

# REINTERPRETING THE GREAT PYRAMID OF CHOLULA, MEXICO

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## Abstract

The Great Pyramid of Cholula is both the largest and oldest continuously occupied building in Mesoamerica. Initial occupation of the ceremonial precinct began in the Late Formative period, and the first building stage of the pyramid dates to the Terminal Formative. The Great Pyramid was built in four major construction stages and at least nine minor modifications. Early stages shared stylistic similarities with Teotihuacan, but toward the end of its construction history external contacts shifted to the Gulf Coast, particularly El Tajín, and probably relate to occupation by ethnic Olmeca-Xicallanca. The fourth and final stage was contemporary with extensive construction on the south side at the Patio of the Altars, and dates to the Early Postclassic period. This period ended, however, with the partial abandonment of the pyramid when ethnic Tolteca-Chichimeca constructed a ceremonial center around their "new" Pyramid of Quetzalcoatl. The Great Pyramid continued as an important shrine dedicated to mountain worship and a rain deity until the Spanish Conquest. It remains one of the most important religious sites in Mexico, where the shrine of the Virgin of the Remedies attracts pilgrims to the church atop the pyramid mound during the annual festival. This paper summarizes the archaeological and ethnohistorical information available to reinterpret the construction history and ideological content of the pyramid throughout its long existence.

Despite an extensive archaeological and ethnohistorical record, the religious center of Cholula remains one of the great enigmas of ancient Mesoamerica. Yet because of the confused and often contradictory nature of these accounts, Cholula has tended to drop out of historical syntheses of central Mexico except for general comments about its overall importance and dismay over gaps in the site's history (e.g., Adams 1991:224; Weaver 1993:206). As the dominant archaeological feature of Cholula, and the focus of most of the archaeological investigations, the Great Pyramid is a valuable key to understanding Cholula's culture history (Figure 1). The purpose of this paper is to address the confusion, synthesizing information from previous studies with recent observations to reinterpret the construction history and meaning content of the ceremonial center.

A variety of obstacles hinder interpretation of pre-Columbian Cholula, including the "tunnel vision" of the early excavators who concentrated on architectural features of the Great Pyramid via a maze of excavated tunnels used to explore buried facades of the multistage mound. A related problem with the Cholula data is the incomplete publication of results, often in obscure venues, with few attempts to summarize the information (but see Mountjoy and Peterson 1973; Paddock 1987; Peterson 1987; Suárez C. and Martínez A. 1993). Archaeologically, excavations have frequently focused on construction fill without consideration of formation processes, resulting in minimal control over the depositional context of the recovered artifacts. As a consequence, site chronology remains poorly understood, and relies almost exclusively on relative chronology rather than archaeometric dates (but see McCafferty 1996). Cholula's historical sequence has often been "borrowed" uncrit-

ically from the Valley of Mexico without consideration of its distinct cultural development (McCafferty 1992:230-241).

Frustration over the site's chronology is heightened by discrepancies in culture-historical reconstructions for the site between ethnohistorical accounts of continuous occupation during the Classic-Postclassic transition, and archaeological interpretations of a break in the cultural sequence representing Late Classic abandonment. Ethnohistorical accounts suggest a series of ethnic "invasions" beginning at the end of the Classic period, when the "giants," or *quinametín*, were supplanted first by Olmeca-Xicallanca, and later by Tolteca-Chichimeca populations (*Historia Tolteca-Chichimeca* 1976 [1547-1560]; Ixtlilxochitl 1975-1977 [1625]:1:529-530; also Davies 1977:106-120; Jiménez Moreno 1966:63). Under this interpretation the Great Pyramid was abandoned at the end of the age of the Olmeca-Xicallanca when the Tolteca-Chichimeca built the Pyramid of Quetzalcoatl at what is now the *zócalo* of San Pedro Cholula. This historical scenario was adopted in early archaeological syntheses of Cholula (e.g., Marquina 1951:115-129; Noguera 1954).

In contrast, archaeologists from the Proyecto Cholula argue that the Great Pyramid was abandoned at the end of the Classic period (Dumond 1972; Dumond and Müller 1972; Müller 1970:142; Marquina 1975). Several possible reasons for the hiatus have been suggested, including volcanic eruptions (Marquina 1975:112), flooding (Dumond and Müller 1972:1209-1210), and general social upheaval relating to the "collapse" of other Classic-period centers (Suárez C. and Martínez A. 1993:26). Epiclassic-period occupation of the nearby fortified hill of Cerro Zapotecas provides evidence that Cholula itself may have been partially abandoned during this period (Mountjoy 1987).

This paper focuses on the Great Pyramid and its associated ceremonial precinct, considering construction history, stylistic affinities with other regions of Mesoamerica, and symbolic content. In addition to synthesizing all available information, I hope to reconcile the archaeological record with the ethnohistorical accounts, specifically by demonstrating that the construction history of the Great Pyramid was both more complex and of longer duration than is currently accepted.

