creation and dissemination of the "Olmec" style has dominated discussion of long-distance interactions in the Early and Middle Formative (e.g., Clark 1997, 2007; Clark and Pye 2000; Flannery and Marcus 1994, 2000; Grove 1989; Grove and Gillespie 1992; Marcus 1989; Rosenswig 2010). The issues involved continue to be framed in terms of "mother culture" versus "sister cultures." That is, was Mesoamerican civilization essentially created on the Gulf Coast or were elements, including the shared art style, early cosmological concepts and materializations thereof, and a social structure that included class divisions and centralized leadership, instead created through the interactions of essentially equal contributors across Mesoamerica? In my view, mother culture versus sister cultures is too crude a formulation of the complex issues involved, which are not susceptible to a decisive test (Lesure 2011d). We should instead pose more specific questions (Pool 2009:250–252). Theories of practice provide one theoretical framework for the development and investigation of such questions (Lesure 2004), but there is no reason why we should restrict ourselves to one such framework. For the investigation of multiple scales and their interrelations, an attractive option is the world systems approach derived from Wallerstein (1974) but elaborated by numerous investigators for application in premodern and even prestate settings (e.g., Blanton and Feinman 1984; Chase-Dunn and Hall 1993, 1997; Smith and Berdan 2003).

Admittedly, world systems as a path beyond the sterility of mother culture/sister cultures has its dangers. If discussion turns on whether Early, Middle, or Late Formative Mesoamerica was or was not a properly called "world system," then we could easily find ourselves back where we started. For instance, Blanton and Peregrine (1997:7) suggest that the designation *world system* be applied only to cases in which there are hierarchical relations between core and periphery. Where relations between interacting regions are more equal, the preferred term would be *interaction sphere*. Although the distinction appears at first glance reasonable, it hinges on the identification of unequal relations at a large scale—precisely the intractable issue of contention in the mother culture/sister cultures debate. More appropriate for our purposes is the broad definition of world system proposed by Chase-Dunn and Hall (1997:28). They posit merely that long-distance interactions are important in the reproduction and transformation of societies that make up the system—conditions granted by *both sides* in the Mesoamerican mother/sister debate. In the world systems formulation of Chase-Dunn and Hall (1997:28), intersocietal hierarchy is an empirical question rather than a definitional mandate. Conceived in this way, the world systems perspective becomes an appropriate tool for the multiscalar investigation of Formative Mesoamerica.

Smith and Berdan's (2003:24) world systems analysis of Postclassic Mesoamerica provides an inspiring example. They discard certain traditional units of world systems analysis that prove irrelevant to the Mesoamerican case (such as "semiperiphery") and develop more appropriate alternatives. Thus they identify multiple cores and, like Chase-Dunn and Hall, drop the idea that cores necessarily dominate peripheries; cores (for the Postclassic period) are defined as areas of "high populations, concentrated political power, and urbanization." There are also "affluent production zones" that have many characteristics of cores but without urbanism and political centralization. Further,

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several types of periphery are identified. Interactions are traced in "style zones" as well as "exchange circuits," both of which are multiple and of variable extension, though typically smaller than the world system as a whole.

One aspiration of interregional analysis of Formative Mesoamerica is just the sort of synthesis achieved (for the Postclassic) in Smith and Berdan (eds. 2003). Although we will not attempt anything so ambitious in our volumes 2 and 3, questions of systemic logic or structure nevertheless remain central (Chase-Dunn and Hall 1997:29–37; King and Freer 1995:272–275).

Topics for investigation involve the symbols, practices, institutions, and interpersonal relationships that reproduced the local social world. A large body of research on Formative Mesoamerica supports the idea that interregional transactions in symbols and preciosities were key factors in the constitution of social inequality and political hierarchy at the local level. However, there is still much work to be done on specifics, such as the scale at which labor was mobilized (e.g., Kowalewski 1995) or the extent of dependencies between polities. For instance, was there a flow of tribute from small chiefdoms of Middle–Late Formative central Tlaxcala toward the much larger centers of the Puebla-Tlaxcala Valley? The social relations of production, distribution, and consumption associated with individual commodities—such as obsidian (e.g. Clark 1987; Clark and Lee 2007:114–116; De León 2008; Stark 2007:56–57)—require work. Finally, there is the issue of change in systemic structure. Grove and Gillespie (1992:30) and Stark (2007:55) argue that the shift from Early to Middle Formative marked an important change in the media of expression of shared symbols (from ceramics to greenstone), a sign of greater restrictions in access to ideological power. And of course, the development of urbanism and state-level political organization—at whichever moments one chooses to place those within the Formative—indicates deep transformations in social differentiation, stratification, and the division of labor suggestive of fundamental shifts in systemic logic.

Crucial issues are thus to be explored at the intersection of local (regional) and interregional analysis. Still, regions were linked to their immediate neighbors in closer and yet more varied ways than they were to distant areas. It is the configuration of regions into macroregions and the histories of these interrelations that constitute important topics at the spatially intermediate, macroregional scale (Balkansky 2006). Style zones are to a significant degree macroregional in scale, as Grove (1989, 1999, 2000, 2007) has sought to show in numerous works concerning local variations in pan-Mesoamerican symbols (see also Flannery and Marcus 1994, 2000). The possibility of a core/periphery structure *within* macroregions has not been sufficiently explored, though recently there have been great strides, particularly in the highlands of Oaxaca (Balkansky 2002; Feinman and Nicholas 1990). Chase-Dunn and Hall (1993:862) remind us that core/periphery differentiation does not necessarily imply domination of periphery by core. It is necessary to scrutinize the nature and history of interactions. The rise of the state raises the issue of the constitution and projection of various forms of power beyond the region. Specifically, by the later Formative, institutions that could exercise political and military power at a macroregional scale had emerged. We will not address such issues directly based on our work in central Tlaxcala, but we will consider social and economic dimensions of the trajectory toward state emergence, particularly any evidence of increasingly complex division of labor or incipient class formation during the final millennium of the Formative.

THE STUDY AREA AND THE CENTRAL MEXICAN MACROREGION

The macroregion that we refer to as Central Mexico or the Central Highlands centers on the Basin of Mexico. It includes the Toluca Valley to the west, the Puebla-Tlaxcala Valley to the east, and, to the south, the lower-lying regions of Puebla and Morelos, which represent the beginnings of a descent from the volcanic highland plateau toward the Balsas River (Plunket and Uruñuela 2012:1–2; see also López Austin and López Luján 1996:67–75; Sanders 1965:6–7). The warm fertile river valleys of Morelos and southern Puebla, at elevations of 1,000 to 1,600 m, were particularly attractive locations for Early Formative agriculturalists (Grove 2007). Higher elevations had remnant Pleistocene lakes—most famously in the Basin of Mexico but also in the valleys of Toluca and Puebla-Tlaxcala (González de la Vara 1999:43–44; Serra Puche 1998:20)—that also provided an attractive array of natural resources (Niederberger 1979, 2000:171).

Central Tlaxcala would have been less attractive to Formative agriculturalists (Lesure et al. 2006:476). Access to water was not as good as in the adjacent Puebla-Tlaxcala Valley, and frost and hail were threats to crops. From the macroregional perspective, central Tlaxcala was peripheral to three successive developments of the Formative era: the establishment of sedentary, food-producing communities (1800–1400 B.C.); the emergence of social inequality and hierarchical political organization (1400–400 B.C.); and the establishment of urbanism and the state (200 B.C.–A.D. 100).

Formative settlements in the second millennium B.C. were concentrated well to the southeast of the study region. Grove (1974b, 2007) identifies the distinctive "Tlatilco culture" in Morelos, southwestern Puebla, northeastern Guerrero, and the southern Basin of Mexico, with an internal sequence of stylistic change from approximately 1750 to 1000 B.C. (my calibrated estimate). Tlatilco itself was at the northern fringe of this cultural sphere, and Grove (2007:218) suggests that the "heartland" of Tlatilco culture was most likely in Morelos. He draws attention to the mound architecture at both San Pablo and Chalcatzingo,

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otherwise unknown for this era in the Central Highlands. The Tlatilco burials provide good evidence of ranking at approximately 1400 to 1000 B.C. (Joyce 1999; Tolstoy 1989a). There have been repeated suggestions that agriculturalists migrated from the Tlatilco culture zone during the first millennium B.C. to fill in the less attractive parts of Central Mexico such as the northern Basin of Mexico (Niederberger 2000:171; Sanders et al. 1979:95–97) and central Tlaxcala (Lesure et al. 2006:489).

The basic trajectory of settlement in Central Mexico from approximately 1800 to 500 B.C. thus corresponds roughly to what one might expect of a Bellwoodian agricultural homeland with subsequent expansion. Any correlation with a language expansion at this time within Central Mexico is obscured by a complex subsequent linguistic history. Although Nahuatl was dominant in the area at the time of the Spanish conquest, its arrival in Central Mexico seems to postdate the Formative (Kaufman 2001). The language—probably actually languages—spoken at Teotihuacan is the subject of continuing debate (Dakin 2001; Hays-Gilpin and Hill 1999; Kaufman 1976; Manrique Castañeda 2000). Hopkins (1984:47–52) envisions Central Mexico as inhabited by speakers of proto-languages of the Otomanguean family in the Formative era, with linguistic diversification well under way since approximately 4400 B.C. (see also Marcus 1983b; Winter et al. 1984). The multiple lines of evidence assembled by Beekman and Christensen (2003) on Nahua migrations support that view. Applied to the case of Central Mexico, then, Bellwood's model would predict a northward expansion of Otomanguean speakers from Morelos beginning in the second millennium B.C. Unfortunately, Central Mexico is simply not an area in which the archaeological–language linkages of Bellwood's model can be tested with any confidence. Further, estimated rates of expansion of Formative farmers across the area are at or below the *low end* of what Bellwood (2005:Table 12.1; Bellwood and Oxenham 2008:Table 1) would expect for friction zones, in which agriculturalists are expanding into regions occupied by significant numbers of hunter–gatherers—this despite the lack of evidence for any inhibiting populations in the putative zones of friction (Lesure 2008:118).

As noted in the previous section, our goal is not to try to force the Formative history of this area into Bellwood's scheme but rather to use his model to develop research questions concerning population history and macroregional configuration. We suspect that multiple aspects of the subsistence system, along with the specific history of that system and local environmental variation, were important factors (Borejsza 2006; Borejsza et al. 2011). These issues will be addressed in Volume 2 of *Formative Lifeways in Central Tlaxcala*. There we will present our evidence for subsistence, including food remains; the technology associated with acquisition, processing, and storage; the associated set of historically derived strategies and practices; and the integration of all these elements into a somewhat precarious system. In that volume we will also consider architectural construction and the procurement of stone tools. We will position the Formative sequence of the study region in relation to the history of plant domestication and the transition to sedentism and food production, both in Mesoamerica generally and in the Central Mexican macroregion in particular.

The period from 1000 to 500 B.C. witnessed rapid population expansion across Central Mexico. In one region after another, a local settlement hierarchy developed in this period. The whole of the first millennium B.C., though, was not everywhere one of expansion. There were Late Formative collapses in both the Toluca Valley and the Amatzinac Valley of Morelos (González de la Vara 1999:73–74; Grove 2007:221). Volcanic activity seems to have episodically played a role in the fates of communities large and small (Plunket and Uruñuela 2012:33–34). In this era, the central topic in the investigation of macroregional configuration shifts from population history to the nature and scale of supraregional political and economic integration. As noted in Chapter 1, central Tlaxcala was a full participant in the general rapid expansion early in the millennium, though the absolute sizes of its regional centers were smaller than those of the adjacent Puebla-Tlaxcala Valley.

The question becomes: How were the inhabitants of these new polities integrated into a larger system at the macroregional scale? This will be a general topic for Volume 3 of *Formative Lifeways*. Materials to be considered include ceramic artifacts, household censers, costume elements, imported exotics, and tools of bone and stone. We will revisit the pottery and figurines to present social interpretations thereof, and we will describe mortuary practices. Specific topics to be considered include supernatural imagery and household ritual; division of labor and craft production; and multiple dimensions of sociality, from the contexts of food consumption to the presentation of social personae.

At the macroregional scale, the general topics of interest are the nature of interlinkages between regions (such as core/periphery structure), systemic logic, and transformations in either of those. We will look for impacts of large-scale systemic change on lifeways in central Tlaxcala. For instance, can we find evidence of incipient class formation or structural transformations in the division of labor? As noted in Chapter 1 and detailed in Chapter 11, our sample is not as sweeping within the span of 900 B.C. to A.D. 100 as we had initially hoped. We will, however, scrutinize changes during the era 900 to 400 B.C. and compare that period as represented at multiple sites to patterns in the Tenexac phase at La Laguna during the first century A.D.

CONCLUSIONS

This chapter has identified bodies of theory and research topics that will allow us to explore the larger implications

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of our excavations at a few humble sites in central Tlaxcala. It is particularly to macroregional history of populations and socioeconomic organization that we direct our attention. Indeed, we argue that the Formative archaeological record of our study region can be made sense of only with reference to that larger-scale history.

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CHAPTER 13

Resumen en Español

ESTE VOLUMEN, EL PRIMERO de tres que están previstos, presenta los resultados de excavaciones en cuatro sitios formativos del estado de Tlaxcala: tres aldeas (Amomoloc, Tetel y Las Mesitas) y un centro regional (La Laguna). En este volumen se describen las excavaciones, la cerámica y las figurillas. Se presenta también una cronología del Formativo de la región que se apoya en la seriación de colecciones de desechos domésticos y en el fechamiento por radiocarbono. En los siguientes volúmenes se presentarán con más detalle los materiales recuperados y se abordará su interpretación en términos sociales. Los temas por abordar en el volumen 2 son el medio ambiente, la subsistencia y la historia de la vida aldeana en el centro de México. El volumen 3 tratará sobre las transformaciones que sufrieron las estructuras simbólicas, sociales y económicas de Tlaxcala entre 900 a.C. y 100 d.C., es decir durante el primer periodo del que tenemos evidencia de ocupación sedentaria en el área que circunda la actual ciudad de Apizaco.

CAPÍTULO 1

Se describe la problemática de investigación y los cambios de enfoque a lo largo de las cuatro temporadas de campo. Se presenta un resumen de la secuencia formativa en el área de estudio, los sitios excavados y las convenciones que usamos para referirnos a los elementos, los contextos y para registrar la proveniencia de los materiales.

Para comprender la secuencia formativa del área de estudio fue de importancia vital comprobar la validez de los cuatro *complejos* cerámicos previamente definidos por García Cook y Merino Carrión (1988), así como revisar las fechas absolutas asignadas a las *fases* asociadas con cada uno de ellos. Los nombres y las fechas que les fueron asignadas en las publicaciones originales (García Cook 1974, 1981; García Cook y Merino Carrión 1988, 1989) fueron: Tzompantepec (1700/1600–1200 a.C.), Tlatempa (1200–800 a.C.), Texoloc (800–350 a.C.) y Tezoquipan (350 a.C.–100 d.C.). Nuestras revisiones, dadas a conocer por primer vez por Lesure et al. (2006) y elaboradas aquí (capítulo 11) consisten en comprimir de manera significativa la cronología de las primeras tres fases, recorrer hacia atrás el inicio de la cuarta, así como definir un quinto complejo cerámico, Tenexac, que cierra la secuencia formativa. García Cook y Merino Carrión (1988, 1989) veían la fase Tzompantepec como la que marca la primera aparición de agricultores sedentarios en Tlaxcala. Coincidimos con que es la primera fase del Formativo en el área de estudio, pero debido a la compresión de la cronología absoluta, la transición a la vida sedentaria, de parecer muy temprana pasa a ser muy tardía en comparación con regiones vecinas del Altiplano central. Esto permite que sea más compatible con la historia de los patrones de asentamiento en el norte de la cuenca de México, como lo había sugerido Snow (1966, 1969) y que se pueda concebir como una colonización de las tierras que quedaban disponibles, por parte de agricultores probablemente llegados desde el Sur después de 1000 a.C. (Parsons et al. 1982:366–369; Sanders et al. 1979:94–96). En nuestra visión, Tzompantepec correspondería a la fase Tetelpan o los principios de Zacatenco en la Cuenca de México, ca. 900–800 a.C.

