

Architectural Patterns at Three Aztec-Period Sites in Morelos, Mexico

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Excavations conducted by the Postclassic Morelos Archaeological Project in western Morelos, Mexico, have recovered data on stone architecture during the Late Postclassic, or Aztec, period at three sites: Cuexcomate (a town settlement); Capilco (a village); and Site 3 (a farmstead). Whereas the village site exhibits only one class of structures (ground-level houses), the town has a diversity of architectural classes including ground-level houses, platform houses, temple platforms, circular structures, and rock piles. These categories are described and the nature of inter-class and intra-class architectural variability is explored. Our results shed light on the nature of the Aztec peasantry, suggesting a high level of social complexity in rural provincial areas.

Introduction

The study of the rural or peasant sector of ancient civilizations has, in large measure, been neglected by archaeologists. Excavations have focused on the monumental elite architecture of cities and ceremonial centers, ignoring the critical role played by hinterland communities. Comparative work by anthropologists and historians attests to a wide variation in peasant socioeconomic organization. Rural household craft production may be extensive or non-existent, elites may live in small villages or large cities, and there may be considerable variability in farming practices both within and between regions. These patterns have important implications for the organization

of agrarian states, and we cannot assume that all rural populations were simple farmers of homogeneous nature (e.g., Duby 1968; C. Smith 1976; Braudel 1982). The expansion of survey archaeology in the past two decades provides data on settlement patterns and demography in rural areas, but only excavation can furnish the detailed information necessary to reconstruct socioeconomic patterns in the countryside. Recently some Mesoamericanists have begun excavations at rural sites (e.g., Sanders, Parsons, and Santley 1979: 334–355; Evans 1988; Webster and Gonlin 1988), a trend that could bring about major changes in our models of Prehispanic society.

The excavation of rural sites is particularly important

for the Late Postclassic, or Aztec, period in central Mexico. Archaeological surveys indicate a dense rural population at this time (Sanders, Parsons, and Santley 1979: 153–181), and intensive surface collections reveal rural production of obsidian and probably other utilitarian craft items (Mason 1980; Brumfiel 1985, 1987; Spence 1985). Most ethnohistorical documents say little about rural conditions, but some do indicate the presence of noble estates and craft specialists outside of urban centers (e.g., Carrasco 1972, 1976; Brumfiel 1987; Smith *in press*). Excavation is necessary to confirm and expand on these suggestions of complexity amongst the Aztec peasantry, however.

One of the best archaeological indicators of social complexity is architecture. Variation in the size and quality of houses can indicate differences in wealth and status, and variation in the numbers and types of non-residential structures points to functional complexity at a settlement (McGuire 1983; Webster and Abrams 1983; Abrams 1987). Susan Evans' work at rural Aztec sites in the Teotihuacán Valley reveals both of these axes of architectural variability, confirming the existence of socially complex rural populations in the core area of the Aztec realm (Evans 1985, 1988, *n.d.*). This article presents parallel findings from another part of central Mexico. Western Morelos was a province of the Aztec empire south of the Basin of Mexico, and the architectural data described here indicate that social complexity characterized rural settings in this part of the Aztec empire as well.

In the course of an excavation-based study of Late Postclassic period rural society, the Postclassic Morelos Archaeological Project has recovered data on patterns of stone architecture at three sites in western Morelos. These data are important if only because of a general lack of information on Late Postclassic architecture in central Mexico. Apart from detailed studies of pyramids and other ceremonial structures (e.g., Marquina 1964; Matos 1988), our only knowledge of Aztec-period architecture comes from excavations in two areas: the Teotihuacán Valley (Evans 1988, *n.d.*; Charlton 1972, *n.d.*) and the Tehuacán Valley (Sisson 1973, 1974), plus some brief notes contained in survey reports from the Basin of Mexico (e.g., Blanton 1972; Parsons *et al.* 1982). In addition to their comparative value, however, the Morelos architectural data exhibit patterns of inter-site and intra-site variability that shed light on social and economic patterns in a provincial area during the Aztec period. This report describes for the first time the architecture revealed by the Postclassic Morelos Archaeological Project and explores its variability in a preliminary fashion. Artifactual studies and chronological work are still in progress, and final inter-

pretations of the architecture must await their completion; nevertheless, the stone structures described here are interesting in their own right and provide important interpretations irrespective of the ultimate results of the artifactual studies.

Background: The Postclassic Morelos Archaeological Project

Cultural-Historical Framework

The area investigated by the Postclassic Morelos Archaeological Project lies in the vicinity of the large Prehispanic urban center of Xochicalco, some 15 km sw of the city of Cuernavaca, Morelos (FIG. 1). Xochicalco was a large, complex, urban settlement organized around a hilltop ceremonial zone with monumental architecture. This site dominated western Morelos during the Epiclassic period, A.C. 650–900, after which there was a major regional population reduction and the abandonment of the hilltop ceremonial zone (Hirth 1984; Hirth and Cyphers 1988). A few isolated areas on Xochicalco's lower terraces continued to be occupied during the subsequent Early and Middle Postclassic periods (Smith 1983), but regional population levels did not increase again until the beginning of the Late Postclassic period (Cuauhnahuac phase, A.C. 1350–1520+). At this time, the area of the Cuernavaca formation north of Xochicalco (a large, deeply dissected alluvial fan; FIG. 1) witnessed a dramatic increase in population as formerly empty lands were settled apparently for the first time (Sterpone 1988). The three excavated sites—Capilco, Cuexcomate, and Site 3—are located east of Xochicalco at the very southern edge of the Cuernavaca formation (FIG. 1).

The Cuauhnahuac phase has been divided into Early (A.C. 1350–1440) and Late (1440–1520+) phases on the basis of stratigraphy and ceramic seriation (Smith 1983, 1987a). The dates for these phases can only be approximate until planned radiocarbon and obsidian hydration dating is completed. Differences between the ceramics of these phases are subtle, and not all excavated contexts can be accurately assigned to phases at this point. Continuing work with the ceramic collections and statistical studies of the ceramic data will help differentiate and clarify the ceramic chronology. All excavated architectural contexts date to the Early and/or Late Cuauhnahuac phases; the only pre-Cuauhnahuac context is one refuse deposit at Capilco dating to the Temazcalli phase (A.C. 1200–1350).

Ethnohistorical sources provide information on territorial organization and political changes within the time span of the Cuauhnahuac phase. Western Morelos was organized into a number of small city-states (Gerhard

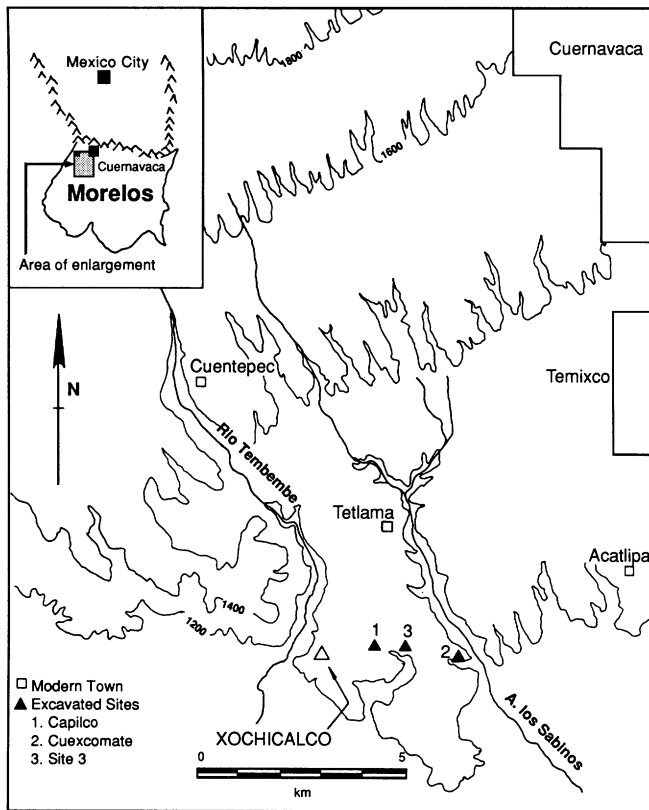


Figure 1. Locations of sites excavated by the Postclassic Morelos Archaeological Project.