## HISTORICAL CONTEXT OF CHOLULA

Cholula is located in the Puebla–Tlaxcala Valley, an alluvial valley separated from the Valley of Mexico by the Sierra Nevada, including the volcanoes Popocatepetl and Ixtaccihuatl (Figure 2). Dependable rains between June and September and runoff from the nearby snow-covered mountains provide adequate water for intensive farming, making Cholula one of the most productive agricultural regions in central Mexico (Bonfil Batalla 1973:23; Super 1988). The high clay content in the local alluvial soil made pottery manufacturing and brickmaking historically important industries (Bonfil Batalla 1973:80–82). Finally, Cholula lies on trade routes linking the Valley of Mexico with the Gulf Coast and Oaxaca, and consequently it developed into a market center for exotic goods (Durán 1971 [1576–1579]:129, 278).

The earliest archaeological remains discovered at Cholula date to the Middle Formative period based on diagnostic kaolin-slipped pottery that has been found at several locations (Baravalle and Wheaton 1972; Caskey 1988; McCafferty 1984; Müller 1978:220–221). Decorated ceramics and figurines include Olmecoid motifs, indicating that Cholula's inhabitants shared in a pan-Mesoamerican religious ideology. Monumental architecture has been located in three areas, suggesting that Cholula was already a developing urban center by this time. By the Late Formative period Cholula may already have measured 2 km<sup>2</sup> in area based on the discovery of discrete artifact concentrations<sup>1</sup> (McCafferty 1984, 1996). Although the Cholula region featured several other mounded sites during the Formative period (e.g., Coapa, Acatepec, Coronango, etc.), mound construction appears to stop at the end of the period, with Cholula becoming the dominant regional center.

During the Classic period Cholula covered an area of about 4 km<sup>2</sup> and shared ceramic and architectural styles with Teotihuacan (Dumond and Müller 1972). Other features were distinctive, however, including site orientation (Tichy 1981), so it is unlikely that Cholula was simply a satellite of the Teotihuacan

<sup>1</sup>Due to the enormous amount of cultural deposition from nearly 3,000 years of occupation, compounded by Cholula's location in an alluvial basin, traditional methods of surface survey are not particularly effective. It is rare for materials predating the Postclassic to occur on the surface unless they are the result of redeposition. As a graduate student at the Universidad de las Américas (1980–1984), I tried to identify diachronic settlement patterns within the urban center of Cholula. A more viable method for identifying subsurface features involves visual inspection of construction trenches, particularly those that reach several meters in depth. Using this strategy I was able to identify a rich Middle Formative deposit associated with a cobble platform in San Andrés Cholula (McCafferty 1984). Investigators from the Puebla Regional Center (Instituto Nacional de Antropología e Historia [INAH]) and the Universidad de las Américas conducted surveys and excavations of archaeological features exposed during an extensive drainage project that dug deep trenches throughout the city in the 1980s; unfortunately these materials remain unanalyzed for the most part (but see Fajardo 1985).

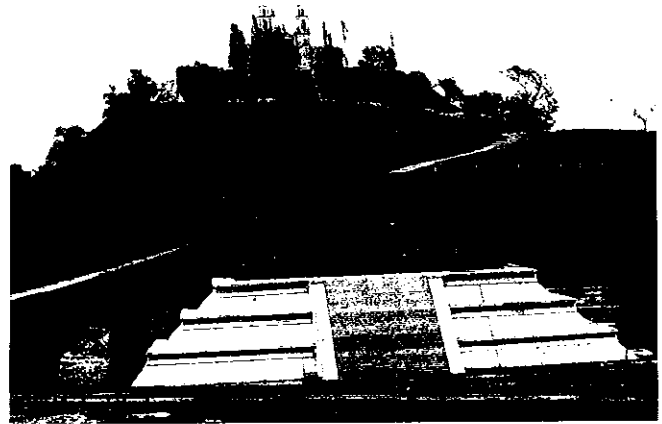


Figure 1. Great Pyramid of Cholula from the west, showing reconstructed Stage 3B.

empire (Millon 1988). Recent excavation of a Middle Classic period house from the urban zone of Cholula provides evidence for domestic and mortuary practices from the city (McCafferty and Suárez Cruz 1994).