Los sitios formativos de la región, incluidos todos los que exploramos, han sido sumamente afectados por la erosión. Un método común de excavación consistía en remover los 5 a 20 cm superiores de suelo perturbado, para exponer las bocas de elementos subterráneos y proceder a una excavación de los mismos por capas naturales. A menudo los pozos en cuestión estaban repletos de basura secun-

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daria intacta, incluyendo vasijas cerámicas reconstruibles, instrumentos de molienda, navajillas de obsidiana, figurillas de barro, hueso animal, restos carbonizados de plantas y varios objetos más. La mayoría de nuestras conclusiones se basa en un análisis detallado de la basura secundaria encontrada en este tipo de elementos.

La unidad básica para identificar la proveniencia de los materiales fue el *lote*. Un lote correspondía a una capa o cualquier subdivisión de ésta que pareció relevante durante la excavación. Los límites superior e inferior de un lote se ajustaban por lo general a la estratigrafía natural del depósito. Si la misma capa se extendía a través de dos o más unidades de excavación, se le asignaba un lote diferente en cada una de las unidades. Cada lote se identifica con un número único que no se repite entre un sitio y otro. Los depósitos creados de manera intencional por el hombre fueron nombrados como *elementos*. Los elementos se agrupan en las series A, B y C. Cada una corresponde a otro grupo de participantes del proyecto. La serie A incluye todos los elementos excavados en los sitios cercanos a Apizaco bajo la supervisión directa de Lesure (2000–2004). La serie B incluye todos los elementos excavados por Borejsza en sus trabajos en La Laguna (2003–2004). La serie C incluye algunos de los elementos excavados por David Carballo en el proyecto que inició en La Laguna en 2005, incluidos de manera selectiva en los análisis de este volumen. Los *contextos* son entidades más analíticas que por lo general agrupan varios lotes y muchas veces corresponden a un elemento o una subdivisión del mismo. Los contextos *primarios* son aquéllos en los que los materiales se encuentran en el lugar de su creación o uso, mientras que los *secundarios* son aquéllos en los que los materiales se encuentran alejados del lugar en donde fueron usados. Las plataformas y muros son contextos primarios. Lo son también los entierros. Los pozos usados para almacenamiento son en sí contextos primarios, pero su contenido suele ser de materiales en contexto secundario. Por consiguiente, el mismo elemento se puede considerar, según el análisis, como contexto primario o secundario. Cada contexto se identifica por siglas con el siguiente formato: (serie de elementos)-(número de elemento)-(número secuencial de contexto para el elemento en cuestión)-(letra que identifica el tipo de contexto). La letra final puede ser P, S o B, refiriéndose respectivamente a contextos primarios, secundarios y entierros. A manera de ejemplo, A4-1P es el primer contexto del elemento 4 de la serie A; en este caso se trata de un contexto primario, el mismo pozo. A4-4S es un relleno del mismo pozo, mientras A4-3B es un conjunto de huesos humanos depositados en el fondo del pozo.

CAPÍTULO 2

Amomoloc, el sitio más temprano que hemos excavado, se encuentra en el sureste del área de estudio, en el pie de monte del volcán La Malinche. Está al Sur del pueblo actual de San Andrés Ahuashuastepec, en terrenos que ocupan una pendiente suave que baja hacia el río Amomoloc. García Cook (1972a) designó el sitio como T-79. El sitio fue descrito en dos publicaciones de Abascal (1976, 1996). Los materiales diagnósticos de Tlatempa cubren más de 6.75 ha, pero es posible que la erosión haya esparcido los tepalcates más allá de los límites originales del asentamiento. Se puede concluir que éste ocupó una superficie entre 2 y 7 ha. Las terrazas de cultivo en este sitio resultan ser posteriores a la ocupación formativa.

Amomoloc fue habitado durante las fases Tzompantepec y Tlatempa, aproximadamente entre 900 y 650 a.C. Las excavaciones en el sitio se llevaron a cabo durante tres temporadas. Revelaron varios elementos formativos, incluyendo pozos rellenados con basura, hornos cavados en la tierra y un entierro. Se obtuvo una pequeña muestra de basura de la fase Tzompantepec y una amplia muestra de la fase Tlatempa. Durante la última temporada se excavó una muestra aleatoria de quince unidades de cuatro por cuatro metros en lo que parecía ser una zona intacta del sitio, con el propósito de estimar la densidad de las construcciones destruidas. La parte intacta resultó mucho más reducida de lo esperado. Aun así, se puede plantear un paulatino incremento de la densidad habitacional a través de los 200–250 años de ocupación. La Tabla 2.1 resume los resultados del muestreo aleatorio, mientras que las Figuras 2.10 y 2.11 indican los elementos fechados en las fases Tzompantepec, Tlatempa temprano y Tlatempa tardío. Para Tlatempa temprano y Tlatempa tardío se muestran círculos que marcan la extensión hipotética de los patios de las casas. Se colocan en el dibujo con la densidad sugerida por el muestreo aleatorio y de tal manera que abarquen todos los elementos detectados.

CAPÍTULO 3

El sitio de Tetel se encuentra en la ladera de un pequeño cono volcánico cerca del río Zahuapan, en la orilla de la ciudad de Apizaco y ladera arriba de la comunidad de San José Tetel. García Cook (1972a) designó el sitio como T-26. Materiales diagnósticos de la fase Tlatempa cubren un área de unas 2 ha. No hay ninguna estructura evidente en la superficie. Tetel fue ocupado durante las fases Tlatempa y Texoloc, aproximadamente entre 750 y 550 a.C. Las excavaciones revelaron elementos formativos, incluidas dos plataformas residenciales y varios pozos rellenados con basura. En dos elementos se depositaron también restos humanos. Se obtuvieron muestras de basura doméstica de las fases Tlatempa y Texoloc.

CAPÍTULO 4

El sitio de Las Mesitas se encuentra en una ladera que desciende hacia la profunda Barranca Xilomantla, a poca distancia de la comunidad actual de Las Mesas. Las excavaciones se llevaron a cabo de ambos lados de un corte de camino que había expuesto elementos formativos con abundantes

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desechos. Aun cuando los tepalcates abarquen, en concentraciones ligeras, una superficie de 7 ha, parecer ser que en el Formativo existieron aquí únicamente unas cuantas casas aisladas rodeadas de terrenos de cultivo. La mayor parte de los materiales recuperados durante la excavación probablemente perteneció a los moradores de una sola unidad habitacional, ocupada por menos de un siglo, durante la fase Texoloc (650–500 a.C.). Los hallazgos incluyen varios elementos rellenados con basura. Uno de ellos contenía también un entierro.

CAPÍTULOS 5 A 7

El sitio de La Laguna se encuentra en lo que fueron los terrenos de la hacienda del mismo nombre, a unos kilómetros de un parque industrial moderno al norte de Apizaco. Es un sitio muy distinto de los demás sitios investigados, tanto por su mucho mayor tamaño, como por la presencia de arquitectura monumental. Su plaza central se asienta entres tres cerros y está delimitada por grandes montículos, siendo uno de ellos un juego de pelota. El asentamiento formativo se extendía ladera arriba en los tres cerros, cubriendo un área de por lo menos 100 ha. Varios montículos más se ubican a distancias de cientos de metros de la plaza, lo que sugiere cierta complejidad en la organización administrativa o religiosa del asentamiento. El libro presenta únicamente los resultados de excavaciones en el sitio efectuadas hasta la temporada de 2004.

El capítulo 5 describe el sitio y la nomenclatura usada para referirse a sus diferentes áreas, recintos arquitectónicos y unidades de excavación. Se hace un resumen de exploraciones previas y se argumenta la presencia de un posible hiato en la ocupación formativa, entre 400 y 100 a.C. Se señala el lugar que corresponde a La Laguna en los patrones de asentamiento regionales. Las excavaciones se llevaron a cabo en varias áreas, cada una designada por una letra mayúscula. Cada una contiene una o varias unidades de excavación, de extensión variable. Los depósitos que pertenecen al Formativo fueron descubiertos en las áreas A, B y F por Borejsza en 2003 y 2004, así como en las áreas D y H por Carballo en 2004. Desde 2005, Carballo ha dirigido excavaciones más extensas en las áreas F y H e inició otras en las áreas G e I, mientras que Borejsza amplió la excavación de elementos descubiertos en 2003 en el área B. Aludimos a los resultados de las investigaciones posteriores a 2004 únicamente cuando modifican de manera sustancial nuestras interpretaciones o contribuyen al objetivo de armar un marco cronológico regional.

Los montículos y otras estructuras del sitio habían sido designados con letras mayúsculas por Roberto Bravo Castillo. Sin embargo, el número y la complejidad de los vestigios arquitectónicos descubiertos desde entonces, nos obligaron a usar siglas más largas que combinan letras y números refiriéndose a una retícula que abarca todo el sitio, tal como lo explica el capítulo 6. La numeración de lotes de excavación y elementos ha sido coordinada para todas las exploraciones, de tal manera que ningún número se repite entre los trabajos de Carballo y los de Borejsza.

Sigue siendo difícil estimar el tamaño y la población de La Laguna durante el Formativo, sobre todo en vista de la dificultad de separar en el espacio las dos ocupaciones del sitio. De manera extraña, parece que la cerámica cambió poco entre 400 y 100/50 a.C., lo que hace muy difícil distinguir componentes tempranos y tardíos del complejo Tezoquipan (véase capítulos 9 y 11). La población máxima que alcanzó La Laguna casi seguramente fue mayor a la cifra de 750 a 1750 habitantes que propone Merino Carrión (1989: tabla 4), con base en las 30 ha de ocupación que registró. Puesto que sus factores de conversión parecen bastante bajos y que la extensión mínima de la ocupación formativa marcada en la Figura 5.1 es de 91 ha, un rango de 1500 a 3000 habitantes nos parece más probable. Creemos que durante cada una de sus dos ocupaciones La Laguna se erigió en la sede de una entidad política independiente que dominaba los asentamientos aledaños en un radio de por lo menos 20 km (véase también Carballo y Pluckhahn 2007).

El segundo abandono de La Laguna, cerca de 150 d.C., coincide con los drásticos cambios en los patrones de asentamiento regionales asociados con el crecimiento de Teotihuacan y la expansión política del Estado dirigido desde aquella urbe. Varios asentamientos formativos de Tlaxcala fueron abandonados por esas fechas, mientras que nuevos asentamientos, por lo general más grandes y más nucleados, aparecieron en las planicies que atraviesan la mitad norte del estado actual. Este nuevo patrón de asentamiento hizo que García Cook postulara la existencia de un 'corredor' teotihuacano que canalizó la difusión de la cultura metropolitana hacia el Golfo de México (García Cook 1974, 1981:266–269; García Cook y Trejo 1977). La Laguna no fue partícipe de ese nuevo orden. Sus antiguos habitantes se trasladaron quizás a un sitio cercano, el T-492, a uno de los centros urbanos del corredor o a la misma Teotihuacan.

El capítulo 6 describe la elaboración del mapa de La Laguna y la excavación de contextos domésticos en áreas cercanas al centro del sitio. El mapa permite apreciar las grandes dimensiones del asentamiento formativo (Figuras 6.1–6.3), mientras que las excavaciones revelan depósitos intactos de las fases Texoloc, Tezoquipan y Tenexac. El capítulo 7 se basa en el descubrimiento, hasta cierto punto fortuito, de contextos domésticos, en unidades de excavación alejadas del centro ceremonial del sitio, en las que se investigó en primera instancia la edad, morfología y función de terrazas agrícolas posteriores a la ocupación formativa (véase también Borejsza 2006; Borejsza et al. 2008). Sin embargo, los rellenos de terraza y depósitos coluviales habían sepultado elementos y superficies de ocupación formativos, protegiéndolos de los estragos de la erosión. Los contextos en cuestión pertenecen en su mayoría a la primera ocupación de La Laguna, entre 600 y 400 a.C. Contienen sobre todo materiales del complejo Tezoquipan, con una presencia menor de materiales del complejo

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Texoloc. Las excavaciones en el área B revelaron un gran basurero con una compleja estratificación interna, rellenos arquitectónicos asociados con la construcción y remodelación de un montículo cercano, fragmentos de cimientos y paredes de dos casas, varios depósitos mortuorios y otros contextos. Las excavaciones en las áreas A y F revelaron sobre todo un gran número de formaciones troncocónicas, afectadas en diferentes grados por la erosión. Su densidad fue muy grande en el área F, donde se encuentran además algunos depósitos mortuorios y restos de arquitectura doméstica.

CAPÍTULO 8

Este capítulo es un compendio de todos los contextos formativos descritos en los capítulos 2 a 7 que son objeto de los análisis que se presentan en los capítulos 9 a 11 y se ampliarán en los volúmenes restantes. Se concede una importancia particular a los desechos secundarios. Los contextos que agrupamos en la llamada Muestra Cronológica (Tabla 8.1) constituyen el grupo más selecto. Se trata de las 'mejores' muestras de desechos, es decir aquéllos que contienen la menor proporción de materiales retrabajados desde contextos más antiguos. Muchos de estos contextos cuentan además con fechamientos por radioacarbono. Gracias al marco cronológico elaborado con ayuda de esta muestra más restringida, se vuelve posible identificar una muestra más amplia de contextos que, a pesar de no cumplir con los requisitos que permitieran incluirlos en la Muestra Cronológica, nos pueden servir para los análisis de índole social o económica proyectados para los volúmenes 2 y 3. Esta muestra más amplia es la Muestra de Desechos Extendida (Tabla 8.4).

CAPÍTULO 9

El capítulo 9 describe las vasijas cerámicas. Se presentan los diferentes acabados de superficie, formas (Figura 9.1) y motivos decorativos (Figura 9.2), para llegar a una definición de los tipos. Se mencionan de manera breve los diferentes complejos y fases basadas en la cerámica, tratados de manera exhaustiva en el capítulo 11. La clasificación de la cerámica que se presenta en este capítulo es un amalgama de tres estudios separados de los materiales de los cuatro sitios excavados. Cada uno de los estudios se basó en diferentes convenciones y una lógica algo distinta. Los tepalcates sumaron 68 mil 783 en Amomoloc, 20 mil 896 en Tetel, 6 mil 668 en Las Mesitas y 96 mil 903 en La Laguna (únicamente excavaciones concluidas hasta 2004). Todos los estudios se enfocaron en subconjuntos de estos totales, compuestos por materiales de depósitos formados sin lugar a dudas durante el Formativo. Se hizo énfasis en los bordes, los soportes y aquellos cuerpos que prometían ser diagnósticos en cuanto a su temporalidad. Un listado completo de los tipos definidos con base en el análisis de los tepalcates se encuentra en la Tabla 9.1.

CAPÍTULO 10

El capítulo 10 describe la colección de 1057 fragmentos de figurillas de barro. De éstos, 50 fueron identificables como zoomorfos, mientras que 542 fueron fragmentos antropomorfos de cabezas, torsos o cabezas con torsos. Los demás fragmentos fueron en su mayoría miembros aislados. El capítulo abarca análisis tanto estilísticos como cronológicos de la colección.