1970), although it is not certain which of these controlled the sites under study. Smith's territorial reconstruction would place them in either the Cohuintepec or the Xochitepec polity, although Acatlipac was the city-state capital closest to the sites (Smith 1983: 127, in press). Two historically-documented processes may have had significant effects upon rural society in this area during the general Cuauhnahuac phase. At some point, probably around A.C. 1420–1440, these city-states were incorporated into the Cuauhnahuac state, a powerful polity centered in a large urban center in what is now the city of Cuernavaca (Smith 1986, 1983: 96–110). Cuauhnahuac itself was then conquered and incorporated into the Aztec empire in 1438 (Smith 1987a). An evaluation of the possible effects of these conquests on rural society must await the chronological refinement discussed above; in fact, the need for correlation of archaeological and ethnohistorical data provides a major impetus for the continuing chronological work.

Goals of the Project

The primary goal of the Postclassic Morelos Archaeological Project is to investigate the nature of rural society

in a provincial area of the Aztec empire. Most ethnohistorical sources in central Mexico are biased in favor of urban settings at the expense of rural areas, and the Basin of Mexico at the expense of provincial areas. The few available documentary descriptions of rural society outside of the basin (e.g., Carrasco 1976; Brumfiel 1987; Smith in press) leave important questions unanswered. Archaeological research, with its diachronic perspective, can contribute significantly to the study of Aztec social and economic organization, providing data not available in the historical record (Smith 1987b). By focusing on the levels of the household and the community, the project is generating important data on rural society in Late Postclassic western Morelos. Among the specific questions under investigation are the following: the extent of social stratification and inequality in rural areas; the nature and organization of rural craft production; the agricultural base for Late Postclassic populations in this area; and the impact of Mexico (Aztec) conquest on rural provincial areas.

In spite of the abundance of ethnohistorical documentation for Late Postclassic central Mexico, only passing reference is made to that data in this paper. We do not mean to suggest that documentary data are not useful or relevant; we believe, however, that some previous studies of Late Postclassic archaeology may have been hampered by too heavy a reliance upon ethnohistory in the framing of research questions and the interpretation of archaeological data. Following the suggestions of Smith (1987a), we are carrying out an *archaeological* analysis of archaeological remains. Only after we have explored the nature of our data in its own terms will we be able to make appropriate use of ethnohistory to construct a fuller, balanced interpretation of Late Postclassic sociocultural organization in Morelos.

Excavated Sites

Two of the sites excavated by the Postclassic Morelos Archaeological Project (Capilco and Cuexcomate) were located and studied initially by Kenneth G. Hirth's Xochicalco Mapping Project in 1978 (Hirth 1983, 1984). Hirth extended his intensive surface investigation of Xochicalco several kilometers beyond the edges of that site in a search for Classic and Epiclassic settlements associated with the urban center. While he located a few small Epiclassic sites, most of the settlements to the east and north of Xochicalco date to the Cuauhnahuac phase. Hirth made localized collections of surface artifacts, mapped structures at Capilco (identified as Terrace 117 in the Xochicalco Mapping Project files at the University of Kentucky), and made sketch maps of Cuexcomate and several other Cuauhnahuac sites.

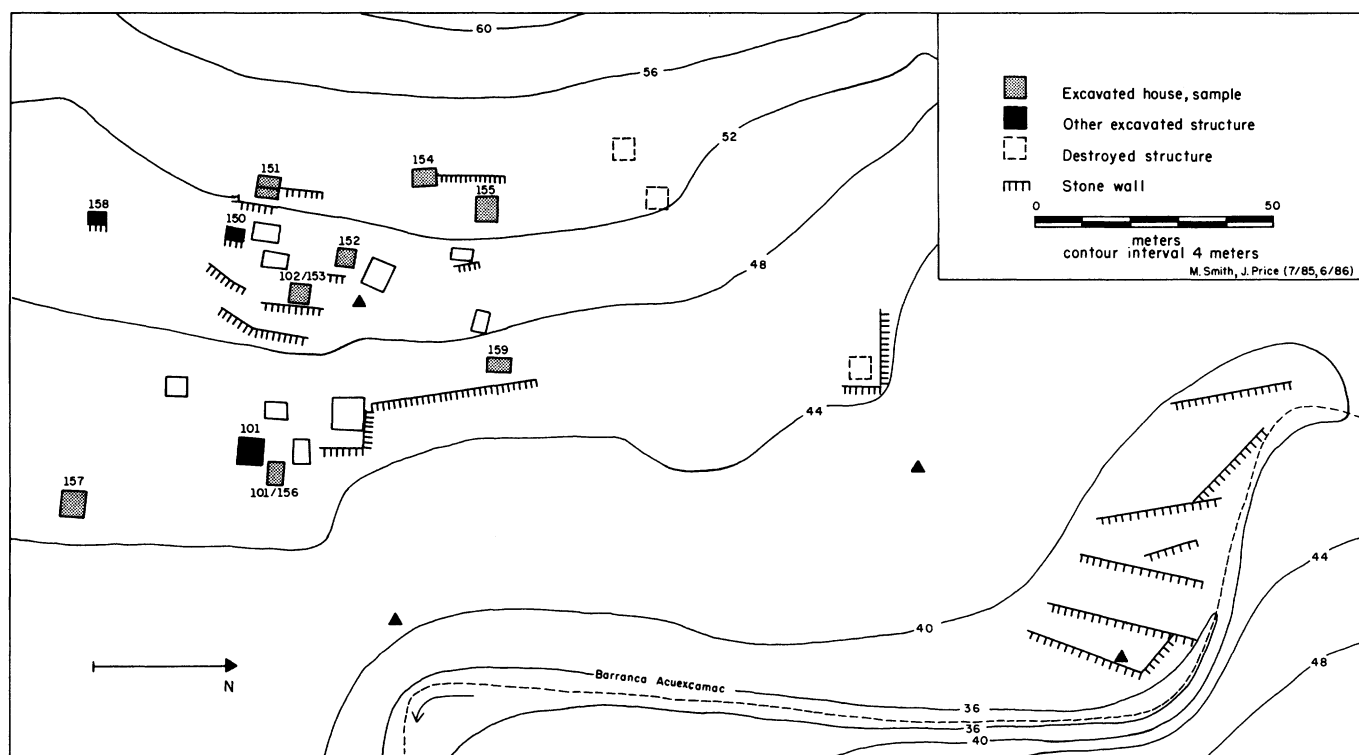


Figure 2. Plan of Capilco, Morelos, a village settlement. Empty rectangles represent unexcavated houses.

Smith studied these surface collections in 1981 and noted artifactual variability among structures that suggested inter-household differences in wealth, access to exotic goods, and the intensity of textile production. Smith and O'Mack visited Capilco and several other Cuauhnahuac phase sites in 1984 and found that much of the settlement area had not yet been disturbed by modern agriculture. Most house locations were clear from surface indications (low mounds and associated artifact scatters), and many wall-lines were visible. On the basis of this visit and the study of surface artifacts, funding for the Postclassic Morelos Archaeological Project was obtained from a number of sources (see acknowledgments). Capilco and most of Cuexcomate were mapped in summer, 1985, by Smith and Price, and excavation was carried out from January through June, 1986, by the authors.

Capilco is a small settlement of some 21 houses clustered at the base of the eastern side of La Bodega hill (FIG. 2). A number of stone terrace walls are associated with the houses; apparently these were built to reduce soil erosion in and around houselots. The configuration of surface remains and the results of excavation indicate that slopewash has been a significant process in the post-occupational modification of the archaeological deposits at Capilco. Just below the residential zone (south and SE)

are level fields that have been cultivated in modern times, although apparently not since Hirth's work in 1978. A lack of artifactual debris except along the western edges of these fields indicates that the inhabited zone did not extend into this area beyond the structures shown in the site map (FIG. 2).

An entrenched seasonal stream, the Barranca Acuexcomac, flows south just beyond the northern and eastern edges of the residential zone. A series of seven check-dams or cross-channel terraces (Donkin 1979: 32) are located in a flat alluvial area along the stream north of the settlement. Indirect but compelling evidence indicates that these agricultural features are associated with the Prehispanic occupation of Capilco (Price 1988).