Las figurillas formativas del centro de México se clasifican de acuerdo con una taxonomía alfanumérica diseñada en las primeras décadas del siglo XX por Clarence Hay y George Vaillant (Vaillant 1930, 1931, 1935; véase también Reyna Robles 1971; Niederberger 1976). Algunos tipos se distinguen por toda una serie de atributos característicos y se pueden identificar en regiones que abarcan hasta 50 mil km^2. La validez regional de tales tipos confirma los méritos de esta taxonomía. Los arqueólogos separan sus colecciones y equiparan cada grupo con los tipos del sistema Hay-Vaillant. Existen dos problemas de fondo con esta taxonomía y los análisis que se basan en ella. El primero es que cada uno de los tipos es un conjunto dispar de categorías que, según el caso, toman en cuenta o no los fenómenos estilísticos. Algunos tipos están bien definidos y tienen distribuciones amplias. Otros son de distribución restringida o dudosos como categorías taxonómicas. Algunos 'tipos' podrían ser categorías residuales, los sobrantes de uno de los análisis de Vaillant que a lo largo de los años han adquirido una falsa legitimidad. El segundo problema es la poca atención a las relaciones entre lo local y lo regional, que afecta los análisis en dos puntos clave. En la etapa de agrupar los materiales, los grupos que contienen representaciones similares se toman por expresiones locales de un tipo regional, siguiendo criterios muy particulares del investigador. Pero, los buenos análisis estilísticos no paran allí. En su segunda etapa, llegan a considerar relaciones diacrónicas entre tipos. Vaillant tuvo presente esta tarea y Reyna Robles (1971) la avanzó hacia concebir secuencias a nivel de región. Sin embargo, la mayoría de los arqueólogos aborda la tarea de inferir relaciones diacrónicas desde la perspectiva de las particularidades de una secuencia local. Hasta ahora no se ha prestado la debida atención a las implicaciones de este procedimiento.

En este capítulo las agrupaciones que resultan de una primera separación se convierten en *tipos* según tres criterios. Primero, las figurillas que se puedan asignar a un tipo tienen muchos atributos o, en otras palabras, una alta densidad de atributos. Esto permite crear definiciones robustas que se sustentan en múltiples atributos. Segundo, los grupos que se convierten en tipos deben ser *frecuentes*. Tercero, los múltiples atributos usados en la definición deben de reforzar unos a otros, creando una percepción de *coherencia* visual. Los tipos designados de acuerdo con estos criterios recibieron nombres de topónimos locales o palabras sencillas en náhuatl. Es deseable que estos tipos *locales* correspondan a los tipos *regionales* (del sistema

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Hay-Vaillant) y el siguiente paso sería buscar tal correspondencia. Dado que, en una situación ideal, todos los tipos locales son abundantes y coherentes, con una alta densidad de atributos, sus vínculos con tipos regionales se pueden evaluar con base en múltiples atributos y en muestras de gran tamaño. De hecho, se podría decir que los tipos válidos, tal como los definimos, son aquellos grupos que resultan apropiados para tal comparación. Si un grupo no puede ni siquiera alcanzar el rango de un tipo local, cualquier vínculo con un tipo regional tendrá que ser provisional o incluso dudoso.

Los grupos que no se convierten en tipos se asignan a una de dos categorías taxonómicas provisionales. Hay grupos que tienen una densidad de atributos alta pero están presentes en una frecuencia baja (se puede tratar de una sola figurilla aislada). Su rareza nos impide saber si son grupos coherentes, aunque difieren en múltiples atributos de otros. Estas figurillas reciben el nombre de 'anomalías tipificables' (*typeable deviates*, TD) porque se sospecha que podrían ser asignados a un tipo si la muestra fuera más grande. Los TDs pueden servir para investigar procesos locales de innovación. ¿Se trata de experimentos locales con nuevas configuraciones de atributos, objetos importados, o tipos locales válidos pero sub-representados en la colección que estudiamos? Hay otros grupos que tienen una densidad de atributos baja o parecen incoherentes. Pueden ser frecuentes, pero su integridad como grupo está en duda. Esta segunda categoría de figurillas recibe el nombre de 'sobrantes de la clasificación' (*classificatory residuals*, Res). Este nombre sirve para recalcar que cualquier intento de vincularlos con tipos regionales debe ser visto con recelo.

De todos los tipos descritos en el capítulo, Coaxomulco y Ehco se pueden igualar, respectivamente, con los tipos regionales C10 y E2. Cuatlapanga corresponde a los "variantes poblanos" de C1 identificados por Reyna Robles (1971); se argumenta que el tipo combina atributos de C1 y B de Hay-Vaillant. El grupo Gazca es una manifestación local de G2, mientras que los tipos locales Huehuetitla y Huiloac están emparentados con los tipos regionales G, I y L. El capítulo concluye con una seriación de las figurillas y una consideración abstracta de los patrones estilísticos en la colección.

CAPÍTULO 11

Este capítulo es una síntesis cronológica que describe los materiales recuperados en Amomoloc, Tetel, Las Mesitas y La Laguna. El resultado es una secuencia formativa parcial para la porción centro-norte de Tlaxcala. Su cobertura es buena desde el momento de la llegada de agricultores sedentarios en 900 a.C. hasta 400 a.C. y bastante buena entre 100 a.C y 150 d.C. Debido al hiato en la ocupación de La Laguna, faltan datos sobre el intervalo entre 400 y 100 a.C.

El análisis cronológico descansa en los acabados de superficie y formas de las vasijas cerámicas, la tipología de las figurillas y en fechas radiocarbónicas sobre materia vegetal carbonizada y hueso. Sólo en algunos casos se pudieron establecer relaciones estratigráficas directas entre las unidades de análisis. La selección de contextos incluidos en la Muestra Cronológica se describe en el capítulo 8 y los contextos tomados en cuenta se presentan en la Tabla 8.1. La secuencia descrita en este capítulo se basa en una seriación de estas unidades. Los resultados se relacionan con cronologías previas del Formativo de Tlaxcala; se establecen conexiones con secuencias de regiones vecinas y se abordan problemas pendientes, tales como el hiato en La Laguna y una parte plana de la curva de calibración radiocarbónica entre 800 y 400 a.C.

Se han identificado las siguientes fases. Para los códigos de las formas de vasijas cerámicas que se citan a continuación véase la Figura 9.1. Usamos los términos 'plato', 'cajete', 'cuenco', 'vaso' y 'olla' para referirnos, respectivamente, al *plate*, *dish*, *bowl*, *vase* y *jar* de Sabloff (1975).

TZOMPANTEPEC (900–800 a.C.). Amomoloc Burdo constituye más de 45% de los bordes e incluye una gran cantidad de cuencos sin engobe, un rasgo poco común en las demás fases. Después de estas vasijas burdas, las más comunes son las de engobe blanco. Yauhtentzi Rojo sobre Blanco aparece en cantidades insignificantes. En cambio, hay vasijas con cocción diferencial (Pascuala Cocción Diferencial) y un tipo poco frecuente que resalta por su acabado blanco lustroso (Ceniza Blanco). Los bordes de los cuencos y cajetes suelen ser rectos y sin modificación; en la muestra, cajetes blancos de forma B2 constituyen más de 5% de todos los bordes, un patrón que no se repite en contextos más tardíos (Figura 11.2i). Cuencos y cajetes sencillos con paredes redondeadas (B1, B4 y B5; Figura 11.2g) son muy comunes, tal como lo notan García Cook y Merino Carrión (1988:276). Es importante también la presencia de cajetes con bases tanto redondas como planas. Los últimos cuentan con paredes divergentes y bordes rectos. Los cajetes con bases planas están prácticamente ausentes en Tlatempa, Texoloc y Tezoquipan. Entre las vasijas de servicio individual, el número de cajetes y cuencos con un borde recto (B1 y B2) rebasa el de cualquier otra forma. La olla característica de Tzompantepec tiene un cuello divergente y un borde engrosado del lado exterior (O1-2; Figura 11.2a–b). Las figurillas son comunes en Tzompantepec, pero muy heterogéneas. El tipo Amomoloc, con ojos de grano de café, es el más frecuente. Se encuentran también figurillas crudas de matronas sentadas (Figura 11.2k). Las figurillas Cuatlapanga están presentes, pero no son el tipo más común.

TLATEMPA (800–650 a.C.). Los acabados blancos, muchas veces con decoración excisa o incisa, son característicos de esta fase (Figura 11.3). El conjunto de tipos blancos ocupa el lugar uno, dos o tres, detrás de únicamente Amomoloc Burdo, San José Blanco sobre Café o Yauhtentzi Rojo sobre Blanco. Aunque todavía suele estar entre los tres tipos más frecuentes, Amomoloc Burdo no tiene una posición dominante. Constituye entre 15 y 35% de los bordes. Yauhtentzi Rojo sobre Blanco aparece a menu-

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do entre los tres tipos principales. San José Blanco sobre Café también ocupa a veces un lugar importante. El cajete o cuenco con borde modificado (B3) adquiere el papel de la vasija estándar para el servicio individual, integrando casi la mitad de todo el grupo B1 a B11 y por lo menos 25% en cualquier contexto. Las modificaciones del borde alcanzan por lo tanto la frecuencia más alta de cualquier fase. El cajete o cuenco con un borde fuertemente divergente y evertido, con un reborde interior (B3-6) está muchas veces entre las cinco formas más comunes y puede representar 10% o más de todos los bordes (Figura 11.3c–f). La proporción de cajetes a cuencos es la más alta de cualquier fase. Por consiguiente, ésta es también la fase cuando la decoración más elaborada se coloca de manera preferente al interior de las vasijas. Los soportes son muy escasos. La olla característica tiene un exterior bruñido y un cuello divergente con un borde recto. Prevalecen las figurillas del tipo Cuatlapanga, una combinación de los atributos de C1 y B del esquema de clasificación de Vaillant (Figura 11.3j).

TEXOLOC (650–500 a.C.). El conjunto de tipos cafés y cafés con rojo es particularmente común durante esta fase. Sumados, estos tipos ocupan el lugar uno o dos. Incluyen Mesitas y Potrero, dos tipos que alcanzan sus frecuencias más altas durante Texoloc. Laguna Rojo puede ser el tipo más común, en esta fase igual que en la que sigue, pero Xalmonto Rojo y Blanco es un tipo menor en Texoloc. Por lo general representa 5% o menos y no está entre los cinco tipos más comunes. Entre el grupo combinado de tipos cafés y cafés con rojo, los cajetes y cuencos con paredes divergentes y bordes rectos (B2), de cualquier forma de base, son escasos, representando menos de 10% de los bordes, en fuerte contraste con Tenexac. La proporción de cuencos a cajetes aumenta en comparación con Tlatempa, pero los cajetes siguen siendo muy comunes. Las vasijas con borde modificado (B3) son todavía la categoría más común en cuanto a vasijas de servicio individual, pero las modificaciones más populares son otras. Los cajetes (a veces cuencos) con bordes fuertemente evertidos hacia abajo (B3-4) son la forma más característica de Texoloc. Constituyen a menudo 10% o más de todos los bordes (Figura 11.4f–g). Los cajetes y cuencos de silueta compuesta (B6), prácticamente desconocidos antes, aparecen por primera vez en gran número, pero no de manera tan preponderante como en la fase Tezoquipan. Como consecuencia de estos cambios en las formas cerámicas, el emplazamiento de la decoración empieza a cambiar del interior hacia el exterior de las vasijas de servicio. Los soportes siguen siendo poco comunes. Los cuellos divergentes de las ollas se vuelven más gruesos. Las figurillas son del tipo Ehco (E2 de Vaillant), con pequeñas cantidades de Gazca, Huehuetitla y Huiloac (Figura 11.4:k–m).

TEZOQUIPAN (TEMPRANO) (500 a.C. a 400 a.C. o después). Laguna Rojo ocupa el lugar uno o dos entre los tipos (Figura 11.5). Xalmonto Rojo y Blanco suele estar en un lugar prominente, a menudo dos o tres. Los rojos – que incluyen Laguna Rojo, Laguna Rojo y Alisado, Xalmonto Rojo y Blanco y Gazca Blanco sobre Rojo – constituyen 55% o más de todos los bordes. Se halla con frecuencia el tipo De Haro Polícromo. Los cuencos exceden a los cajetes en una proporción de 10 a 1. Los cuencos de silueta compuesta (B6) son la forma más común entre todos los cuencos y cajetes (B1–B11). Son mucho más comunes que en Texoloc y adquieren una variedad de contornos y tamaños. Muchos cuencos cuentan con tres soportes (Figura 11.5). Los soportes suelen ser pequeños, cónicos y sólidos, pero soportes huecos y de otras formas están presentes también. Los cuencos y cajetes con bordes fuertemente evertidos hacia abajo (B3-4) por lo general brillan por su ausencia. El énfasis de toda la decoración está ahora en el exterior de la vasija. Entre el borde y el quiebre de los cuencos de silueta compuesta se encuentran muchas veces motivos incisos, pintados o—en el caso de Xalmonto—zonas contiguas de rojo y blanco, casi siempre separadas por incisiones (Figura 11.5g–h). La decoración emplea mucho las distintas variantes del motivo de la greca escalonada. Continúan las figurillas del tipo Ehco, pero se incrementa la proporción de Huiloac y Huehuetitla (relacionadas con tipos G, I y L del esquema Hay-Vaillant). Estos tipos son parecidos a Ehco, pero cuentan con un bruñido. Las figurillas Huiloac se distinguen también por ser más grandes que las Ehco (Figura 11.5k–l).

"TEZOQUIPAN TARDÍO" (100 a.C. o antes, a 50 d.C.). Éste realmente no es un complejo ni fase con una definición formal. Se trata de un término que usamos de manera provisional para referirnos a la primera parte de la segunda ocupación de La Laguna. Sospechamos que Laguna Rojo (o algún variante de la misma) predominaba aún y que la cerámica en general no se distinguía mucho de lo "Tezoquipan" tal como lo habían definido García Cook y Merino Carrión (1988). Diferentes contextos arrojan evidencia al parecer contradictoria. Algunos se ven idénticos al Tezoquipan más temprano; otros incluyen múltiples atributos de Tenexac. La controversia se vuelve a abordar al final del capítulo.

TENEXAC (50–200 d.C.). El conjunto de los tipos cafés y cafés con rojo vuelve a ser importante en esta fase y ocupa el lugar uno o dos (Figura 11.6). Los cafés son de la vajilla Metl más que la vajilla Laguna (véase capítulo 9). Los tepalcates de Metl Café son más duros que los de Mesitas Café y la superficie pulida se siente cerosa al tacto. Las paredes son muchas veces más delgadas que en fases anteriores, pero siguen gruesas en los cuencos más grandes (cazuelas) con un bruñido o engobe café del color de la pasta. Los tonos del café son muy variables, abarcando desde beige a café oscuro o incluso negro (véase Metl Café y Metl Café Bruñido en el capítulo 9). Yano Polícromo, un tipo nuevo, aparece de vez en cuando. En contraste con Texoloc, los cuencos y cajetes con paredes divergentes y bordes rectos (B2) son comunes, alcanzando 40% o más de los bordes del conjunto de los tipos cafés y cafés con rojo, así como más de 25% de todas las formas del conjunto B1–B11 (Figura 11.6d). Las vasijas B2 de color café normal-

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mente tienen bases planas (B2-3), un rasgo que había sido muy raro desde la fase Tzompantepec. No cuentan con soportes, aunque los soportes se mantienen en los cuencos de silueta compuesta de engobe rojo. La B2 sería entonces la típica vasija de servicio individual de Tenexac. B6 aparece casi con la misma frecuencia, aunque en algunos casos se puede tratar de tepalcates redepositados. En Tenexac, las ollas con cuellos divergentes bajos muchas veces cuentan con un quiebre marcado en el interior (Figura 11.6a); hay también ollas con cuellos altos, divergentes o acampanados. Las figurillas Tenanyecac y Teotihuacan 1 (Figura 11.6j–k) son diagnósticas de la fase Tenexac.