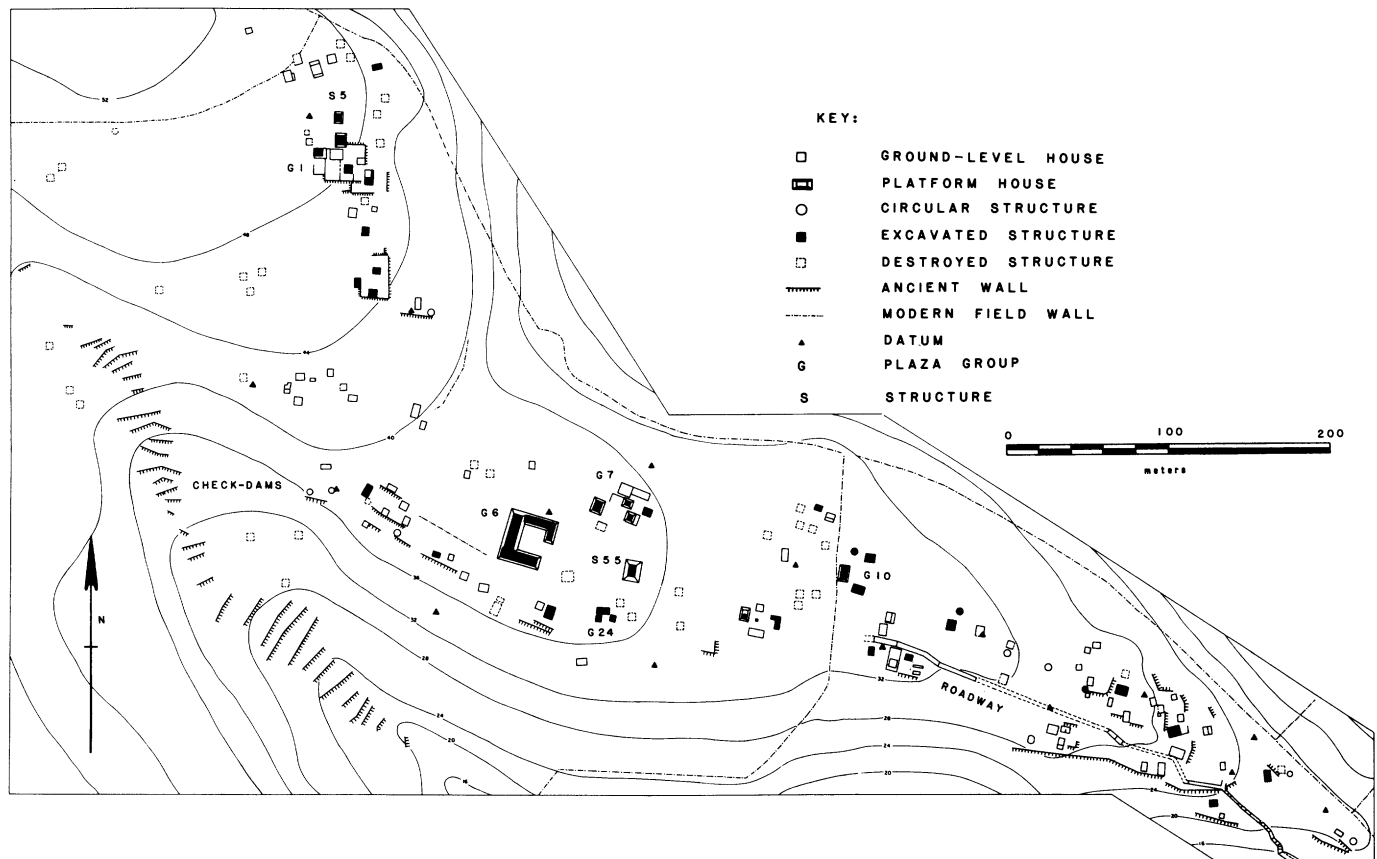
Cuexcomate is a larger and architecturally more complex site located 2 km east of Capilco. A total of 175 structures are recorded in an area of 14.2 ha, and all but three have clear traces on the surface. Settlement is distributed along a NW-SE sloping ridgetop over a distance of approximately 1 km (FIG. 3). In comparison with Capilco, Cuexcomate exhibits considerable architectural variability: there are several types of residences at the site; there are three categories of non-residential structures not found at Capilco; and the site has a "roadway" not found at other contemporaneous settlements. Table 1 provides numerical data

Table 1. Comparison of structures, features, and excavations at three excavated sites.

	<i>Cuexcomate</i>	<i>Capilco</i>	<i>Site 3</i>
Site area	14.2 ha	1.3 ha	350 sq m
Number of houses	150	21	2
Ground-level houses	135 (22)*	21 (9)	2 (1)
Platform houses	12 (10)	0	0
Special houses	3 (3)	0	0
House groups			
Number of patio groups	25	2	1
Number of informal groups	10	0	0
Houses in patio groups	97 [65%]	8 [38%]	2
Houses in informal groups	20 [13%]	0	0
Houses not in groups	33 [22%]	13 [62%]	0
Non-residential structures			
Temple platforms	2 (2)	0	0
Circular structures	12 (3)	0	1
Rock piles	11 (6)	0	1 (1)
Agricultural features			
Check-dams	37 (3)	7 (2)	0
Hill slope terraces	yes (4)	no	yes
Total extent of excavation			
Area excavated	677 sq m	382 sq m	12 sq m
Volume excavated	351 cu m	128 cu m	6 cu m

*Figures in parentheses indicate the number of excavated structures/features.

Figure 3. Plan of Cuexcomate, Morelos, a town settlement.



on the kinds of structures present at the excavated sites. Two-thirds of the houses at Cuexcomate are part of patio groups consisting of two or more houses arranged around a formal rectangular patio area, often with a circular structure or a rock pile. Portions of Cuexcomate have been cultivated in recent years with ox-drawn wooden plows. The distribution of destroyed houses in Figure 3 is an approximate guide to the extent of modern agricultural disturbance at the site.

A low-lying drainage west of the inhabited zone at Cuexcomate is crossed by a series of 37 check-dams that together form planting areas totalling over 1 ha. The slopes north and south of the eastern half of the site are covered with relict stone terraces; in one section 24 terraces were mapped that extend down from the residential zone into the barranca. As at Capilco, there is strong indirect evidence to associate these agricultural features with the Cuauhnahuac-phase occupation of the site (Price 1988). Below the stone terraces, the slope drops off steeply. The Arroyo de los Sabinos runs along the NE and eastern side of Cuexcomate with a permanent stream some 50 m below the elevation of the central part of the site. Small irrigated plots along the stream are cultivated today, but we have little evidence bearing upon the potential Prehispanic use of this land. There is extensive ethnohistorical documentation of irrigation in Late Postclassic Morelos (Maldonado 1984; Smith *in press*), and Cuauhnahuac-phase irrigation along the Arroyo de los Sabinos would not be surprising.

Site 3 is a cluster of four structures in the midst of a sloping area of relict stone terraces between Capilco and Cuexcomate. It consists of two houses, a circular structure, and a rock pile arranged around a possible formal plaza area (FIG. 4). The site was discovered by project members in 1986 and received limited testing.

Field Methods

The high surface visibility of architectural remains was one of the primary factors prompting excavation of these sites. The architecture was mapped with a transit at a scale of 1:500 in 1985, and then surface vegetation was cleared from the sites at the beginning of the 1986 field season. The maps were rechecked, then used to design sampling strategies for Capilco and Cuexcomate. Three kinds of sampling were employed at these sites. First, random samples of houses were selected for test pitting to generate data on architectural and artifactual variability at the sites. Second, a number of houses were selected purposively for complete or extensive excavation to provide more detailed information on architecture and household activities and living conditions. Third, non-residential structures were

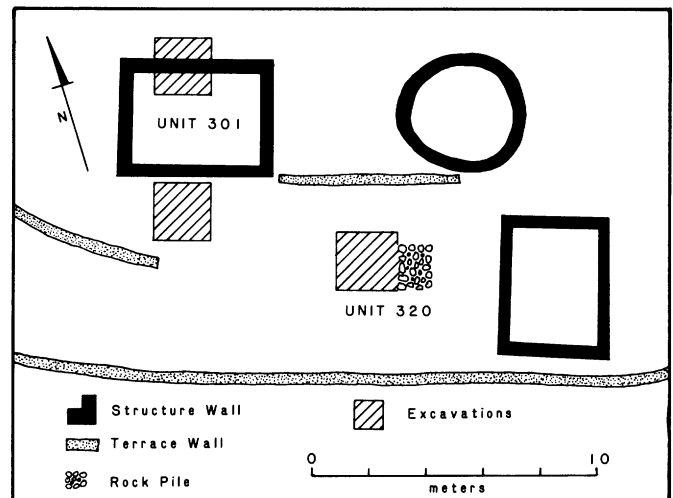


Figure 4. Plan of Site 3, Morelos, a farmstead.

selected purposively for both testing and extensive excavation.