Una buena parte del capítulo 11 es una discusión de la seriación de los contextos que contenían basura. La aplicación de métodos tradicionales de clasificación dio como resultado la clave de identificación que presentamos en la Figura 11.7. Este enfoque se complementa con un análisis estadístico basado en el análisis de conglomerados aplicado a los promedios de grupo, así como el análisis de correspondencias. La tercera de las seriaciones que se describen es la más definitiva. La matriz de entrada (Tabla 11.9) recoge información sobre tipos de acabados de superficie y formas de las vasijas, así como tipos de figurillas. Las columnas de la tabla corresponden a contextos de la Muestra Cronológica. Las hileras corresponden a variables booleanas, es decir enunciados a considerar en relación con las vasijas o figurillas de un contexto. Los enunciados pueden resultar "ciertos" (1) o "falsos" (0). Los resultados que arroja esta matriz, tanto en el análisis de conglomerados (Figura 11.10) como el de correspondencias (Figuras 11.11 y 11.12) son muy satisfactorios. Se refuerzan mutuamente y apoyan fuertemente las interpretaciones desarrolladas en la seriación cualitativa emprendida anteriormente.

La Tabla 11.10 presenta nuevos fechamientos radiocarbónicos que están asociados a cerámica del Formativo. En las Figuras 11.14 a 11.16 los comparamos con fechamientos previamente publicados para Tlaxcala y áreas vecinas de Puebla. Donde más concuerdan es en las fases Texoloc y Tezoquipan. En vista de toda la evidencia disponible, creemos que Texoloc se puede relacionar con Ticomán 1 y Tezoquipan temprano con Ticomán 2. El hiato en La Laguna caería en Ticomán 3 y Tezoyuca/Ticomán 4, mientras que "Tezoquipan tardío" (de resultar una designación válida) se relacionaría con Patlachique-Tzacualli y Tenexac con Tzacualli-Miccaotli. La Figura 11.17 ofrece un resumen de estas correlaciones.

CAPÍTULO 12

Nuestro programa de investigación desde 2003 ha reconocido la importancia de investigar la ocupación formativa de la región de estudio en su contexto macrorregional que será uno de los objetivos principales de los volúmenes 2 y 3 de *Formative Lifeways in Central Tlaxcala*. En esos volúmenes, exploraremos las dimensiones macrorregionales de la subsistencia, las relaciones sociales y la economía política. El Capítulo 12 del Volumen 1 proporciona una introducción general a este tipo de análisis, presentado un marco para el estudio macrorregional del Formativo en Mesoamérica.

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Appendix A

Correlation Between Different Systems of Vessel Form Codes

The vessel form codes published here (in Chapter 9) are the result of an effort to synthesize separate form classifications developed by Rodríguez and Borejsza (for La Laguna) and Jennifer Carballo (for Amomoloc and Tetel).

This Volume	Rodríguez and Borejsza	J. Carballo	J. Carballo, Simplified System
B01-1	DR2	U111, U112, U113	b
B01-2	BR1b		b1
B02	B4, DR1, DR3	U411, U412, U421, U422, U423, U424, U451, U452, U462	l, b
B02-2	BCx		q
B02-3			l
B02-4			l
B03-2	B3, BR1a, BR2B, DR2, DR4	U120, U121, U122, U124	c, h1
B03-3		U131, U132, U133, U134	d
B03-4	DC5a, DC5b	U140, U141, U142	e
B03-5	D5, DR5	U150, U151, U651	f
B03-6	B7	U152, U153	g
B03-7		U162	h
B03-8	BR5	U161	i
B03-9	BRz		
B04	BR1	U181, U182, U183	k, b
B05-1	BC10	U230, U231, U331	o, o1
B05-2		U237, U337	p
B05-3	BR2, BR2a		p1
B06	BC3, BC8, DC, CS	U222, U220, U344, U345	q
B06-1		U221, U222, U223, U225,U232, U241, U242, U243, U244, U245, U302, U303, U305, U312, U321, U322, U323, U324, U342,	q
B06-1a	BC1a	U213, U221, U222, U223, U224, U225, U242, U243, U245, U305, U322, U323, U324, U342, U343, U344, U345	
B06-1b	BC1c, DC1c		
B06-1c	BC1d		
B06-2	BC1b		
B07	BC5, BC7		q

This Volume	Rodríguez and Borejsza	J. Carballo	J. Carballo, Simplified System
B08	BC4, BC6		q
B09		U211, U216, U311, U611, U612	m
B09-1	BC2		p
B10-1		U220, U221, U222, U312, U321,U322,	r
B10-2		U211, U311, U611	n
B11	BK	U17	j
B12	BC6		
C	I		
C2-1	I2		
C3	I1		
F1	F		w1
F2	H, H1		w2
L	L		
O	H2, O, OM		t
O1-1	O1	R102, R103, R122, R123, R131, R141, R143, R202, R223, R231, R241, R243	t
O1-2		R105, R125, R141, R145, R205, R245	v
O1-3	Ox		t
O3	O2	R104, R124, R144, R244	u
O4	O3	R121, R221	s
O5-1		R251, R252	w
O5-2	OC		t
P	P, P2		a
P1	Comal		a1
P2	P1		a
T	T, T1, T2, T8, TC, TR, TR1, TR2		xy
T1-1		R311	y
T2	TR	R311	x

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Appendix B

List of Lots with Cross-References to Features and Refuse Samples

Lots are listed in numerical order and identified to site, feature, and context (see also chapters 1 and 8). Phase assignments in the Chronological Sample and the Expanded Refuse Sample (if any) are indicated, along with the total number and weight of sherds recovered.

Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
1	Tetel			5.2875	595		
2	Tetel			2.025	238		
3	Tetel			4.4528	715		
4	Tetel			9.0321	862		
5	Tetel			4.9164	621		
6	Tetel			2.3022	243		
7	Tetel			2.9663	198		
8	Tetel			2.935	129		
9	Tetel	1	A001-1S	.7628	32		Tlatempa
10	Tetel			6.2207	517		
11	Tetel			1.1955	87		
12	Tetel			1.2432	66		
13	Tetel	1	A001-1S	2.0931	161		Tlatempa
14	Tetel			1.2926	76		
15	Tetel			.5348	16		
16	Tetel			7.3142	494		
17	Tetel			2.1415	464		
18	Tetel			.0005	8		
19	Tetel			1.9825	363		
20	Tetel			.5711	43		
21	Tetel			1.7217	87		
22	Tetel	1	A001-1S	1.115	30		Tlatempa
23	Tetel	1	A001-1S				Tlatempa
24	Tetel	4	A004-4S	1.1936	69	Late Tlatempa	Tlatempa
25	Tetel	4	A004-4S	4.2217	176	Late Tlatempa	Tlatempa
26	Tetel	4	A004-4S	1.521	57	Late Tlatempa	Tlatempa
27	Tetel			.3655	29		
28	Tetel	4	A004-4S	11.7933	572	Late Tlatempa	Tlatempa
29	Tetel	4	A004-4S	7.0252	396	Late Tlatempa	Tlatempa
30	Tetel						
31	Tetel			2.065	202		
32	Tetel			11.626	854		
33	Tetel			5.3465	335		
34	Tetel			.9137	57		
35	Tetel	4	A004-4S	.5852	59	Late Tlatempa	Tlatempa
36	Tetel	4	A004-4S	.1413	13	Late Tlatempa	Tlatempa
37	Tetel	4	A004-4S	.7878	22	Late Tlatempa	Tlatempa
38	Tetel	4	A004-4S	.7632	37	Late Tlatempa	Tlatempa
39	Tetel	4	A004-4S	4.9817	242	Late Tlatempa	Tlatempa

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Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
40	Tetel	4	A004-4S	2.5414	109	Late Tlatempa	Tlatempa
41	Tetel	4	A004-4S	3.4796	156	Late Tlatempa	Tlatempa
42	Tetel			.63	60		
43	Tetel						
44	Tetel			1.24	76		
45	Tetel			1.405	68		
46	Tetel			.1392	10		
47	Tetel			2.4503	104		
48	Tetel	10	A010-1S	4.6352	246	Texoloc	Texoloc
49	Tetel	10	A010-1S	2.1355	95	Texoloc	Texoloc
50	Tetel			1.2555	80		
51	Tetel			1.8822	159		
52	Tetel	10	A010-1S	3.6046	164	Texoloc	Texoloc
53	Tetel			2.6136	148		
54	Tetel	10	A010-1S	2.3895	169	Texoloc	Texoloc
55	Tetel	10	A010-1S	2.1343	110	Texoloc	Texoloc
56	Tetel	12	A012-2S	2.8951	116	Late Tlatempa	Tlatempa
57	Tetel	10	A010-1S	1.0256	71	Texoloc	Texoloc
58	Tetel			3.0586	197		
59	Tetel			.1448	12		
60	Tetel	11		.4979	60		
61	Tetel			.4117	27		
62	Tetel			4.0244	266		
63	Tetel			1.3523	119		
64	Tetel			.055	10		
65	Tetel						
66	Tetel	11	A011-3B	.266	15		
67	Tetel	11	A011-2S	3.6721	373	Texoloc	Texoloc
68	Tetel			.0213	1		
69	Tetel			.8778	68		
70	Tetel			1.7798	109		
71	Tetel	11	A011-2S	4.703	538	Texoloc	Texoloc
72	Tetel	11	A011-2S	46.8198	1006	Texoloc	Texoloc
73	Tetel			.14	9		
74	Tetel			4.6337	110		
75	Tetel			2.9733	198		
76	Tetel			1.3378	75		
77	Tetel			.6932	52		
78	Tetel			12.7078	239		
79	Tetel			3.299	148		
80	Tetel			1.3813	71		
81	Tetel			1.1002	55		
82	Tetel	11	A011-2S	22.3217	698	Texoloc	Texoloc
83	Tetel			.6735	26		
84	Tetel	12		1.8502	66		
85	Tetel	12	A012-2S	.3044	17	Late Tlatempa	Tlatempa

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Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
86	Tetel						
87	Tetel			1.42	29		
88	Tetel	12	A012-2S	.6486	29	Late Tlatempa	Tlatempa
89	Tetel						
90	Tetel	13		.3493	28		
91	Tetel			.938	51		
92	Tetel						
93	Tetel	12		1.5451	142		
94	Tetel	12	A012-2S	6.9927	461	Late Tlatempa	Tlatempa
95	Tetel	12	A012-2S	4.226	207	Late Tlatempa	Tlatempa
96	Tetel	12	A012-2S	.4534	29	Late Tlatempa	Tlatempa
97	Tetel	12	A012-2S	.3044	4	Late Tlatempa	Tlatempa
98	Tetel			.0663	6		
99	Tetel			3.6031	204		
100	Tetel	14	A014-1S	.5512	48		Texoloc
101	Tetel	14	A014-1S	.3403	27		Texoloc
102	Tetel	16	A016-1S	11.9792	531	Texoloc	Texoloc
103	Tetel	13		.7855	29		
104	Tetel	16	A016-1S	5.9598	285	Texoloc	Texoloc
105	Tetel	13		.9983	50		
106	Tetel	16	A016-1S	.9161	45	Texoloc	Texoloc
107	Tetel	15		.3861	11		
108	Tetel	15	A015-1S	5.7648	622	Texoloc	Texoloc
109	Tetel	13		.2363	25		
110	Tetel						
111	Tetel	17	A017-1S	7.6378	367		Tlatempa
112	Tetel	15	A015-1S	9.9172	754	Texoloc	Texoloc
113	Tetel	15	A015-1S	4.1571	264	Texoloc	Texoloc
114	Tetel						
115	Tetel	15	A015-1S	1.6418	138	Texoloc	Texoloc
116	Tetel	13		.2552	43		
117	Tetel	17	A017-1S	1.2016	114		Tlatempa
118	Tetel						
119	Tetel						
120	Tetel	17	A017-1S	1.8718	123		Tlatempa
121	Tetel	19	A019-1S	5.3988	205		Tlatempa
122	Tetel	13		.276	10		
123	Tetel	13		.1503	3		
124	Tetel	13		.488	42		
125	Tetel	18	A018-1S	3.4609	121		Texoloc
126	Tetel	19	A019-1S	1.3182	63		Tlatempa
127	Tetel	19	A019-1S	.0645	7		Tlatempa
128	Tetel	18	A018-1S	0	0		Texoloc
129	Tetel	12	A012-2S	.4525	39	Late Tlatempa	Tlatempa
130	Tetel			.1655	11		
131	Tetel						

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Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
132	Tetel	2	A002-1P				
133	Tetel	16		2.3175	58		
200	Mesitas		Mes-A1	.66	18		
201	Mesitas		Mes-A1	.965	19		
202	Mesitas			.195	11		
203	Mesitas	30	A030-3S	.415	19		Texoloc
204	Mesitas		Mes-A1	.2601	10		
205	Mesitas		Mes-A1	.7747	59		
206	Mesitas						
207	Mesitas						
208	Mesitas						
209	Mesitas		Mes-A1	.6959	88		
210	Mesitas			.0172	4		
211	Mesitas		Mes-A1	.375	51		
212	Mesitas		Mes-A1	1.3677	87		
213	Mesitas						
214	Mesitas						
215	Mesitas		Mes-A1	1.6603	233		
216	Mesitas						
217	Mesitas						
218	Mesitas						
219	Mesitas			.0314	4		
220	Mesitas	33	A032 + A33	.548	36	Texoloc	Texoloc
221	Mesitas	35	A035-1S	3.1749	334		Texoloc
222	Mesitas		Mes-A1	2.7767	230		
223	Mesitas	33	A032 + A33			Texoloc	Texoloc
224	Mesitas	34	A034-4S	.6594	26	Texoloc	Texoloc
225	Mesitas	34	A034-4S	.585	22	Texoloc	Texoloc
226	Mesitas	35	A035-1S				Texoloc
227	Mesitas		Mes-A1	.5221	36		
228	Mesitas			.0584	6		
229	Mesitas			.0678	24		
230	Mesitas	34	A034-4S	.5829	16	Texoloc	Texoloc
231	Mesitas	34	A034-4S	.0084	5	Texoloc	Texoloc
232	Mesitas	30	A030-3S	.618	50		Texoloc
233	Mesitas			.1038	7		
234	Mesitas						
235	Mesitas			.2273	24		
236	Mesitas	32	A032 + A33	.0864	6	Texoloc	Texoloc
237	Mesitas	32	A032 + A33	.0504	3	Texoloc	Texoloc
238	Mesitas						
239	Mesitas	33	A032 + A33	.34	44	Texoloc	Texoloc
240	Mesitas						
241	Mesitas	32	A032 + A33	.2963	35	Texoloc	Texoloc
242	Mesitas						
243	Mesitas	33	A032 + A33	.1513	17	Texoloc	Texoloc