The probability sampling program included 29 houses at Capilco and Cuexcomate. Eight of the 21 houses at Capilco were selected in a simple random sample, while 21 houses were selected in a complex stratified sampling design at Cuexcomate. The sampling design is described at length in the excavation report under preparation. Briefly, sampling strata were defined at Cuexcomate so as to independently sample: 1) different spatial zones at the site (north, central, and east); 2) houses in patio groups vs. isolated houses; and 3) three complex patio groups. With four exceptions, all houses selected in the probability sampling program were tested with two 2 m × 2 m excavations. One test pit was placed astride an exterior house wall in order to recover data on architecture (wall and floors) plus interior and exterior artifacts. The second test pit was placed outside of the structure to recover midden deposits; Eidt's (1984) field test for soil phosphate was employed with success to locate midden areas for the test pits. For the four platform houses in the probability sample at Cuexcomate, only the exterior test pits were dug. Prior extensive trenching and clearing of one platform house suggested that a single 2 m × 2 m pit would probably provide more architectural confusion than enlightenment, and that most or all portable artifacts recovered in such pits would be from fill contexts.

Houses for more extensive excavation were chosen on the basis of their degree of preservation, the results of the test pitting, and their location within the sites. At Capilco, two of the houses from the probability sample plus one other were excavated completely, and two other houses in the sample were excavated extensively. At Cuexcomate,

one house from the sample was excavated completely, 11 non-sample residences were tested or excavated extensively, and wall lines were cleared at several additional houses. In the third component of the sampling design, 12 non-residential structures were tested at Cuexcomate (apart from agricultural features). These were selected purposively on the basis of preservation and location. At Site 3, one house and a rock pile were tested. For all excavations, the total area cleared was 1071 sq m and excavated volumes totaled 486 cu m (TABLE 1).

In most cases, separate grids were established in alignment with individual structures. Excavation followed natural soil zones where possible. Most deposits were quite shallow with sterile hardpan (*tepetate*) lying 40–80 cm below ground surface. All soil was screened using $\frac{1}{4}$ " mesh, and pollen and flotation samples were taken from many contexts. In cases where structures were completely or extensively excavated, large exterior areas were also cleared in a search for activity areas and secondary refuse. No clear activity areas were encountered either inside or outside of buildings; this is probably due in large part to extensive post-occupational erosion at these sites. Architecture was documented with photographs and maps of nearly all excavated structures at a scale of 1:20; maps at 1:100 were also made of five patio groups. Measurements, orientations, and notes were then taken on all non-excavated structures having at least one wall visible at ground surface.

Architectural Patterns

Classification of Structures

The architectural classification employed by the project was devised prior to excavation, on the basis of inspection of surface remains and knowledge of modern and ancient rural structures. Functional interpretations of the categories are being developed from both formal analyses of the structures as presented here and statistical analyses of the associated artifactual remains. Our classification thus employs descriptive/morphological classes that are in the process of conversion to functional classes. Although some of the category names imply functional interpretations, the latter are still regarded as hypotheses for testing; the functional labels are for convenience only.

For each architectural class, a formal definition is presented first. This definition states the criteria used to assign individual structures to that category. Then the class members are described and discussed. Variability in the architecture is found at both the inter-class and intra-class levels. In other words, the existence of a range of structure classes is one kind of variability, while differences among

structures within individual classes comprise another sort of variability. Both kinds of variability have sociocultural implications that are discussed in the conclusions.

Ground-level Houses

Ground-level houses are defined as rectangular structures that were constructed at the level of the ground with stone wall foundations. Ground-level construction was initially inferred from the appearance of these buildings prior to excavation, and was later confirmed by excavation. The interpretation of these structures as residences is based upon three factors: 1) they are by far the most abundant class of structure at Cuahnahuac-phase sites, suggesting a residential function according to the "principle of abundance" as employed in Mayan archaeology (Ashmore 1981: 40–41); 2) they have dense deposits of associated domestic artifactual remains; and 3) their remains are very similar to the foundations of traditional houses in nearby modern villages.

Cuahnahuac-phase ground-level houses are small in size, with a mean living area (measured from the interiors of the foundation walls) of 16 sq m (TABLE 2). There is no significant difference between the two sites in house size, and examples are clustered close to the mean at both sites (the standard deviation of the combined sample is 7.9). Figures 5 and 6 show a typical ground-level house at each site. These houses exhibit the most common wall and floor construction techniques.

The double-row stone wall foundations of ground-level houses were apparently set in shallow excavated trenches. While no traces of these trenches have survived, the wall stones extend below the level of the Cuahnahuac-phase

Figure 5. Typical ground-level house, structure 20 (unit 101) at Capilco. This house has two stages of construction. The exterior stone pavement on the right is the floor of the earlier stage; it extends under the floor and wall of the later stage.





Figure 6. Typical ground-level house, structure 85 (unit 201) at Cuexcomate. This is one of the few excavations where we could identify a Postclassic ground surface with confidence.

ground surface in those few excavations where original ground surfaces were identified (FIG. 6 section). Walls generally exhibit a mixture of roughly dressed rectangular stones, crudely faced cobbles, and unmodified cobbles. The spaces between the two exterior rows of large stones are filled with small stones and sediment. In none of the ground-level houses are the foundations still standing to their full original height. The relatively small number of fallen wall stones around these structures indicates that the walls could not have been very high. In the case of structure 85 (unit 201), part of one wall had collapsed forward intact, and three rows of fallen stones were clearly visible during excavation. The original wall probably had five courses of stones rising to ca. 0.9 m in height.

We cannot be sure of the nature of the house walls

above the stone foundations, but adobe bricks are the most likely possibility. Modern adobe houses in the nearby village of Tetlama have double-row stone wall foundations similar to those excavated by the project (we carried out a small-scale ethnoarchaeological study of adobe house construction in Tetlama), and fragments of adobe were recovered adjacent to house walls in several excavations. No complete or large partial adobe bricks were recovered, however. The use of adobe bricks in Late Postclassic houses in the Tehuacán Valley of southern Puebla is reported by Sisson (1973: 29–30, 53–58; 1974: 33).

Some houses have walls with single-row stone foundations, usually mixed with some double-row walls. This type of wall is more common at Capilco than at Cuexcomate (TABLE 3). The single-row walls could not support

Table 2. Size of structures.

Site	Measurement unit	Mean	Minimum	Maximum	No. of cases
<i>Ground-level houses</i>					
Capilco	Interior area (sq m)	16.3	10.8	35.2	14
Cuexcomate	Interior area (sq m)	15.9	8.6	41.8	42
Site 3	Interior area (sq m)	12.7	11.9	13.4	2
<i>Platform houses, type A</i>					
Cuexcomate	Top platform area (sq m)	118.1	52.3	212.5	4
Cuexcomate	Height (m)	0.7	0.5	0.7	4
Cuexcomate	Platform volume (cu m)	111.0	42.2	160.8	4
<i>Platform houses, type B</i>					
Cuexcomate	Top platform area (sq m)	33.8	18.2	65.0	8
Cuexcomate	Height (m)	0.5	0.3	0.8	8
Cuexcomate	Platform volume (cu m)	23.7	6.9	43.3	8
<i>Temple platforms</i>					
Cuexcomate	Top platform area (sq m)	78.3	20.0	136.5	2
Cuexcomate	Height (m)	1.5	1.1	1.8	2
Cuexcomate	Platform volume (cu m)	172.8	27.5	318.0	2
<i>Circular structures</i>					
Cuexcomate	Exterior diameter (m)	4.1	3.0	4.9	12

Table 3. Construction attributes of ground-level houses

Construction attributes	Cuexcomate	Capilco	Site 3
Wall construction	(N = 72)*	(N = 17)	(N = 2)
Double-row	56	8	2
Single-row	3	1	0
Mixed	13	8	0
Floor construction	(N = 26)	(N = 12)	(N = 1)
Stone cobble	20	7	1
Earth/clay	6	4	0
Lime stucco	0	1	0
Construction stages	(N = 18)	(N = 8)	(N = 1)
1	16	4	1
2	2	3	0
3	0	1	0

*Figures in parentheses indicate the number of houses scored for each variable at each site. These include excavated houses plus others whose construction attributes could be observed without excavation.

adobe bricks. Analogy with modern construction techniques suggests that perishable materials such as cane or wattle were used, with the stones arranged along the exterior side at ground level.