READ ONLY / NO DOWNLOAD

Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
244	Mesitas	33	A032 + A33	.7687	35	Texoloc	Texoloc
245	Mesitas						
246	Mesitas		Mes-D1	.5975	40		
247	Mesitas		Mes-D1	.5257	63		
248	Mesitas	37	A037-1S	.1114	20		Texoloc
249	Mesitas		Mes-D1	.2146	34		
250	Mesitas	32	A032 + A33	.7997	62	Texoloc	Texoloc
251	Mesitas	32	A032 + A33	2.2799	91	Texoloc	Texoloc
252	Mesitas	33	A032 + A33	.3312	27	Texoloc	Texoloc
253	Mesitas			.0626	8		
254	Mesitas			.0345	8		
255	Mesitas		Mes-D1	.3281	30		
256	Mesitas		Mes-D1	.091	26		
257	Mesitas						
258	Mesitas		Mes-D1	.1371	17		
259	Mesitas			.0192	3		
260	Mesitas						
261	Mesitas	34	A034-4S	.1752	21	Texoloc	Texoloc
262	Mesitas		Mes-D1	.1275	22		
263	Mesitas		Mes-D1	.1496	32		
264	Mesitas	37	A037-1S	2.9308	186		Texoloc
265	Mesitas	32	A032 + A33	.306	21	Texoloc	Texoloc
266	Mesitas	34	A034-4S	1.0739	142	Texoloc	Texoloc
267	Mesitas			.172	39		
268	Mesitas			.0662	10		
269	Mesitas	32	A032 + A33	.2738	26	Texoloc	Texoloc
270	Mesitas	34	A034-4S	1.5462	146	Texoloc	Texoloc
271	Mesitas		Mes-D1	.0541	9		
272	Mesitas			.2365	26		
273	Mesitas			.0469	7		
274	Mesitas			.0802	28		
275	Mesitas			.0901	15		
276	Mesitas						
277	Mesitas						
278	Mesitas	32	A032 + A33	1.1139	29	Texoloc	Texoloc
279	Mesitas						
280	Mesitas	32	A032 + A33	.49	39	Texoloc	Texoloc
281	Mesitas	32	A032 + A33			Texoloc	Texoloc
282	Mesitas			.3567	66		
283	Mesitas	31	A031-1S	1.2212	76		Texoloc
284	Mesitas	33	A032 + A33	1.2027	124	Texoloc	Texoloc
285	Mesitas		Mes-D1	.0738	10		
286	Mesitas	33	A032+ A33	5.5936	178	Texoloc	Texoloc
287	Mesitas		Mes-D1	.1026	19		
288	Mesitas	34	A034-4S	.2578	26	Texoloc	Texoloc
289	Mesitas	34	A034-4S	1.6805	113	Texoloc	Texoloc

READ ONLY / NO DOWNLOAD

Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
290	Mesitas						
291	Mesitas		Mes-D1	.462	54		
292	Mesitas			.0851	1		
293	Mesitas			.0357	7		
294	Mesitas						
295	Mesitas			.1706	34		
296	Mesitas		Mes-A1	.642	24		
297	Mesitas						
298	Mesitas						
299	Mesitas	34	A034-4S	1.376	125	Texoloc	Texoloc
300	Mesitas			.1828	31		
301	Mesitas						
302	Mesitas		Mes-A1	2.2101	157		
303	Mesitas		Mes-E1	.1511	6		
304	Mesitas		Mes-E1	1.3272	71		
305	Mesitas						
306	Mesitas			.0762	8		
307	Mesitas		Mes-E1	.1227	25		
308	Mesitas		Mes-E1	.299	31		
309	Mesitas		Mes-E1	.2657	29		
310	Mesitas						
311	Mesitas			.1723	4		
312	Mesitas						
313	Mesitas		Mes-E1	.1726	14		
314	Mesitas		Mes-E1	.0424	6		
315	Mesitas			.0885	8		
316	Mesitas						
317	Mesitas						
318	Mesitas		Mes-E1	.1768	18		
319	Mesitas		Mes-E1	.1927	29		
320	Mesitas			.0211	4		
321	Mesitas						
322	Mesitas						
323	Mesitas						
324	Mesitas	42	A042-1S	4.0518	217		Texoloc
325	Mesitas	42	A042-1S	1.8028	156		Texoloc
326	Mesitas		Mes-E1	.094	11		
327	Mesitas		Mes-E1	.0242	3		
328	Mesitas		Mes-E1	.1907	33		
329	Mesitas		Mes-E1	.1651	15		
330	Mesitas			3.5666	280		
331	Mesitas		Mes-E1	.1825	28		
332	Mesitas			.2291	16		
333	Mesitas			.1081	5		
334	Mesitas		Mes-E1				
335	Mesitas						

READ ONLY / NO DOWNLOAD

Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
336	Mesitas						
337	Mesitas	38	A038-1P	.0358	7		
338	Mesitas	38	A038-1P	.0164	1		
339	Mesitas		Mes-F1	.3012	41		
340	Mesitas		Mes-F1	1.7337	136		
341	Mesitas		Mes-A1	.2316	12		
342	Mesitas		Mes-A1	.2956	12		
343	Mesitas		Mes-F1	8.5537	172		
344	Mesitas		Mes-A1	.1239	7		
345	Mesitas						
346	Mesitas		Mes-E1	.7033	44		
347	Mesitas		Mes-F1	.3311	42		
348	Mesitas		Mes-F1	.7435	80		
349	Mesitas		Mes-A1	.43	37		
350	Mesitas						
351	Mesitas						
352	Mesitas	38	A038-1P	.0249	4		
353	Mesitas		Mes-A1	.722	59		
354	Mesitas		Mes-E1	.3227	49		
355	Mesitas		Mes-A1	.8736	81		
356	Mesitas		Mes-F1	.3791	30		
357	Mesitas	40	A040-1S	.3947	45		Texoloc
358	Mesitas		Mes-E1	.0125	1		
359	Mesitas	41	A041-1S				Texoloc
360	Mesitas	42	A042-1S	2.0832	127		Texoloc
361	Mesitas		Mes-F1	.4903	66		
362	Mesitas		Mes-F1	.4256	30		
363	Mesitas		Mes-F1	1.8246	189		
364	Mesitas		Mes-E1	1.5719	85		
365	Mesitas			.0429	6		
366	Mesitas		Mes-F1	.0474	11		
367	Mesitas	42	A042-1S	.5297	28		Texoloc
368	Mesitas		Mes-F1	.065	13		
369	Mesitas		Mes-F1	.0749	3		
370	Mesitas		Mes-F1	.0532	5		
371	Mesitas			.2261	45		
372	Mesitas	43	A043-1P	.0118	3		
373	Mesitas	45	A045-2S	.3725	50	Texoloc	Texoloc
374	Mesitas	43	A043-1P	.0101	4		
375	Mesitas	45	A045-2S	1.5975	121	Texoloc	Texoloc
376	Mesitas	43	A043-1P	.012	6		
377	Mesitas	44	A044-1S	.5007	16		Texoloc
378	Mesitas	45	A045-2S	2.3335	152	Texoloc	Texoloc
500	Amomoloc			15.481	2286		
501	Amomoloc	22	A022-3S	8.2736	659	Early Tlatempa	Tlatempa
502	Amomoloc			.1869	30		

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Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
503	Amomoloc			.0661	14		
504	Amomoloc	22	A022-3S	.3995	41	Early Tlatempa	Tlatempa
505	Amomoloc			.2707	28		
506	Amomoloc	22	A022-3S	1.1041	41	Early Tlatempa	Tlatempa
507	Amomoloc			.1345	3		
508	Amomoloc	21	A021-2S	15.4745	2032		Tlatempa
509	Amomoloc	21	A021-2S	5.6806	579		Tlatempa
510	Amomoloc			7.3758	1285		
511	Amomoloc	22	A022-3S	.1107	15	Early Tlatempa	Tlatempa
512	Amomoloc			.0929	12		
513	Amomoloc	22	A022-3S	1.1523	57	Early Tlatempa	Tlatempa
514	Amomoloc	22	A022-3S	1.0384	80	Early Tlatempa	Tlatempa
515	Amomoloc	22	A022-3S	.5722	23	Early Tlatempa	Tlatempa
516	Amomoloc			9.5348	819		
517	Amomoloc			1.7577	102		
518	Amomoloc	24		1.8093	138		
519	Amomoloc	23	A023-2S	7.9728	573	Early Tlatempa	Tlatempa
520	Amomoloc	28	A028-1S	1.6359	66		Tlatempa
521	Amomoloc	28	A028-1S	5.2647	185		Tlatempa
522	Amomoloc	23	A023-2S	3.9166	170	Early Tlatempa	Tlatempa
523	Amomoloc			.4462	29		
524	Amomoloc						
525	Amomoloc	24		.4791	37		
526	Amomoloc						
527	Amomoloc			4.1961	297		
528	Amomoloc			2.2138	197		
529	Amomoloc						
530	Amomoloc						
531	Amomoloc						
532	Amomoloc	23	A023-2S	5.2358	364	Early Tlatempa	Tlatempa
533	Amomoloc						
534	Amomoloc	23	A023-2S	4.4205	253	Early Tlatempa	Tlatempa
535	Amomoloc			2.1203	186		
536	Amomoloc			2.0462	259		
537	Amomoloc	23	A023-2S	3.4202	276	Early Tlatempa	Tlatempa
538	Amomoloc			3.1168	357		
539	Amomoloc			7.1142	811		
540	Amomoloc			.2806	21		
541	Amomoloc			3.1163	392		
542	Amomoloc			.1589	18		
543	Amomoloc	22	A022-3S	1.2474	100	Early Tlatempa	Tlatempa
544	Amomoloc			2.3438	244		
545	Amomoloc			.8067	90		
546	Amomoloc			1.0711	161		
547	Amomoloc	27					
548	Amomoloc			.2477	32		

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Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
549	Amomoloc	47	A047-1S	1.7062	138	Early Tlatempa	Tlatempa
550	Amomoloc						
551	Amomoloc			.5096	49		
552	Amomoloc	27					
553	Amomoloc						
554	Amomoloc			.2384	36		
555	Amomoloc						
556	Amomoloc			.2295	17		
557	Amomoloc			1.2478	74		
558	Amomoloc			1.8496	173		
559	Amomoloc			.5452	114		
560	Amomoloc	22	A022-3S	.4705	44	Early Tlatempa	Tlatempa
561	Amomoloc						
562	Amomoloc			.2301	9		
563	Amomoloc			1.2722	218		
564	Amomoloc			3.6055	408		
565	Amomoloc						
566	Amomoloc			.9594	96		
567	Amomoloc			10.9578	839		
568	Amomoloc			.1154	6		
569	Amomoloc			.3044	14		
570	Amomoloc			.0501	4		
571	Amomoloc			.9761	49		
572	Amomoloc						
573	Amomoloc			1.85	107		
574	Amomoloc			.6	22		
575	Amomoloc			.03	2		
576	Amomoloc			1.38	63		
577	Amomoloc			3.06	441		
578	Amomoloc			1.565	41		
579	Amomoloc			3.52	231		
580	Amomoloc	23	A023-2S	.13	11	Early Tlatempa	Tlatempa
581	Amomoloc			2.505	172		
582	Amomoloc						
583	Amomoloc			1.34	70		
584	Amomoloc			.48	19		
585	Amomoloc	23	A023-2S	.5831	12	Early Tlatempa	Tlatempa
586	Amomoloc	46	A046-2S	.8348	66	Tzompantepec	Tzompantepec
587	Amomoloc			1.02	99		
588	Amomoloc	46	A046-2S	1.3234	54	Tzompantepec	Tzompantepec
589	Amomoloc	46	A046-2S	2.2321	213	Tzompantepec	Tzompantepec
590	Amomoloc			1.31	60		
591	Amomoloc						
592	Amomoloc	46	A046-2S	.3266	21	Tzompantepec	Tzompantepec
593	Amomoloc	46	A046-2S	1.8113	73	Tzompantepec	Tzompantepec
594	Amomoloc	49	A049-1S	1.16	55	Early Tlatempa	Tlatempa

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Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
595	Amomoloc			.16	21		
596	Amomoloc	46	A046-2S	.9221	61	Tzompantepec	Tzompantepec
597	Amomoloc	47		6.7354	216		
598	Amomoloc			1.77	195		
599	Amomoloc			.41	32		
600	Amomoloc			2.4229	240		
601	Amomoloc	46	A046-2S	.3216	20	Tzompantepec	Tzompantepec
602	Amomoloc	47	A047-1S	2.66829	164	Early Tlatempa	Tlatempa
603	Amomoloc			3.613	467		
604	Amomoloc			5.79	354		
605	Amomoloc	46	A046-2S	.3511	15	Tzompantepec	Tzompantepec
606	Amomoloc	46	A046-2S	3.577	114	Tzompantepec	Tzompantepec
607	Amomoloc			4.685	484		
608	Amomoloc			9.015	745		
609	Amomoloc	47	A047-1S	12.3931	650	Early Tlatempa	Tlatempa
610	Amomoloc	48	A048-1S	3.532	137	Late Tlatempa	Tlatempa
611	Amomoloc	48	A048-1S	1.942	87	Late Tlatempa	Tlatempa
612	Amomoloc	46	A046-2S	.1132	12	Tzompantepec	Tzompantepec
613	Amomoloc	47	A047-1S	6.245	160	Early Tlatempa	Tlatempa
614	Amomoloc	46	A046-2S	.7154	64	Tzompantepec	Tzompantepec
615	Amomoloc	46	A046-2S	.7506	75	Tzompantepec	Tzompantepec
616	Amomoloc						
617	Amomoloc	46	A046-2S	1.2512	60	Tzompantepec	Tzompantepec
618	Amomoloc			1.24	62		
619	Amomoloc	47	A047-1S	2.445	109	Early Tlatempa	Tlatempa
620	Amomoloc	46	A046-2S	2.1277	84	Tzompantepec	Tzompantepec
621	Amomoloc	47	A047-1S	10.435	132	Early Tlatempa	Tlatempa
622	Amomoloc	47	A047-1S	.0838	1	Early Tlatempa	Tlatempa
623	Amomoloc			5.47	342		
624	Amomoloc	50	A050-1S	1.975	68		Tlatempa
625	Amomoloc	46	A046-2S	.02	2	Tzompantepec	Tzompantepec
626	Amomoloc	47	A047-1S	11.28	517	Early Tlatempa	Tlatempa
627	Amomoloc	46	A046-2S	.1229	12	Tzompantepec	Tzompantepec
628	Amomoloc		A051-2S	1.7464	70		
629	Amomoloc	46	A046-2S	.8641	25	Tzompantepec	Tzompantepec
630	Amomoloc	46	A046-2S	.936	41	Tzompantepec	Tzompantepec
631	Amomoloc	46	A046-2S	1.2897	45	Tzompantepec	Tzompantepec
632	Amomoloc	47	A047-1S	5.5104	158	Early Tlatempa	Tlatempa
633	Amomoloc	46	A046-2S	0	0	Tzompantepec	Tzompantepec
634	Amomoloc			7.07	598		
635	Amomoloc	46	A046-2S	.532	22	Tzompantepec	Tzompantepec
636	Amomoloc	46	A046-2S	.545	22	Tzompantepec	Tzompantepec
637	Amomoloc	47	A047-1S	4.12	220	Early Tlatempa	Tlatempa
638	Amomoloc	47	A047-1S	1.6583	76	Early Tlatempa	Tlatempa
639	Amomoloc	48/54	A048-1S	1.045	89	Late Tlatempa	Tlatempa
640	Amomoloc	47	A047-1S	3.585	130	Early Tlatempa	Tlatempa