The majority of excavated ground-level houses have floors of irregular, rounded stone cobbles. Structure 85 (FIG. 6) is unusual in that the stones cover only about 70% of the interior area. In two well-preserved houses at Capilco, thin layers of a distinctive light yellowish-brown, sandy sediment were lying on the floor stones. We believe that this sediment formed the original floor surface in most ground-level houses, and its rarity in the excavations may be attributed to post-abandonment erosion. Samples of this sediment will be analyzed to determine its composition and origin; it may be crushed tepetate hardpan. With

the exception of one structure at Capilco, houses without cobble floors had *no* discernible artificial surfaces. We infer that these floors were of packed earth, with their stratigraphic outlines obliterated by post-occupational soil processes. One ground-level house at Capilco had traces of a lime stucco floor. A number of mortar fragments were recovered at a consistent depth, but no intact expanses or floor preparation levels were encountered.

A number of ground-level houses show evidence of more than one construction phase (TABLE 3). In the two cases at Cuexcomate, the evidence consists only of superimposed floor levels (FIG. 6). On the other hand, several houses at Capilco show evidence of major renovations, including raised floors and both expanded and contracted living areas with new walls (FIG. 5). In the three major

construction variables discussed here—wall form, floors, and construction phases—ground-level houses at Capilco are less standardized than those of Cuexcomate. This variability in construction methods contrasts with the uniformity of house size at the two sites.

The small size of the ground-level houses at these sites differs strongly from Aztec houses in the Basin of Mexico. In rural settings in the Teotihuacán Valley, excavated houses are in the range of 70–150 sq m in area (Charlton 1972, n.d.; Evans 1988), and all mapped structures at the Cerro Gordo Site are larger than the mean interior area of the Morelos ground-level houses (Evans 1985). Most of the houses surveyed by Blanton (1972: 257–267) at the urban center of Ixtapaluca Viejo in the southern Basin of Mexico are far larger than the Morelos houses, as are most of the Postclassic houses excavated by Sisson (1973, 1974) in the Tehuacán Valley. Whereas the large, ground-level multiroom dwelling is the norm in the Basin of Mexico and Tehuacán, no houses of this type are found in Cuauhnahuac-phase sites in Morelos (although they were common at Xochicalco during its Epiclassic occupation [Hirth and Cyphers 1988: 119–132]).

Platform Houses

Platform houses are structures built on raised stone platforms and situated as part of patio groups. Platform structures in general appear as distinct mounds of rubble prior to clearing, and the stone platforms are revealed by excavation. The residential function of platform houses is inferred from: 1) their occurrence in patio groups, an arrangement often observed among the more common ground-level houses; 2) the presence of domestic artifacts behind the structures; and 3) the presence of rooms on top of the larger examples. Membership in a patio group is used to distinguish platform houses from temple platforms.

The 12 platform houses at Cuexcomate are divided into two types based upon size and location. Type A contains four interconnected platform houses that comprise patio group 6, while type B contains the eight other examples. Patio group 6 is one of the key architectural clusters at Cuexcomate (FIG. 7). The four platforms (units 204, 207, 263 and 264) are approximately 0.7 m high and have a combined top area of 472 sq m and a fill volume of 444 cu m. They include the three largest platform houses at the site. The largest structure (unit 204) was partially excavated, and surface architecture was cleared on the other three platforms. In addition, test pits were excavated adjacent to the platforms of units 263 and 264 (included in the probability sample), and a small excavation was conducted in the plaza area.

Clearing of surface debris exposed a series of rooms formed by double-row stone walls atop the platforms of patio group 6. Trenching and clearing of unit 204 revealed a complex history of construction employing dressed stone walls and red-painted lime stucco floors and wall coverings. There is evidence for at least four stages of construction: 1) initially, two small structures were built; 2) then the large primary platform (0.5 m high) covered these; 3) next a smaller platform 0.7 m high was built atop the central portion of the primary platform; and 4) finally a series of rooms was added north and south of the small platform. Ceramic phasing indicates that all four stages were constructed in the Early Cuauhnahuac phase. The vertical walls of the primary platform were originally covered with lime stucco, as were the surfaces of several internal walls. The primary platform had a floor of lime stucco, upon which the later structures were added; several of the rooms in unit 204 also had stucco floors. In two areas of units 204 and 264, stone cobble floors were uncovered during excavation.

We interpret patio group 6 to be the residence of a noble household. Preliminary analysis of secondary refuse from the exterior excavations reveals typical domestic debris, but with high percentages of such wealth markers as local and imported decorated bowls.¹ Aztec palaces in the Basin of Mexico are similar in layout to patio group 6. Their features include enclosed patios or courtyards with a single exit and a series of rooms opening onto the courtyard, although most ethnohistorically and archaeologically documented palaces are considerably larger overall than this group (Evans n.d. reviews evidence for Aztec palaces and their archaeological manifestation). A similar but larger U-shaped platform structure is present in the

1. Domestic artifact assemblages at these sites typically include the following categories. 1) Ceramics: cooking vessels (many jars and tortilla griddles, and a few basins), storage ware (many plain and a few painted jars), serving bowls (plain, local polychromes, Aztec imports), polished polychrome pitchers and cups, two forms of incense burner, cotton-spinning artifacts (spindle whorls and spinning bowls [see Smith and Hirth 1988]), Aztec salt vessels (Texcoco fabric-marked), figurines, and a number of rare categories. 2) Chipped stone: abundant prismatic blades of green, Pachuca source-area obsidian with smaller numbers of cores, flakes, modified blades (projectile points and other forms), unifaces and bifaces; and cores, flakes, and other artifacts of local low-grade chert. 3) Ground stone: manos, metates, mortars, pestles, polishing stones, mullers, bark-beaters, and other categories, most of local vesicular basalt. 4) Other materials: copper sewing needles and awls/chisels, jade beads and ornaments, pigment stones, and several additional rare categories.

Statistical analysis of a small sample of analyzed ceramics indicates differences between the artifacts of platform houses and ground-level houses; the former have significantly higher frequencies of decorated bowls, Aztec imports, incense burners, and polished pitchers and cups. Not all contexts are yet coded, however, and wealth-related artifact variation will be the focus of continuing analyses (see Smith 1987c).

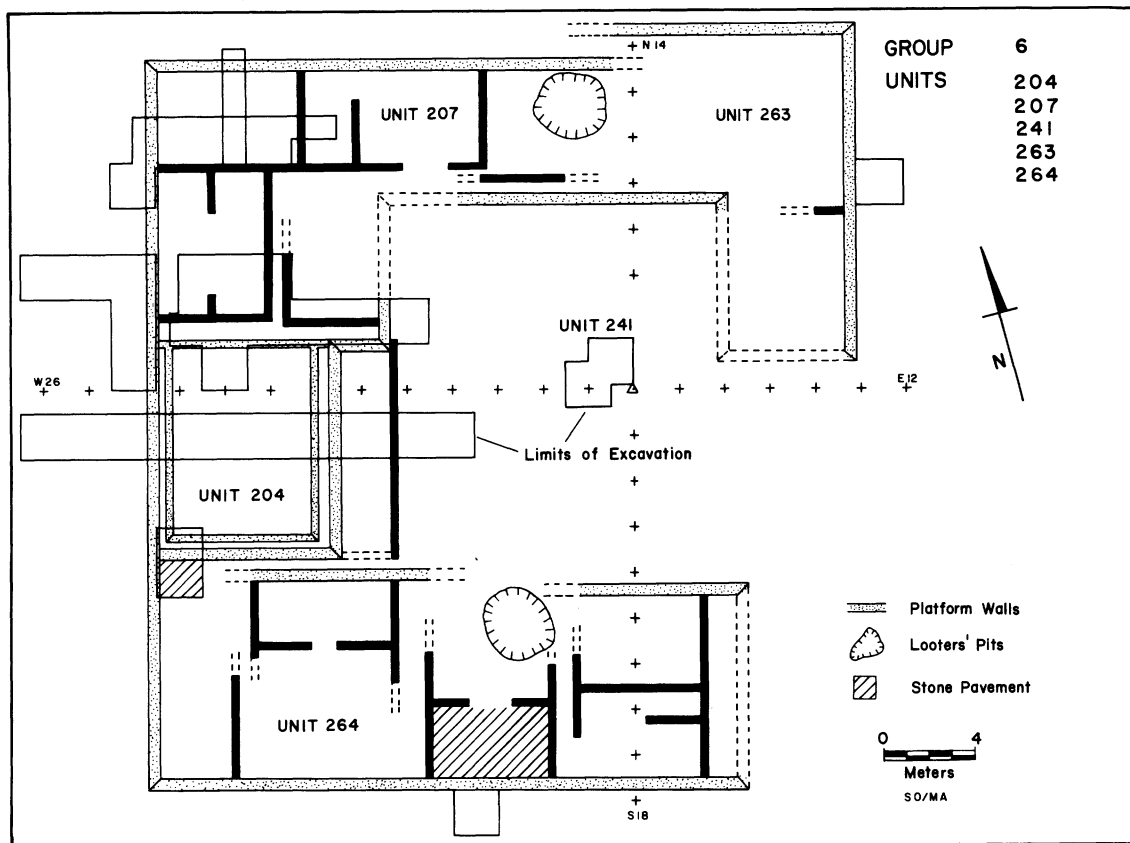


Figure 7. Patio group 6 at Cuexcomate. This is an elite residential compound composed of four connected type A platform houses. Heavy black lines represent stone wall foundations.

central part of Cuentepec Viejo, a city-state capital and the largest Cuauhnahuac-phase site in the Cuernavaca formation. In sum, the size and the quality of the architecture of group 6, coupled with artifactual studies and comparative data, suggest this compound was the palace (*teecan* in the Nahuatl language) of a noble household at Cuexcomate.

Type B platform houses are smaller in size than the structures in patio group 6 (TABLE 2). All are discreet structures integrated into patio groups at Cuexcomate. Four are found in patio group 7 (along with three ground-level houses) and one each in groups 1, 9, 10, and 11. Only one of these structures was excavated (unit 203 in Group 10), but the top surface had eroded away leaving only the rock rubble fill inside a platform constructed of large rough boulders and cobbles. Judging by unit 203, limited surface clearing of other platform houses, and a looters' pit dug into one of the structures, the quality of construction is inferior to the type A platforms. Use of dressed stone is rare and haphazard, and there are no visible traces of lime stucco in or around any of these

structures. We conclude that Type B platform houses are residences, based on associated domestic debris recovered in exterior excavations and their occurrence in patio groups. As indicated in Table 2, these structures are only slightly larger in surface area than the ground-level houses.

Special Houses

This class is defined specifically for three associated ground-level houses excavated at Cuexcomate (group 24). They stand out from other ground-level houses in four ways: 1) they are closer together than other groups of houses and have connecting walls; 2) one of the structures has particularly fine masonry; 3) a number of unusual artifacts (including jade beads and a carved stone bowl) were recovered in association with these buildings; and 4) except for one destroyed house, these structures are the closest to the large temple platform at Cuexcomate. Their residential function is inferred from associated artifacts, most of which are typical domestic categories (see note 1). The decision to excavate these structures was based on their unusual appearance and their location. Pending com-

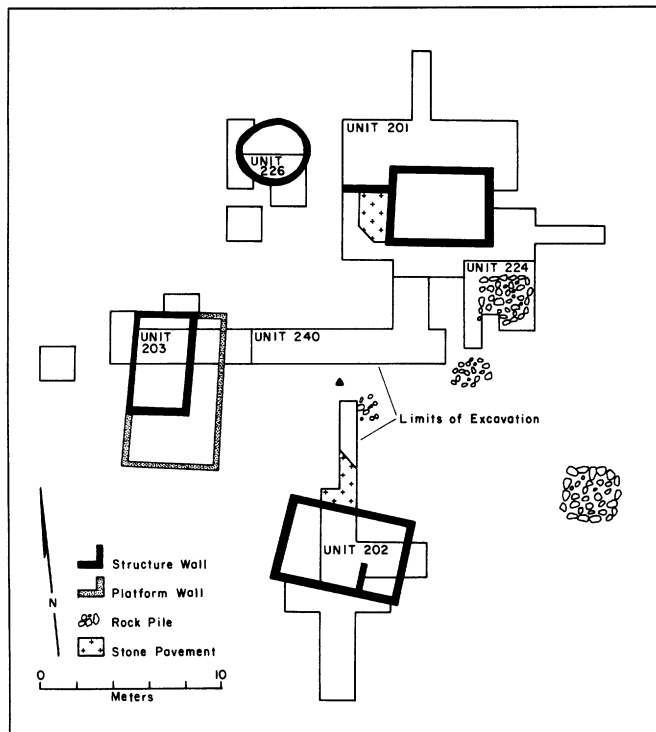


Figure 8. Patio group 10 at Cuexcomate. Except for the presence of four rock piles, this group is typical of patio groups at Cuexcomate and other sites in the area.

pletion of the artifact analyses, we suggest that these structures were residences of persons with some special role or status, perhaps priests.

House Groups

As indicated in Table 1, most houses at Cuexcomate (65%) are part of patio groups, while another 13% are found in informal groups. Patio groups are defined by the arrangement of two or more houses around a common rectangular level area or plaza. Patio groups often include circular structures and/or rock piles. These groups give an impression of formal planning, and we therefore infer close socioeconomic connections among the households inhabiting patio groups. Most patio groups have 3 or 4 constituent houses, while two complex groups (nos. 1 and 7) have 10 and 7 houses respectively. Informal groups consist of 2 houses located within 5 m of one another. These groups lack any surface evidence of additional structures, common patio areas, or formal planning (see Ashmore 1981: 48).

Figure 8 shows patio group 10 at Cuexcomate. One house was excavated entirely, while the other two were tested. The circular structure, a rock pile, and the patio

area were also tested. Nearly all excavated deposits here date to the Late Cuahnahuac phase, and artifact analyses now in progress will permit an examination of the nature of relationships among the structures of this group. In addition to patio groups 6 and 10, two other patio groups (3 and 7) were tested extensively, and many individual excavations of houses, patios, and other structures provide data on the nature of patio groups at Cuexcomate.

Our excavations suggest that all of the houses located in patio groups were functionally similar residential structures. Secondary refuse deposits of typical domestic debris are found outside of all such structures (usually scattered around the sides and backs of houses, with less refuse on the front or plaza side), and the only major architectural differentiation among rectangular structures within patio groups is found in five groups that combine platform and ground-level houses. Non-residential structures found in patio groups are limited to circular structures and rock piles, and we found no evidence for shrines as found in patio groups at Classic Maya sites (Becker 1971; see also Sheehy in press on Maya patio groups).

In addition to group 6, two patio groups at Cuexcomate stand out from the others. Groups 1 and 7 are distinctive in that they have more houses than other groups (see above), and both have at least one platform house. We suggest that this indicates some special status or role for the inhabitants of these groups, but this interpretation will have to be tested against the artifactual studies.

Early 16th-century Spanish administrative census documents from western Morelos (written in Nahuatl) contain considerable information on the social composition of the inhabitants of patio groups. As analyzed by Carrasco (1972, 1976), such groups are termed *ithualli* ("houses grouped around a patio") in Nahuatl, and the residents of these units are referred to as *cemithualtin*. In the *calpulli* or settlement of Molotla (location uncertain), 42 of the 128 houses were grouped into 16 compounds of 2 to 4 houses each (Carrasco 1976). Most *ithualli* had a compound head of greater wealth and status upon whom the other residents depended for economic support. While some of the dependent households were related to the compound head through kinship, many were not and Carrasco (1976) argues that the tribute system was more important than kinship in structuring social organization at this level (see also Smith in press). The correlation of archaeology and ethnohistory is an important theme in the continuing analytical work of the Postclassic Morelos Archaeological Project, and these and other ethnohistorical models will be tested explicitly against the archaeological data.

Temple Platforms

This class, defined as platform structures not formally integrated into patio groups, contains two examples. Functional interpretation of the class, based upon several characteristics of structure 55 (unit 225) discussed below, is not very secure due to the limited extent of excavation. Structure 55, however, is certainly unique and quite different from the platform houses at Cuexcomate.

Structure 55 (FIG. 9) is the best candidate for a religious structure at Cuexcomate. This is the largest single construction at the site in height and volume. It differs from the large platform houses of patio group 6 in being higher, having a plan more square in proportion, and having a two-step exterior profile. Structure 55 was tested with 2-m wide N-S trenches outside of the north and south exterior walls, plus a 2 m × 2 m test pit in the center of the structure (FIG. 9). The structure was built in two stages. The first was a 1-m high stone platform with a fill of very large cobbles. The second extended the initial platform to 1.8 m in height with smaller cobbles as fill, and involved the addition of a lower step or buttress around the perimeter of the platform. There is no evidence for a floor

between the first and second stages of the structure. A particularly fine lime stucco floor with a foundation of small stones was encountered on top of the second platform in the test excavation. There was insufficient time to expand this pit to look for possible superstructure walls on top of the platform.