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Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
641	Amomoloc	46	A046-2S	.045	2	Tzompantepec	Tzompantepec
642	Amomoloc	46	A046-2S	0	0	Tzompantepec	Tzompantepec
643	Amomoloc	46	A046-2S	.235	13	Tzompantepec	Tzompantepec
644	Amomoloc	46	A046-2S	.3104	17	Tzompantepec	Tzompantepec
645	Amomoloc	52	A052-1S	1.23	61		Tlatempa
646	Amomoloc	46	A046-2S	.525	31	Tzompantepec	Tzompantepec
647	Amomoloc	47	A047-1S	2.095	82	Early Tlatempa	Tlatempa
648	Amomoloc	46	A046-2S	.6334	23	Tzompantepec	Tzompantepec
649	Amomoloc	46	A046-2S	.6061	14	Tzompantepec	Tzompantepec
650	Amomoloc	46	A046-2S	.62	22	Tzompantepec	Tzompantepec
651	Amomoloc			.04	1		
652	Amomoloc	51	A51-2S	1.175	58		Tlatempa
653	Amomoloc	46	A046-2S	.615	62	Tzompantepec	Tzompantepec
654	Amomoloc	47	A047-1S	1.495	60	Early Tlatempa	Tlatempa
655	Amomoloc	47	A047-1S	.585	15	Early Tlatempa	Tlatempa
656	Amomoloc	47	A047-1S	.77	33	Early Tlatempa	Tlatempa
657	Amomoloc	46	A046-2S	1.1	60	Tzompantepec	Tzompantepec
658	Amomoloc	46	A046-2S	2.135	72	Tzompantepec	Tzompantepec
659	Amomoloc			7.375	404		
660	Amomoloc	51	A51-2S	.375	38		Tlatempa
661	Amomoloc	48/54	A048-1S	3.37	188	Late Tlatempa	Tlatempa
662	Amomoloc			.75	78		
663	Amomoloc	53	A053-1S	4.67	85		Tlatempa
664	Amomoloc			1.835	189		
665	Amomoloc	54	A054-2S	2.5	109	Late Tlatempa	Tlatempa
666	Amomoloc	54	A054-2S	14.27	473	Late Tlatempa	Tlatempa
667	Amomoloc	23	A023-2S	3.605	194	Early Tlatempa	Tlatempa
668	Amomoloc	53	A053-1S	4.025	91		Tlatempa
669	Amomoloc			.61	29		
670	Amomoloc	51	A51-2S	0	0		Tlatempa
671	Amomoloc			4.16	183		
672	Amomoloc			4.92	222		
673	Amomoloc			5.54	95		
674	Amomoloc						
675	Amomoloc			1.75	95		
676	Amomoloc			.1	9		
677	Amomoloc			3.36	283		
678	Amomoloc			1.66	128		
679	Amomoloc	48/54		1.96	125		
680	Amomoloc						
681	Amomoloc	54	A054-2S	2.28	142	Late Tlatempa	Tlatempa
682	Amomoloc			.2	17		
683	Amomoloc			1.47	76		
684	Amomoloc			1.03	61		
685	Amomoloc	54	A054-2S	1.815	143	Late Tlatempa	Tlatempa
686	Amomoloc	54	A054-2S	2.68	141	Late Tlatempa	Tlatempa

READ ONLY / NO DOWNLOAD

Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
687	Amomoloc			.05	5		
688	Amomoloc			1.31	64		
689	Amomoloc			1.73	51		
690	Amomoloc			3.62	347		
691	Amomoloc			1.57	93		
692	Amomoloc			.94	73		
693	Amomoloc	54	A054-2S	3.065	126	Late Tlatempa	Tlatempa
694	Amomoloc	54	A054-2S	.65	39	Late Tlatempa	Tlatempa
695	Amomoloc						
696	Amomoloc	54	A054-2S	7.75	456	Late Tlatempa	Tlatempa
697	Amomoloc	54	A054-2S			Late Tlatempa	Tlatempa
698	Amomoloc			2.92	178		
699	Amomoloc			3.92	265		
700	Amomoloc			3.4	161		
701	Amomoloc			3.17	200		
702	Amomoloc	54	A054-2S	5.47	334	Late Tlatempa	Tlatempa
703	Amomoloc	54	A054-2S	3.305	75	Late Tlatempa	Tlatempa
704	Amomoloc			9.08	880		
705	Amomoloc			2.66	162		
706	Amomoloc	56	A056-1S	1.955	93		Tlatempa
707	Amomoloc			3.96	219		
708	Amomoloc			9.55	551		
709	Amomoloc			2.25	105		
710	Amomoloc			5.64	342		
711	Amomoloc	58	A058-1S	.76	17		Tlatempa
712	Amomoloc			2.41	129		
713	Amomoloc	57	A057-2S	6.7	266	Early Tlatempa	Tlatempa
714	Amomoloc	57	A057-2S	12.33	611	Early Tlatempa	Tlatempa
715	Amomoloc			3.77	197		
716	Amomoloc			1.53	71		
717	Amomoloc			1	41		
718	Amomoloc	48	A048-1S	.165	6	Late Tlatempa	Tlatempa
719	Amomoloc	59	A059-2S	.61	25		Tlatempa
720	Amomoloc	60	A060-1S	3.36	194	Late Tlatempa	Tlatempa
721	Amomoloc	60	A060-1S	1.145	75	Late Tlatempa	Tlatempa
722	Amomoloc	61	A061-2S	.45	18		
723	Amomoloc			4.14	111		
724	Amomoloc	60	A060-1S	.8	40	Late Tlatempa	Tlatempa
725	Amomoloc	60	A060-1S	1.835	70	Late Tlatempa	Tlatempa
726	Amomoloc	57	A057-2S	.235	18	Early Tlatempa	Tlatempa
727	Amomoloc	57	A057-2S	.745	62	Early Tlatempa	Tlatempa
728	Amomoloc	60	A060-1S	6.92	382	Late Tlatempa	Tlatempa
729	Amomoloc	59	A059-2S	1.15	32		Tlatempa
730	Amomoloc			.8	26		
731	Amomoloc			5	218		
732	Amomoloc	59	A059-2S	1.75	64		Tlatempa

READ ONLY / NO DOWNLOAD

Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
733	Amomoloc	60	A060-1S	3.69	264	Late Tlatempa	Tlatempa
734	Amomoloc	63	A063-2S	4.83	248	Early Tlatempa	Tlatempa
735	Amomoloc	60	A060-1S	3.61	374	Late Tlatempa	Tlatempa
736	Amomoloc						
737	Amomoloc	64	A064-2S	2.705	97	Late Tlatempa	Tlatempa
738	Amomoloc	61	A061-2S				
739	Amomoloc			.57	31		
740	Amomoloc	63	A063-2S	2.3	140	Early Tlatempa	Tlatempa
741	Amomoloc	60	A060-1S	7.045	371	Late Tlatempa	Tlatempa
742	Amomoloc	64	A064-2S	1.015	77	Late Tlatempa	Tlatempa
743	Amomoloc	63	A063-2S	.78	40	Early Tlatempa	Tlatempa
744	Amomoloc	64	A064-2S	3.605	195	Late Tlatempa	Tlatempa
745	Amomoloc			8.66	481		
746	Amomoloc	63	A063-2S	.58	30	Early Tlatempa	Tlatempa
747	Amomoloc	64	A064-2S	1.665	60	Late Tlatempa	Tlatempa
748	Amomoloc	46	A046-2S	0	0	Tzompantepec	Tzompantepec
749	Amomoloc	54	A054-2S	.36	19	Late Tlatempa	Tlatempa
750	Amomoloc	48/54	A048-1S	.2	8	Late Tlatempa	Tlatempa
751	Amomoloc			.1831	5		
770	Amomoloc			20.81	2670		
771	Amomoloc			1.06	27		
772	Amomoloc	64	A064-2S	2.57	168	Late Tlatempa	Tlatempa
773	Amomoloc			3.16	352		
774	Amomoloc	64	A064-2S	.85	79	Late Tlatempa	Tlatempa
775	Amomoloc	64	A064-2S	1.11	78	Late Tlatempa	Tlatempa
776	Amomoloc			.59	38		
777	Amomoloc			.13	11		
778	Amomoloc			.79	54		
779	Amomoloc			3.48	87		
780	Amomoloc						
781	Amomoloc			.16	8		
782	Amomoloc						
783	Amomoloc						
784	Amomoloc			.22	3		
785	Amomoloc			.37	30		
786	Amomoloc			.05	7		
787	Amomoloc			.08	3		
788	Amomoloc						
789	Amomoloc			.17	11		
790	Amomoloc			.01	1		
791	Amomoloc						
792	Amomoloc						
793	Amomoloc			.08	13		
794	Amomoloc						
795	Amomoloc						
796	Amomoloc						

READ ONLY / NO DOWNLOAD

Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
797	Amomoloc						
798	Amomoloc						
799	Amomoloc						
800	Amomoloc						
801	Amomoloc						
802	Amomoloc			.02	2		
803	Amomoloc			.22	5		
804	Amomoloc						
805	Amomoloc			6.55	695		
806	Amomoloc			3.27	414		
807	Amomoloc						
808	Amomoloc						
809	Amomoloc	66		.69	71		
810	Amomoloc			11.09	1189		
811	Amomoloc			5.63	612		
812	Amomoloc	66	A066-1S	.59	57		Tlatempa
813	Amomoloc	66	A066-1S	.99	138		Tlatempa
814	Amomoloc	66	A066-1S	.37	34		Tlatempa
815	Amomoloc	68	A068-4S	.14	28	Late Tlatempa	Tlatempa
816	Amomoloc	66	A066-1S	.71	100		Tlatempa
817	Amomoloc	66	A066-1S	1	98		Tlatempa
818	Amomoloc	68	A068-4S	.05	4	Late Tlatempa	Tlatempa
819	Amomoloc	66	A066-1S	1.1	104		Tlatempa
820	Amomoloc			4.05	377		
821	Amomoloc			1.59	179		
822	Amomoloc	68	A068-4S	.3	44	Late Tlatempa	Tlatempa
823	Amomoloc			9.77	1056		
824	Amomoloc	68	A068-4S	.45	37	Late Tlatempa	Tlatempa
825	Amomoloc			7.8	750		
826	Amomoloc	68	A068-4S	.7	41	Late Tlatempa	Tlatempa
827	Amomoloc			4.92	337		
828	Amomoloc			4.97	322		
829	Amomoloc	68	A068-4S	.14	11	Late Tlatempa	Tlatempa
830	Amomoloc	68	A068-4S	.85	34	Late Tlatempa	Tlatempa
831	Amomoloc	73	A073-2S	.69	45	Late Tlatempa	Tlatempa
832	Amomoloc	73	A073-2S	.58	81	Late Tlatempa	Tlatempa
833	Amomoloc	68	A068-4S	0	0	Late Tlatempa	Tlatempa
834	Amomoloc	68	A068-4S	.07	9	Late Tlatempa	Tlatempa
835	Amomoloc	68	A068-4S	.15	12	Late Tlatempa	Tlatempa
836	Amomoloc	68	A068-4S	.29	27	Late Tlatempa	Tlatempa
837	Amomoloc	68	A068-4S	.96	67	Late Tlatempa	Tlatempa
838	Amomoloc			.86	84		
839	Amomoloc			3.37	193		
840	Amomoloc			5	463		
841	Amomoloc			4.88	420		
842	Amomoloc	68	A068-4S	.91	58	Late Tlatempa	Tlatempa

READ ONLY / NO DOWNLOAD

Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
843	Amomoloc	68	A068-4S	1.11	133	Late Tlatempa	Tlatempa
844	Amomoloc			8.9	786		
845	Amomoloc	68	A068-4S	8.52	290	Late Tlatempa	Tlatempa
846	Amomoloc	71	A071-1S	3.24	227	Early Tlatempa	Tlatempa
847	Amomoloc	71	A071-1S	2.48	195	Early Tlatempa	Tlatempa
848	Amomoloc	71	A071-1S	2.29	180	Early Tlatempa	Tlatempa
849	Amomoloc	68	A068-4S	9.92	223	Late Tlatempa	Tlatempa
850	Amomoloc			11.53	970		
851	Amomoloc			4.83	329		
852	Amomoloc	73	A073-2S	1.95	66	Late Tlatempa	Tlatempa
853	Amomoloc	73	A073-2S	2.34	135	Late Tlatempa	Tlatempa
854	Amomoloc	73	A073-2S	6.12	170	Late Tlatempa	Tlatempa
855	Amomoloc	68	A068-4S	.03	2	Late Tlatempa	Tlatempa
856	Amomoloc	68	A068-4S	1.48	41	Late Tlatempa	Tlatempa
857	Amomoloc	68	A068-4S	.71	59	Late Tlatempa	Tlatempa
858	Amomoloc	68	A068-4S	.47	44	Late Tlatempa	Tlatempa
859	Amomoloc	68	A068-4S	1.16	41	Late Tlatempa	Tlatempa
860	Amomoloc	68	A068-4S	.5	21	Late Tlatempa	Tlatempa
861	Amomoloc	68	A068-4S	.97	44	Late Tlatempa	Tlatempa
862	Amomoloc	68	A068-4S	1.17	40	Late Tlatempa	Tlatempa
863	Amomoloc	68	A068-4S	.11	16	Late Tlatempa	Tlatempa
864	Amomoloc	68	A068-4S	.67	58	Late Tlatempa	Tlatempa
865	Amomoloc	68	A068-4S	4.83	147	Late Tlatempa	Tlatempa
866	Amomoloc	73	A073-2S	.07	9	Late Tlatempa	Tlatempa
867	Amomoloc			1.23	86		
868	Amomoloc			.46	28		
869	Amomoloc			.46	20		
870	Amomoloc			.02	5		
871	Amomoloc	73	A073-2S	0	0	Late Tlatempa	Tlatempa
872	Amomoloc	73	A073-2S	2.18	83	Late Tlatempa	Tlatempa
873	Amomoloc			1.42	143		
874	Amomoloc			2.08	150		
875	Amomoloc			2.45	208		
876	Amomoloc	73	A073-2S	.42	36	Late Tlatempa	Tlatempa
877	Amomoloc			1.16	98		
878	Amomoloc	73	A073-2S	4.53	151	Late Tlatempa	Tlatempa
879	Amomoloc	73	A073-2S	.07	5	Late Tlatempa	Tlatempa
880	Amomoloc	73	A073-2S	3.58	125	Late Tlatempa	Tlatempa
881	Amomoloc			6.49	330		
882	Amomoloc			.83	67		
883	Amomoloc	73	A073-2S	.3	17	Late Tlatempa	Tlatempa
884	Amomoloc	73	A073-2S	2.32	96	Late Tlatempa	Tlatempa
885	Amomoloc	68	A068-4S	.75	53	Late Tlatempa	Tlatempa
886	Amomoloc	73	A073-2S	11.17	573	Late Tlatempa	Tlatempa
887	Amomoloc	73	A073-2S	.83	43	Late Tlatempa	Tlatempa
888	Amomoloc	73	A073-2S	2.77	120	Late Tlatempa	Tlatempa