Our functional interpretation of structure 55 is based on its unique architectural characteristics coupled with a knowledge of the general Mesoamerican practice of building temples on top of platforms and pyramids (Marquina 1964). Given the limited extent of our excavations, this is not very strong evidence for a religious function. Most Postclassic temples and pyramids in central Mexico have their stairs on the west side, and offerings consisting of caches and cremation remains in pots are often buried under the stairs or front part of the structure (e.g., Sisson 1974: 31, 37; Matos 1988). We did not excavate on the west side of structure 55, however, because of the presence of a large looters' pit. Analyses of associated artifacts may help clarify the function of this structure. Structure 5 is the second building classified as a temple platform. This is a small platform (1.1 m in height, top area of ca. 20 sq

Figure 9. Temple platform, structure 55 (unit 225) at Cuexcomate. This section illustrates the two construction stages of this platform. No traces of a superstructure were encountered, but only 4 sq m of the top area were excavated.

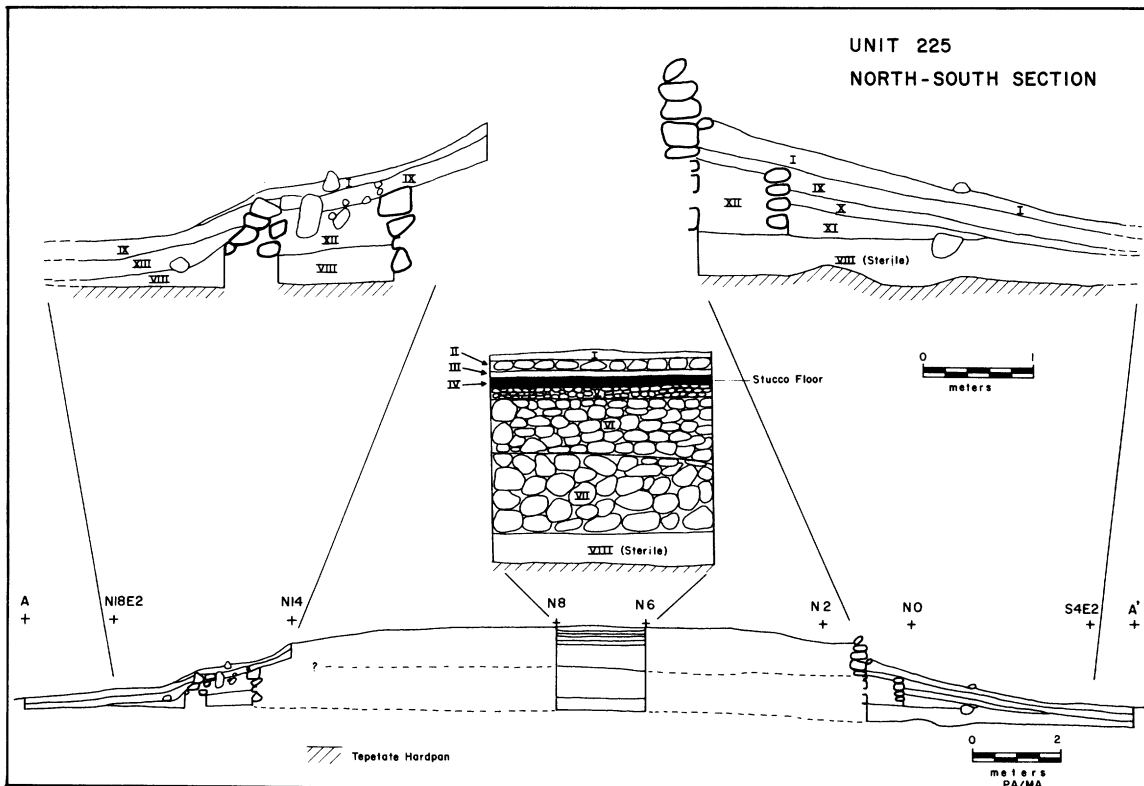




Figure 10. Type B circular structure, structure 33 at Cuexcomate. This low stone platform is paved with rough cobbles; it measures 4.0 m in diameter (this structure was cleared but not excavated).

m) located at the northern end of Cuexcomate. The structure itself was not cleared or excavated, but a small trench was opened on the presumed back side (as determined by the locations of other structures and the topographic situation; FIG. 3) to recover possible associated artifacts.

Circular Structures

This is a descriptive class of buildings with circular stone foundations. The site of Cuexcomate was originally named on the assumption that these features represent foundations for maize granaries (Nahuatl: *cuexcomatl*) of circular form like those found in rural Morelos today. This interpretation cannot be supported or rejected on architectural grounds alone, but ongoing artifactual and botanical studies may help provide better definition.

These structures occur in two forms. Type A examples (8) have a double-row circular stone wall with no internal floor, while type B structures (3) consist of low stone platforms with cobble floors (FIG. 10); one unexcavated example could not be assigned to either type. There is no difference in size between the two types of circular structure. All 12 examples at Cuexcomate are tightly clustered in size near the mean diameter of 4.1 m (the standard deviation is 0.5 m). Most circular structures are associated with houses: five are incorporated into patio groups, one is associated with an informal group, and three are adjacent to isolated houses. The remaining three examples are not near any houses (the circular structure at Site 3 is also part of a patio group).

Three circular structures were excavated. Few artifacts were recovered inside these structures, and exterior debris was less dense than in the midden deposits outside of houses. These locational and artifactual data are consistent

with a storage function but certainly do not confirm that interpretation. Two types of artifact studies still in progress should help clarify the issue. First, ceramic classification emphasizing form will reveal the nature of associated vessels: a high proportion of storage ware might strengthen the hypothesized function. Second, if palynological study reveals unusually high levels of maize pollen, this would also support the storage interpretation. It should be noted that the less common type B structures most closely resemble the stone pavements that often support the circular *cuexcomatl* maize granaries of modern Morelos (e.g., Lewis 1951: 143; Moya 1982: 126; personal observations of the authors). Modern *cuexcomatl* have circular wall foundations ca. 1.5 m in diameter in the center of a circular stone pavement (which is 3–4 m in diameter); no traces of such walls were recovered in our excavations.

Rock Piles

This class is defined as low amorphous clusters of stones and associated artifacts located in the centers or on the edges of patio groups. Although not formal structures or buildings, these features occupy important positions in many patio groups and need to be considered in any discussion of architectural patterns at Cuexcomate.

Eleven rock piles were recorded at Cuexcomate. All occur in patio groups, usually at the center of the plaza. Patio group 10 has four (FIG. 8), group 17 has two, and five other groups have one each. Site 3 also has a rock pile (FIG. 4). Prior to excavation, rock piles were interpreted as the collapsed remains of low platforms or altars, since such features are common in plazas at many Mesoamerican sites. Upon excavation, however, it became clear that the amorphous clusters of stones are simply piles of unmodified cobbles. Rock piles range in size from 1.5 m to 3.0 m in their widest dimension and consist of a single layer of stones. Beneath the stones were found shallow, unstratified deposits of very dense domestic refuse (most middens have ceramic densities between 1000 and 2000 sherds per cu m, while rock piles have densities over 3000 sherds per cu m). One rock pile (unit 224 in group 10) was excavated completely, and six others were tested—five at Cuexcomate and one at Site 3. Four of the seven examples had caches of one to four ceramic bowls with charred plant remains, placed adjacent to the rock piles, and one example had an infant burial below the artifactual debris.

The artifacts in rock piles are sufficiently different from those recovered in middens to suggest a different cultural formation process for their origin. Compared with the secondary refuse outside of houses, rock pile deposits are

denser and more diverse, contain a higher proportion of rare and valuable items (copper, jade, figurines), and have distinctive ceramic remains. The sherds are larger, there are reconstructible vessels (very rare in midden deposits), and there are some unique vessel forms not encountered elsewhere. While these observations still await quantitative expression, the distinctiveness of the artifacts from beneath rock piles is striking. We suggest that these deposits represent one-time ceremonial events, perhaps corresponding to the practice of breaking and discarding household possessions at the completion of the 52-year calendrical cycle as described by Sahagún (1950–1969 [1569], bk. 7: 25, 31). Ekholm (1979) describes a unique Classic period deposit at Lagartero, Chiapas, that she interprets in a similar fashion.