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Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
889	Amomoloc	68	A068-4S	9.15	175	Late Tlatempa	Tlatempa
890	Amomoloc	68	A068-4S	0	0	Late Tlatempa	Tlatempa
891	Amomoloc			1.55	94		
892	Amomoloc			2	139		
893	Amomoloc	68	A068-4S	1.63	55	Late Tlatempa	Tlatempa
894	Amomoloc	68	A068-4S	.5	27	Late Tlatempa	Tlatempa
895	Amomoloc	68	A068-4S	2.86	73	Late Tlatempa	Tlatempa
896	Amomoloc			.2	15		
897	Amomoloc			.52	22		
898	Amomoloc	73	A073-2S	1.03	72	Late Tlatempa	Tlatempa
899	Amomoloc	73	A073-2S	6.47	419	Late Tlatempa	Tlatempa
900	Amomoloc			1.12	84		
901	Amomoloc			.51	48		
902	Amomoloc			.48	44		
903	Amomoloc			1.74	138		
904	Amomoloc	73	A073-2S	.04	5	Late Tlatempa	Tlatempa
905	Amomoloc	73	A073-2S	0	0	Late Tlatempa	Tlatempa
906	Amomoloc	73	A073-2S	.94	43	Late Tlatempa	Tlatempa
907	Amomoloc			.87	58		
908	Amomoloc			.27	16		
909	Amomoloc	68	A068-4S	2.67	133	Late Tlatempa	Tlatempa
910	Amomoloc			1.25	90		
911	Amomoloc			1.85	112		
912	Amomoloc			1.82	129		
913	Amomoloc			5.3	341		
914	Amomoloc	73	A073-2S	3.88	259	Late Tlatempa	Tlatempa
915	Amomoloc	73	A073-2S	16.74	878	Late Tlatempa	Tlatempa
916	Amomoloc			.23	18		
917	Amomoloc			.76	39		
918	Amomoloc			.57	43		
919	Amomoloc			.65	47		
920	Amomoloc	73	A073-2S	1.04	84	Late Tlatempa	Tlatempa
921	Amomoloc			1.18	59		
922	Amomoloc			.2	16		
923	Amomoloc			4.63	261		
924	Amomoloc			.3	20		
925	Amomoloc	67	A067-1S	2.64	200	Late Tlatempa	Tlatempa
926	Amomoloc			.31	27		
927	Amomoloc						
928	Amomoloc	67	A067-1S	1.58	137	Late Tlatempa	Tlatempa
929	Amomoloc			1.45	119		
930	Amomoloc			.67	33		
931	Amomoloc	74	A074-1S	2.86	249	Late Tlatempa	Tlatempa
932	Amomoloc	67	A067-1S	3.32	120	Late Tlatempa	Tlatempa
933	Amomoloc	68	A068-4S	24.29	633	Late Tlatempa	Tlatempa
934	Amomoloc	68	A068-4S	3.89	115	Late Tlatempa	Tlatempa

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Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
935	Amomoloc			1.02	91		
936	Amomoloc	67	A067-1S	1.91	89	Late Tlatempa	Tlatempa
937	Amomoloc	67	A067-1S	.53	6	Late Tlatempa	Tlatempa
938	Amomoloc			.24	30		
939	Amomoloc			.65	18		
940	Amomoloc						
941	Amomoloc						
942	Amomoloc	74	A074-1S	5.46	402	Late Tlatempa	Tlatempa
943	Amomoloc			4.56	341		
944	Amomoloc			1.34	84		
945	Amomoloc			1.7	101		
946	Amomoloc			.75	56		
947	Amomoloc						
948	Amomoloc	73	A073-2S	0	0	Late Tlatempa	Tlatempa
949	Amomoloc	73	A073-2S	1.7	47	Late Tlatempa	Tlatempa
950	Amomoloc	73	A073-2S	2.22	77	Late Tlatempa	Tlatempa
951	Amomoloc	73	A073-2S	1.15	94	Late Tlatempa	Tlatempa
952	Amomoloc	73	A073-2S	.64	76	Late Tlatempa	Tlatempa
953	Amomoloc	73	A073-2S	1.87	116	Late Tlatempa	Tlatempa
954	Amomoloc	73	A073-2S	2.4	149	Late Tlatempa	Tlatempa
955	Amomoloc	73	A073-2S	1.4	108	Late Tlatempa	Tlatempa
956	Amomoloc	73	A073-2S	3.58	218	Late Tlatempa	Tlatempa
957	Amomoloc	73	A073-2S	3.55	211	Late Tlatempa	Tlatempa
958	Amomoloc	71	A071-1S	1.36	83	Early Tlatempa	Tlatempa
959	Amomoloc	71	A071-1S	3.51	313	Early Tlatempa	Tlatempa
960	Amomoloc						
961	Amomoloc	71	A071-1S	1.47	93	Early Tlatempa	Tlatempa
962	Amomoloc	68	A068-4S	11.8	288	Late Tlatempa	Tlatempa
963	Amomoloc	68	A068-4S	8	219	Late Tlatempa	Tlatempa
964	Amomoloc	68	A068-4S	.33	27	Late Tlatempa	Tlatempa
965	Amomoloc	74	A074-1S	3.56	252	Late Tlatempa	Tlatempa
966	Amomoloc	69	A069-2S				Tlatempa
967	Amomoloc	74	A074-1S	3.85	334	Late Tlatempa	Tlatempa
968	Amomoloc	74	A074-1S	2.29	161	Late Tlatempa	Tlatempa
969	Amomoloc	74	A074-1S	.22	17	Late Tlatempa	Tlatempa
970	Amomoloc	74	A074-1S	1.48	69	Late Tlatempa	Tlatempa
971	Amomoloc	74	A074-1S	.8	41	Late Tlatempa	Tlatempa
972	Amomoloc	69	A069-2S	.7	64		Tlatempa
973	Amomoloc						
974	Amomoloc	69	A069-2S	.55	42		Tlatempa
975	Amomoloc	69	A069-2S	.26	20		Tlatempa
976	Amomoloc						
977	Amomoloc	75	A075-1S	.95	88		Tlatempa
978	Amomoloc	75	A075-1S	.47	42		Tlatempa
979	Amomoloc	76	A076-1S	.96	64		Tlatempa
980	Amomoloc	76	A076-1S	.76	46		Tlatempa

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Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
981	Amomoloc			4.06	191		
982	Amomoloc	75	A075-1S	.53	34		Tlatempa
983	Amomoloc						
984	Amomoloc						
985	Amomoloc						
986	Amomoloc						
987	Amomoloc			5.05	198		
988	Amomoloc			3.63	158		
989	Amomoloc	78	A078-1S	6.15	180		Tlatempa
990	Amomoloc	78	A078-1S	6.63	164		Tlatempa
991	Amomoloc			4.35	255		
1043	Laguna Area A	3	B003-1S	.65	52	Early Tezoquipan	Early Tezoquipan
1044	Laguna Area A	3	B003-1S	.1	9	Early Tezoquipan	Early Tezoquipan
1045	Laguna Area A	3	B003-1S	.04	13	Early Tezoquipan	Early Tezoquipan
1047	Laguna Area A	3	B003-1S	.63	24	Early Tezoquipan	Early Tezoquipan
1049	Laguna Area A	3	B003-1S	.59	38	Early Tezoquipan	Early Tezoquipan
1052	Laguna Area A	3	B003-1S	.01	2	Early Tezoquipan	Early Tezoquipan
1065	Laguna Area B	13	B013-1S	6.65	590	Early Tezoquipan	Early Tezoquipan
1068	Laguna Area B	13	B013-1S	2.30	202	Early Tezoquipan	Early Tezoquipan
1071	Laguna Area B	13	B013-1S	8.70	859	Early Tezoquipan	Early Tezoquipan
1074	Laguna Area B	B013?		1.24	54		
1075	Laguna Area B	13	B013-2S	.73	75	Early Tezoquipan	Early Tezoquipan
1077	Laguna Area B	13	B013-2S	1.42	121	Early Tezoquipan	Early Tezoquipan
1083	Laguna Area B	13	B013-2S	5.63	282	Early Tezoquipan	Early Tezoquipan
1084	Laguna Area B	13	B013-2S	5.65	289	Early Tezoquipan	Early Tezoquipan
1086	Laguna Area B	13	B013-2S	7.59	354	Early Tezoquipan	Early Tezoquipan
1087	Laguna Area B	13	B013-2S	5.42	209	Early Tezoquipan	Early Tezoquipan
1089	Laguna Area B	13	B013-2S	.54	69	Early Tezoquipan	Early Tezoquipan
1100	Laguna Area B	13	B013-2S	.06	1	Early Tezoquipan	Early Tezoquipan
1101	Laguna Area B	13	B013-2S	.54	27	Early Tezoquipan	Early Tezoquipan
1102	Laguna Area B	13	B013-2S	.69	32	Early Tezoquipan	Early Tezoquipan
1110	Laguna Area A	3	B003-1S	1.71	139	Early Tezoquipan	Early Tezoquipan
1111	Laguna Area A	3	B003-1S	.82	67	Early Tezoquipan	Early Tezoquipan
1112	Laguna Area A	3	B003-1S	.36	14	Early Tezoquipan	Early Tezoquipan
1119	Laguna Area B	13	B013-2S	1.27	41	Early Tezoquipan	Early Tezoquipan
1126	Laguna Area B	13	B013-2S	.02	3	Early Tezoquipan	Early Tezoquipan
1127	Laguna Area B	13	B013-2S			Early Tezoquipan	Early Tezoquipan
1128	Laguna Area B	13	B013-2S			Early Tezoquipan	Early Tezoquipan
1129	Laguna Area B	13	B013-2S			Early Tezoquipan	Early Tezoquipan
1130	Laguna Area B	13	B013-2S	.10	2	Early Tezoquipan	Early Tezoquipan
1131	Laguna Area B	13	B013-1S	.04	3	Early Tezoquipan	Early Tezoquipan
1132	Laguna Area B	13	B013-2S	.03	2	Early Tezoquipan	Early Tezoquipan
1133	Laguna Area B	13	B013-2S	.07	4	Early Tezoquipan	Early Tezoquipan
1134	Laguna Area B	13	B013-2S		0	Early Tezoquipan	Early Tezoquipan
1135	Laguna Area B	13	B013-1S	.34	22	Early Tezoquipan	Early Tezoquipan
1136	Laguna Area B	13	B013-1S	.02	1	Early Tezoquipan	Early Tezoquipan

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Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
1139	Laguna Area B	13	B013-2S		0	Early Tezoquipan	Early Tezoquipan
1220	Laguna Area B	36	B036-2S	11.90	468	Early Tezoquipan	Early Tezoquipan
1226	Laguna Area B	36	B036-2S	.65	33	Early Tezoquipan	Early Tezoquipan
1230	Laguna Area B	36	B036-2S	2.03	148	Early Tezoquipan	Early Tezoquipan
1232	Laguna Area B	36	B036-2S	.50	22	Early Tezoquipan	Early Tezoquipan
1233	Laguna Area B	36	B036-2S	.36	19	Early Tezoquipan	Early Tezoquipan
1265	Laguna Area B	36	B036-2S	1.59	94	Early Tezoquipan	Early Tezoquipan
1266	Laguna Area B	36	B036-2S	1.84	109	Early Tezoquipan	Early Tezoquipan
1267	Laguna Area B	36	B036-2S	1.90	163	Early Tezoquipan	Early Tezoquipan
1268	Laguna Area B	36	B036-2S	.99	37	Early Tezoquipan	Early Tezoquipan
1269	Laguna Area B	36	B036-2S	.89	23	Early Tezoquipan	Early Tezoquipan
1270	Laguna Area B	36	B036-2S	.82	19	Early Tezoquipan	Early Tezoquipan
1271	Laguna Area B	36	B036-2S	.26	4	Early Tezoquipan	Early Tezoquipan
1272	Laguna Area B	36	B036-2S	.52	33	Early Tezoquipan	Early Tezoquipan
1273	Laguna Area B	36	B036-2S	.13	15	Early Tezoquipan	Early Tezoquipan
1286	Laguna Area F	39	B039-2S	.15	23		Late Tezoquipan
1290	Laguna Area F	39	B039-2S	.59	48		Late Tezoquipan
1294	Laguna Area F	56	B056-2S	.39	26		Early Tezoquipan
1298	Laguna Area F	39	B039-2S	.23	22		Late Tezoquipan
1299	Laguna Area F	39	B039-2S	1.27	60		Late Tezoquipan
1302	Laguna Area F	39	B039-2S	.40	34		Late Tezoquipan
1305	Laguna Area F	39	B039-2S	.06	7		Late Tezoquipan
1307	Laguna Area F	39	B039-2S	.55	24		Late Tezoquipan
1309	Laguna Area F	39	B039-2S	.23	28		Late Tezoquipan
1313	Laguna Area F	55	B055-1S	9.57	593	Early Tezoquipan	Early Tezoquipan
1314	Laguna Area F	39	B039-2S	.68	93		Late Tezoquipan
1316	Laguna Area F	55	B055-1S	1.82	205	Early Tezoquipan	Early Tezoquipan
1319	Laguna Area F	39	B039-2S	.51	72		Late Tezoquipan
1320	Laguna Area F	39	B039-2S	.09	11		Late Tezoquipan
1322	Laguna Area F	55	B055-1S	.97	108	Early Tezoquipan	Early Tezoquipan
1323	Laguna Area F	56	B056-2S	.09	2		Early Tezoquipan
1324	Laguna Area F	42	B042-2S	.60	72		Early Tezoquipan
1325	Laguna Area F	43	B043-3S	.15	27		Early Tezoquipan
1329	Laguna Area F	45	B045-2S	.70	80		Early Tezoquipan
1331	Laguna Area F	45	B045-2S	.70	113		Early Tezoquipan
1333	Laguna Area F	42	B042-2S	.50	71		Early Tezoquipan
1334	Laguna Area F	42	B042-2S	.57	83		Early Tezoquipan
1337	Laguna Area F	42	B042-2S	.31	41		Early Tezoquipan
1341	Laguna Area F	46	B046-3S	.09	7	Early Tezoquipan	Early Tezoquipan
1342	Laguna Area F	43	B043-3S	.05	19		Early Tezoquipan
1344	Laguna Area F	46	B046-3S	.22	12	Early Tezoquipan	Early Tezoquipan
1350	Laguna Area F	56	B056-2S	.04	2		Early Tezoquipan
1364	Laguna Area F	50	B050-3S	2.96	313	Early Tezoquipan	Early Tezoquipan
1369	Laguna Area F	50	B050-3S	2.09	259	Early Tezoquipan	Early Tezoquipan
1374	Laguna Area F	53	B053-2S	.35	72		Early Tezoquipan
1375	Laguna Area F	53	B053-2S	.23	44		Early Tezoquipan

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Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
1376	Laguna Area F	50	B050-3S	.23	35	Early Tezoquipan	Early Tezoquipan
1377	Laguna Area F	50	B050-3S	1.59	183	Early Tezoquipan	Early Tezoquipan
1378	Laguna Area F	53	B053-2S	.05	9		Early Tezoquipan
1379	Laguna Area F	50	B050-3S	1.88	103	Early Tezoquipan	Early Tezoquipan
1382	Laguna Area F	50	B050-3S	.71	68	Early Tezoquipan	Early Tezoquipan
1383	Laguna Area F	43	B043-3S	.18	24		Early Tezoquipan
1385	Laguna Area F	42	B042-2S	1.61	217		Early Tezoquipan
1386	Laguna Area F	42	B042-2S	.45	73		Early Tezoquipan
1389	Laguna Area F	53	B053-2S	1.71	299		Early Tezoquipan
1390	Laguna Area F	53	B053-2S	.12	27		Early Tezoquipan
1391	Laguna Area F	55	B055-1S	5.59	409	Early Tezoquipan	Early Tezoquipan
1392	Laguna Area F	55	B055-1S	5.64	701	Early Tezoquipan	Early Tezoquipan
1393	Laguna Area F	39	B039-2S	.43	78		Late Tezoquipan
1394	Laguna Area F	55	B055-1S	1.54	121	Early Tezoquipan	Early Tezoquipan
1395	Laguna Area F	46	B046-3S	1.36	77	Early Tezoquipan	Early Tezoquipan
1398	Laguna Area F	46	B046-3S	2.96	162	Early Tezoquipan	Early Tezoquipan
1399	Laguna Area F	57	B057-3S	.09	4		Early Tezoquipan
1405	Laguna Area B	61	B061-2S	1.28	185	Late Tezoquipan	Late Tezoquipan
1406	Laguna Area B	61	B061-2S	.31	57	Late Tezoquipan	Late Tezoquipan
1408	Laguna Area B	61	B061-2S	.12	16	Late Tezoquipan	Late Tezoquipan
1409	Laguna Area B	61	B061-2S	.01	5	Late Tezoquipan	Late Tezoquipan
1410	Laguna Area B	61	B061-2S	.06	9	Late Tezoquipan	Late Tezoquipan
1411	Laguna Area B	61	B061-2S	.42	48	Late Tezoquipan	Late Tezoquipan
1412	Laguna Area B	61	B061-2S	.58	59	Late Tezoquipan	Late Tezoquipan
1413	Laguna Area B	61	B061-2S	.20	35	Late Tezoquipan	Late Tezoquipan
1414	Laguna Area B	61	B061-2S	.21	46	Late Tezoquipan	Late Tezoquipan
1420	Laguna Area F	46	B046-3S	3.44	152	Early Tezoquipan	Early Tezoquipan
1421	Laguna Area F	57	B057-3S	.39	22		Early Tezoquipan
1422	Laguna Area F	46	B046-3S	.38	27	Early Tezoquipan	Early Tezoquipan
1423	Laguna Area F	57	B057-3S	.14	18		Early Tezoquipan
1424	Laguna Area F	57	B057-3S		0		Early Tezoquipan
1425	Laguna Area F			.08	15		
1426	Laguna Area F			.00	1		
1427	Laguna Area F	56	B056-2S	.12	6		Early Tezoquipan
1428	Laguna Area F	46	B046-3S	.74	127	Early Tezoquipan	Early Tezoquipan
1431	Laguna Area F	39	B039-2S	.54	111		Late Tezoquipan
1437	Laguna Area F	50	B050-3S	.20	33	Early Tezoquipan	Early Tezoquipan
1438	Laguna Area F	50	B050-3S	.00	1	Early Tezoquipan	Early Tezoquipan
1440	Laguna Area F	52	B052-1S	1.30	51		Early Tezoquipan
1444	Laguna Area F	46	B046-3S	.51	47	Early Tezoquipan	Early Tezoquipan
1445	Laguna Area F	46	B046-3S	1.02	104	Early Tezoquipan	Early Tezoquipan
1446	Laguna Area F	46	B046-3S	1.24	92	Early Tezoquipan	Early Tezoquipan
1447	Laguna Area F	46	B046-3S	1.05	78	Early Tezoquipan	Early Tezoquipan
1448	Laguna Area F	46	B046-3S	.42	62	Early Tezoquipan	Early Tezoquipan
1449	Laguna Area F	46	B046-3S	.22	34	Early Tezoquipan	Early Tezoquipan
1454	Laguna Area F	43	B043-3S	.36	32		Early Tezoquipan

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Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
1458	Laguna Area F	50	B050-3S	.09	12	Early Tezoquipan	Early Tezoquipan
1469	Laguna Area F	81	B081	1.21	149		Late Tezoquipan
1470	Laguna Area F	81	B081	1.68	188		Late Tezoquipan
1471	Laguna Area F	81	B081	.10	12		Late Tezoquipan
1472	Laguna Area F	50	B050-3S	.09	13	Early Tezoquipan	Early Tezoquipan
1473	Laguna Area F	50	B050-3S	.42	51	Early Tezoquipan	Early Tezoquipan
1474	Laguna Area F	50	B050-3S	.13	12	Early Tezoquipan	Early Tezoquipan
1475	Laguna Area F	50	B050-3S	.07	12	Early Tezoquipan	Early Tezoquipan
1476	Laguna Area F	50	B050-3S	.17	14	Early Tezoquipan	Early Tezoquipan
1477	Laguna Area F	50	B050-3S	.06	9	Early Tezoquipan	Early Tezoquipan
1478	Laguna Area F	50	B050-3S	.10	12	Early Tezoquipan	Early Tezoquipan
1480	Laguna Area F	81	B081	.01	3		Late Tezoquipan
1482	Laguna Area F	52	B052-1S	.93	67		Early Tezoquipan
1484	Laguna Area F	50	B050-3S			Early Tezoquipan	Early Tezoquipan
1486	Laguna Area F	43	B043-3S	.79	118		Early Tezoquipan
1487	Laguna Area F	43	B043-3S	.50	138		Early Tezoquipan
1488	Laguna Area F	43	B043-3S	1.20	232		Early Tezoquipan
1489	Laguna Area B	61	B061-2S	.28	65	Late Tezoquipan	Late Tezoquipan
1490	Laguna Area B			3.40	458		
1491	Laguna Area B			4.40	494		
1492	Laguna Area F	55	B055-1S			Early Tezoquipan	Early Tezoquipan
1493	Laguna Area F	55	B055-1S			Early Tezoquipan	Early Tezoquipan
1494	Laguna Area F	55	B055-1S			Early Tezoquipan	Early Tezoquipan
1496	Laguna Area F	50	B050-3S			Early Tezoquipan	Early Tezoquipan
1498	Laguna Area F	55	B055-1S			Early Tezoquipan	Early Tezoquipan
1499	Laguna Area F	55	B055-1S			Early Tezoquipan	Early Tezoquipan
1502	Laguna Area F	55	B055-1S			Early Tezoquipan	Early Tezoquipan
1600	Laguna Area H			3.32	786		
1601	Laguna Area H						
1602	Laguna Area H						
1603	Laguna Area H			13.41	2824		
1604	Laguna Area H			7.39	1304		
1605	Laguna Area H			8.49	1206		
1606	Laguna Area H						
1607	Laguna Area H			13.19	1778		
1608	Laguna Area H			1.1	181		
1609	Laguna Area H	100		7.41	1234		
1610	Laguna Area H			.58	91		
1611	Laguna Area H	100		.64	121		
1612	Laguna Area H			7.59	753		
1613	Laguna Area H	101	A101-2S	1.57	190		Early Tezoquipan
1614	Laguna Area H			.96	70		
1615	Laguna Area H			2.14	344		
1616	Laguna Area H	Lag H		2.36	336		
1617	Laguna Area H	Lag H		3.48	428		
1618	Laguna Area H	102	A102-2S	1.74	65	Early Tezoquipan	Early Tezoquipan

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Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
1619	Laguna Area H	102	A102-2S	.41	20	Early Tezoquipan	Early Tezoquipan
1620	Laguna Area H			.91	106		
1621	Laguna Area H			.59	57		
1622	Laguna Area H			.3	29		
1623	Laguna Area H			2.49	433		
1624	Laguna Area H			6.78	1333		
1625	Laguna Area H			1.35	59		
1626	Laguna Area H			6.3	1084		
1627	Laguna Area H			1.96	262		
1628	Laguna Area H			7.45	876		
1629	Laguna Area H			3.47	410		
1630	Laguna Area H	103	A103-1S	.57	23		Laguna second occupation
1631	Laguna Area H	Lag H	Lag-H3	4.82	697	Tenexac	Tenexac
1632	Laguna Area H			1.5	204		
1633	Laguna Area H	102	A102-2S	1.75	91	Early Tezoquipan	Early Tezoquipan
1634	Laguna Area H			2.85	386		
1635	Laguna Area H			.86	60		
1636	Laguna Area H			4.89	376		
1637	Laguna Area H			.8	52		
1638	Laguna Area H	104	A104-2S	3.39	257		Laguna second occupation
1639	Laguna Area H			2.75	402		
1640	Laguna Area H			11.95	934		
1641	Laguna Area H	100		4.72	699		
1642	Laguna Area H			6.26	1013		
1643	Laguna Area H	105	A105-1S	6.51	287	Early Tezoquipan	Early Tezoquipan
1644	Laguna Area H			7.04	496		
1645	Laguna Area H			9.64	591		
1646	Laguna Area H			15.93	943		
1647	Laguna Area H			1.73	232		
1648	Laguna Area H			2.03	275		
1649	Laguna Area H			.27	27		
1650	Laguna Area H			4.12	419		
1651	Laguna Area H			.2	28		
1652	Laguna Area H			.51	26		
1653	Laguna Area H						
1654	Laguna Area H			.49	53		
1655	Laguna Area H			3.72	398		
1656	Laguna Area H	Lag H		1.65	206		
1657	Laguna Area H	106		2.05	147		
1658	Laguna Area H			4.66	287		
1659	Laguna Area H			7.94	676		
1660	Laguna Area H			6.81	1062		
1661	Laguna Area H			.38	37		
1662	Laguna Area H	102	A102-2S	2.88	127	Early Tezoquipan	Early Tezoquipan
1666	Laguna Area D	Lag D		.67	80		
1667	Laguna Area D						

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Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
1668	Laguna Area D						
1669	Laguna Area D			4.57	421		
1670	Laguna Area D	Lag D		2.9	215		
1671	Laguna Area D			8.03	462		
1672	Laguna Area D			1.05	76		
1673	Laguna Area D			1.38	139		
1674	Laguna Area D			1.66	117		
1675	Laguna Area D			4.34	382		
1676	Laguna Area D	Lag D	Lag-D2	11.66	1082	Tenexac	Tenexac
1677	Laguna Area D	Lag D	Lag-D3	15.06	1807		Tenexac
1678	Laguna Area D	Lag D	Lag-D1	32.32	3187	Tenexac	Tenexac
1679	Laguna Area D			10.32	1260		
1680	Laguna Area D			2.84	328		
1681	Laguna Area D	Lag D		1.55	147		
1682	Laguna Area D	107	A107-1S	2.66	195		Tezoquipan
1683	Laguna Area D	108	A108-2S	.16	18		Laguna second occupation
1684	Laguna Area D	Lag D	Lag-D1	13.93	1002	Tenexac	Tenexac
1685	Laguna Area D	Lag D	Lag-D1	2.84	224	Tenexac	Tenexac
1686	Laguna Area D			.99	63		
1687	Laguna Area D			1.63	187		
1688	Laguna Area D	Lag D		3.75	300		
1689	Laguna Area D			1.41	67		
1690	Laguna Area D	Lag D	Lag-D2	16.56	1405	Tenexac	Tenexac
1691	Laguna Area D	Lag D	Lag-D2			Tenexac	Tenexac
1692	Laguna Area D	107	A107-1S				Tezoquipan
1693	Laguna Area D	109	A109-2S			Tenexac	Tenexac
1694	Laguna Area D			1.08	59		
1695	Laguna Area D			.44	22		
1696	Laguna Area D	109	A109-2S	11.3	787	Tenexac	Tenexac
1697	Laguna Area D	Lag D		9.43	1011		
1698	Laguna Area D	110	A110-2S	4.89	363	Tenexac	Tenexac
1699	Laguna Area D	Lag D	Lag-D2	15.32	1365	Tenexac	Tenexac
1700	Laguna Area D	110	A110-2S	3.32	249	Tenexac	Tenexac
1701	Laguna Area D	110	A110-1P				Tenexac
1702	Laguna Area D	111	A111-2S	.24	34		
1703	Laguna Area D	112	A112-2S	5.9	387	Early Tezoquipan	Early Tezoquipan
1704	Laguna Area D						
1705	Laguna Area D			.58	36		
1706	Laguna Area D			1.24	97		
1707	Laguna Area D	113	A113-1S	1.32	62		Tezoquipan
1708	Laguna Area D						
1709	Laguna Area D	110	A110-1P	.18	18		Tenexac
1710	Laguna Area D			2.45	142		
1711	Laguna Area D			2.85	318		
1712	Laguna Area D	114	A114-1S	1.14	58		Laguna second occupation
1713	Laguna Area D			4.49	446		

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Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
1714	Laguna Area D			.47	54		
1715	Laguna Area D			.1	18		
1716	Laguna Area D	115	A115-3B	.11	17		Laguna second occupation
1717	Laguna Area D	116	A116-3B	.13	8		
1718	Laguna Area D			.22	22		
1719	Laguna Area D			1.8	103		
1720	Laguna Area D			1.35	123		
1721	Laguna Area D			1.87	134		
1722	Laguna Area D	115	A115-3B	.45	40		Laguna second occupation
1768	Laguna Area F	120	C120	7.515	382	Late Tezoquipan	Late Tezoquipan
1771	Laguna Area F	120	C120	6.435	325	Late Tezoquipan	Late Tezoquipan
1773	Laguna Area F	120	C120	1	58	Late Tezoquipan	Late Tezoquipan
1790	Laguna Area F	123	C123	6.125	424	Early Tezoquipan	Early Tezoquipan
1791	Laguna Area F	123	C123	1.28	92	Early Tezoquipan	Early Tezoquipan
1793	Laguna Area F	121	C121	5.31	253	Late Tezoquipan	Late Tezoquipan
1794	Laguna Area F	121	C121	9.725	307	Late Tezoquipan	Late Tezoquipan
1842	Laguna Area F	132	C132	6.4	378	Late Tezoquipan	Late Tezoquipan
1843	Laguna Area F	132	C132	3.65	240	Late Tezoquipan	Late Tezoquipan
1853	Laguna Area F	133	C133	2.8	47	Unclassified	Unclassified
1854	Laguna Area F	133	C133	1.3	87	Unclassified	Unclassified
1855	Laguna Area F	133	C133	.445	45	Unclassified	Unclassified
1856	Laguna Area F	133	C133	5.145	391	Unclassified	Unclassified
1857	Laguna Area F	133	C133	14.16	497	Unclassified	Unclassified
1862	Laguna Area I	137	C137	12.345	592	Laguna–Texoloc	Laguna–Texoloc
1863	Laguna Area I	137	C137	3.86	150	Laguna–Texoloc	Laguna–Texoloc
1867	Laguna Area I	140	C140	5.115	200	Early Tezoquipan	Early Tezoquipan
1868	Laguna Area I	141	C141	8.71	462	Laguna–Texoloc	Laguna–Texoloc
1869	Laguna Area I	141	C141	9.35	404	Laguna–Texoloc	Laguna–Texoloc
1871	Laguna Area I	Lag I	Lag-I1	18.87	955	Early Tezoquipan	Early Tezoquipan
1951	Laguna Area H	Lag H	Lag-H2	5.58	299	Tenexac	Tenexac
1982	Laguna Area H	144	C144	6.5	493		Laguna second occupation
2022	Laguna Area H	Lag H	Lag-H2	.555	26	Tenexac	Tenexac
2026	Laguna Area H	Lag H	Lag-H2	1.87	97	Tenexac	Tenexac
2027	Laguna Area H	Lag H	Lag-H2	.995	52	Tenexac	Tenexac
2028	Laguna Area H	Lag H	Lag-H2	1.455	57	Tenexac	Tenexac
2031	Laguna Area H	Lag H	Lag-H2	1.51	130	Tenexac	Tenexac
2033	Laguna Area H	Lag H	Lag-H2	7.625	360	Tenexac	Tenexac
2034	Laguna Area H	Lag H	Lag-H2	10.8	630	Tenexac	Tenexac
2035	Laguna Area H	Lag H	Lag-H2	9.95	690	Tenexac	Tenexac
2039	Laguna Area H	Lag H	Lag-H2	7.55	603	Tenexac	Tenexac
2042	Laguna Area H	Lag H	Lag-H2	4.21	295	Tenexac	Tenexac
2043	Laguna Area H	Lag H	Lag-H2	2.875	223	Tenexac	Tenexac
2066	Laguna Area H	143	C143	6.005	207	Laguna–Texoloc	Laguna–Texoloc
2067	Laguna Area H	143	C143	.515	35	Laguna–Texoloc	Laguna–Texoloc
2073	Laguna Area H	143	C143	.035	3	Laguna–Texoloc	Laguna–Texoloc
2076	Laguna Area H	143	C143			Laguna–Texoloc	Laguna–Texoloc

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Lot	Site	Feature	Context	Sherd Weight (kg)	Number of Sherds	Phase (Chronological Sample)	Phase (Expanded Sample)
2085	Laguna Area H	148	C148	3.825	258	Early Tezoquipan	Early Tezoquipan
2088	Laguna Area H	148	C148	6.765	377	Early Tezoquipan	Early Tezoquipan
2089	Laguna Area H	H1-SUB	Lag-H1			Late Tezoquipan	Late Tezoquipan
2103	Laguna Area H	143	C143	2.235	79	Laguna–Texoloc	Laguna–Texoloc

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