Agricultural Features

Several different types of agricultural features occur in the area of the excavated sites. They vary in shape, size, frequency of occurrence, and topographical placement. These features are categorized as check-dams, cross-channel dams, terraces, and water diversion features (Price 1988: 20). Check-dams and cross-channel dams are stone walls, 0.5 m to 2.0 m in height, built in small seasonal drainages at an angle against the direction of runoff and proportional to the slope, being spaced more closely together on steeper inclines than on gentler slopes. Terraces are stone walls built along the contours of hill slopes away from the drainages; they tend to be more closely spaced than the dams and are usually less than 0.5 m in height. Water diversion features are excavated channels apparently used to divert excess water from places where it may do damage (such as erosion or flooding of settlements or crops) to places where it can be evenly dispersed on fields or discharged into streams.

The Postclassic dating of the agricultural features is based on several indirect considerations. First, Cuauhnahuac-phase sherds are present in the fill deposits behind dams and terraces. Second, the features are clearly associated with the settlements, and there is virtually no non-Cuauhnahuac occupation in the immediate vicinity of the features. Third, the occupants of the sites needed features like these in order to produce their basic subsistence crops because the heavy clay vertisols that characterize most level ground in this area would have been difficult to cultivate with Prehispanic tools and techniques.

Where recent plowing has not destroyed them, these agricultural features are abundant in the area of the excavated sites. They extend northward, where a wide variety of forms are present throughout the Cuernavaca formation (Sterpone 1988). Detailed descriptions of the agricultural

features, their excavation, and geoarchaeological analyses of associated sediments are provided in Price (1988); Donkin (1979) describes comparable examples from other parts of central Mexico.

Discussion and Implications

Site Comparisons

Cuexcomate, Capilco, and Site 3 were chosen for excavation because they represent three distinct categories of site size and complexity. Comparisons of their architectural remains reveal interesting and significant patterns of similarity and difference. Compared to Capilco, Cuexcomate's larger size (in area and number of houses) is matched by a greater number of architectural classes (TABLE 1). All of the structures at Capilco are ground-level houses, while Cuexcomate also has platform houses, temple platforms, circular structures, rock piles, and special houses. Cuexcomate was clearly a more complex settlement than Capilco, in both the vertical and horizontal dimensions of complexity (McGuire 1983). The architectural remains at Capilco suggest a settlement of relatively homogeneous households, while at Cuexcomate the distinction between platform houses and ground-level houses implies major differences in wealth and status, and the variety of architectural classes points to horizontal differentiation as well.

In addition to the architectural variability, there are a number of other indications of social complexity at these sites. Three levels of religious activity are indicated: site-wide observances focused on structure 55, patio-group observances as signalled by rock piles, and household rituals involving ceramic figurines and incense burners. Possible storage activity is suggested by the circular structures. Artifacts at both sites provide evidence of exchange with the Basin of Mexico (ceramics, salt, and obsidian), the Cuernavaca area (ceramics), and western Mexico (copper). Production of cotton textiles, chipped-stone and ground-stone tools, bark-cloth paper, and possibly other materials is also attested by the artifacts. Some production activities were widespread among households (e.g., cotton spinning), some were apparently limited to a small number of households (e.g., manufacture of basalt "bark-beaters"), and some have a distribution between those extremes (e.g., paper).

On the basis of these architectural and artifactual comparisons, Capilco may be designated a village (i.e., a small homogeneous settlement) while Cuexcomate exhibits low-level urban functions and may therefore be designated a town (see Hull 1976 or Braudel 1981: 479–509 on the

concept of towns). Site 3, situated in the midst of a system of hillslope terraces, may be interpreted as a farmstead. The presence here of a circular structure and rock pile may indicate a closer link with Cuexcomate than Capilco, but this is a tentative interpretation. One very unusual characteristic of the Site 3 excavation is that almost no artifacts were recovered. In 6 cu m of excavation, only 32 sherds were found, plus a vessel offering associated with the rock pile.

When construction patterns of ground-level houses are considered, the distinction between Cuexcomate and Capilco is reversed: the smaller site exhibits more variability than the larger site (TABLE 3). In terms of wall and floor construction and rebuilding activity, houses at Cuexcomate are far more standardized than those at Capilco. Until further dating and artifact study is carried out, this pattern cannot be explained. The following are a few possibilities: 1) there may be chronological changes in house construction within the Cuauhnahuac phase, and Capilco may have been occupied for a longer duration; 2) the presence of an elite at Cuexcomate somehow favored more standardized construction practices at that site; or 3) the standard of living may have been higher at Cuexcomate, leading to houses of higher quality and greater labor investment (double-row walls and stone cobble floors). These hypotheses will be evaluated in the dating and statistical work of the project.

The three sites excavated by the Postclassic Morelos Archaeological Project are representative of the kinds of sites located by Sterpone (1988) in his survey of the Cuernavaca formation to the north. The largest site in this area, Cuentepec Viejo, represents the apex of the settlement hierarchy. This ethnohistorically-documented city-state capital (Sterpone 1988; Smith in press) is a large, complex settlement with a 10-m high pyramid, at least one ballcourt, a large U-shaped platform complex, and many houses. Although it is difficult to make comparisons with buried and plowed Cuauhnahuac-phase sites in other parts of Morelos, Cuexcomate is similar in size and layout to the city-state capital of Coatlan Viejo located in the Chalma Valley 25 km to the sw. Mason (1980) conducted intensive surface collections and determined that Coatlan covers 14.6 ha (1980: 54). It has a large mound complex in the center of the site with 20 structures, similar to the mounds of groups 6 and 7 and structure 55 in the center of Cuexcomate. The various small Cuauhnahuac-phase sites surface-collected by Dennis Lewarch in the vicinity of Coatlan (Mason and Lewarch 1981) may be similar to Capilco, but most have been disturbed by plowing and site plans are not yet available.

Social Complexity in Late Postclassic Morelos

What can the architectural data tell us about patterns of social complexity in Cuauhnahuac-phase Morelos? How similar or different is the archaeological picture compared to that provided by ethnohistory? While these issues are too broad for detailed treatment here, some suggestions may be offered. The architectural data presented here, taken in conjunction with Sterpone's settlement pattern work, point to a complex state-level society. This is indicated by a multi-level differentiated settlement hierarchy, the architectural evidence for social stratification in housing, the construction of monumental structures at Cuentepec Viejo and to a lesser extent at Cuexcomate (group 6 and structure 55), and by the artifactual evidence for economic complexity and social differentiation. This is in basic agreement with the documentary record, which describes nobles and commoners, city-states and empires (see Smith 1986; Maldonado 1989). We have architectural evidence for intensive agriculture in the form of check-dams and hill slope terraces (Price 1988); this complements documentary data for irrigation along the major rivers of western Morelos (Maldonado 1984, 1989; Smith in press).

When we consider the more general and subjective questions of the standard of living and the level of social exploitation in this area, the archaeological and documentary records appear to paint contrasting pictures. The ethnohistorical sources tell of high tribute levels, conquests, and the exploitation of commoners by nobles; furthermore, they suggest that our study area was a politically and ecologically marginal area away from major cities and productive lands (Carrasco 1976; Smith in press). Archaeologically, however, we know that this was an area of dense rural population (Sterpone 1988) and people at these settlements engaged in craft production, carried out small-scale intensive agriculture, and participated in extensive long-distance trade networks; fine ceramic serving ware (local and imported) is widespread; and ritual/ceremonial activities were common. The resolution of this apparent contradiction must await the results of continuing artifactual analyses and further documentary studies in Morelos.

In sum, architectural patterns can shed considerable light on Mesoamerican rural society (see also Webster and Gonlin 1988). While written sources do provide some information on rural settings, the archaeological record is more informative and current fieldwork in Morelos and the Basin of Mexico is adding greatly to our knowledge of the Aztec peasantry (e.g., Sanders, Parsons, and Santley 1979; Mason 1980; Parsons et al. 1982; Evans 1985,

1988; Brumfiel 1985, 1987; Price 1988; Sterpone 1988). Rural and provincial areas of Aztec central Mexico were not simple, homogeneous, grain-producing hinterlands. Fieldwork in these areas and the continuing analysis of artifacts are providing the foundation for a new impression of the regional configuration of Aztec central Mexico. We can now show that the Aztec countryside was a densely settled, socially complex landscape. In this view rural areas take their place alongside cities and towns as crucial components in our understanding of Aztec society, just as archaeology takes its place alongside ethnohistory as a major source of information on the Aztecs.

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