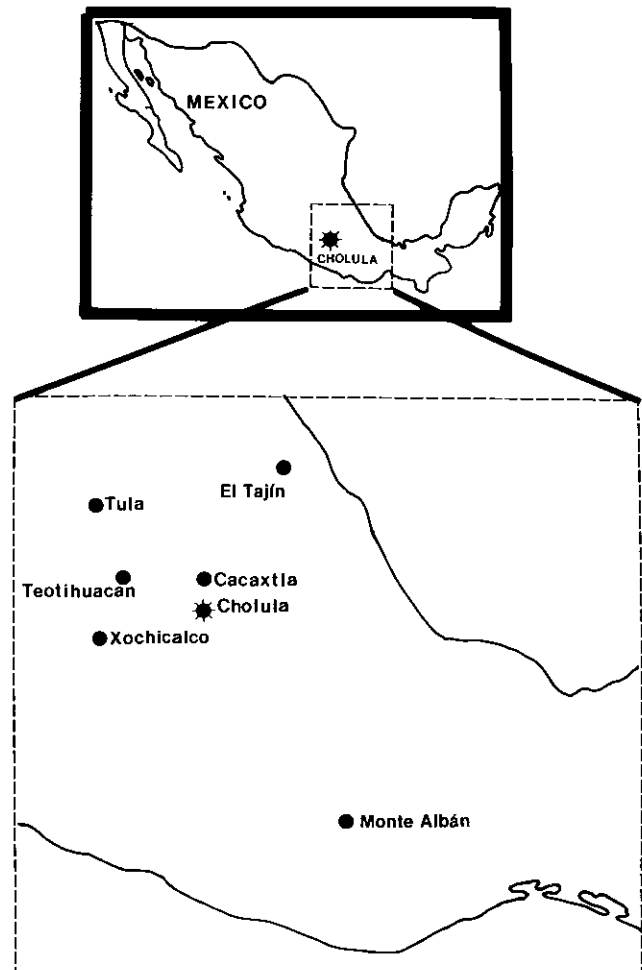


Figure 2. Map locating Cholula within central Mexico.

Postclassic Cholula is documented not only by archaeological remains, but also by a rich ethnohistoric record. Unfortunately, the two data sets are not always consistent, and the culture history of this period has been confusing. A series of ethnic "invasions" resulted in changing settlement patterns, probably including the partial abandonment of the Great Pyramid at the end of the Early Postclassic when the ceremonial center shifted to what is now the plaza of San Pedro Cholula. Cholula reached its maximum size during this period, at approximately 8 km<sup>2</sup>, with a population of 30,000–50,000 persons (Sanders 1971; but see Peterson 1987:71–73). It was at this time that the Pyramid of Quetzalcoatl was a religious center for central Mexico, with foreign nobles visiting the temples for political legitimation (Rojas 1927 [1581]; Torquemada 1975–1983 [1615]:1:385–386). Quetzalcoatl was also patron deity of the *pochteca* merchants who traveled throughout Mesoamerica acquiring exotic and precious goods for sale in the Cholula market (Durán 1971 [1576–1579]:129; Pineda 1970 [1593]:180–181).

The Spanish Conquest devastated Cholula. Cortés stopped in Cholula en route to Tenochtitlan, and initiated the infamous massacre in which the Spaniards attacked Cholultecas assembled in front of the Pyramid of Quetzalcoatl (Cortés 1986 [1519–1521]:73–74; Díaz del Castillo 1963 [1580]:198–200; *Lienzo de Tlaxcala* 1979 [1550–1564]:26–27, lámina 9; Peterson and Green 1987). Furthermore, the colonial city of Puebla was established about 10 km east of Cholula in the 1530s, usurping political and religious authority from the pre-Columbian center (Torquemada 1975–1983 [1615]:1:426–431). Although Cholula continued as a center of traditional culture and religion, its political and economic importance was greatly reduced.

#### ETHNOHISTORIC ACCOUNTS OF THE GREAT PYRAMID

The Great Pyramid, or Tlachihualtepetl ("man-made mountain") in colonial accounts, had been abandoned long before the arrival of the Spanish, to the extent that the conquistadors took it for a natural hill (Marquina 1970:31). The archaeological significance of the pyramid was quickly discovered, however, when "excavations" in 1535 by the Franciscan priest Toribio de Motolinía recovered "idols" and conch shell trumpets from the summit of the Great Pyramid while erecting a cross (Motolinía 1951 [1540]:138–139; Rojas 1927 [1581]). Motolinía describes the earthen mound as resembling a small mountain upon which corn was cultivated and rabbits and snakes roamed (also Torquemada 1975–1983 [1615]:1:386). The sixteenth-century Spanish administrator of Cholula, Gabriel de Rojas (1927 [1581]), mentions a pagan shrine on top of the Great Pyramid that was dedicated to Chiconauquiahuitl, or 9 Rain.

Durán (1971 [1576–1579]:257) also describes the Great Pyramid in his discussion of mountain worship:

In Cholula there was a man-made hill called Tlachihualtepetl. . . . It was called thus because it is said that the Giants built it in order to climb up to the heavens; today it stands in ruins. This hill was much hallowed; there were the usual and unceasing adoration, the prayers, the great sacrifices, offerings, and slaying of men.

The *Historia Tolteca-Chichimeca* (1976 [1547–1560]:7v, 9v–10r, 14r) provides Early Colonial period illustrations of the Great Pyramid as a natural hill covered with grass (Figure 3).



Figure 3. Depiction of Great Pyramid with water emerging from base, frog and flower glyph at summit, and palace of Aquiach Amapane on platform (after *Historia Tolteca-Chichimeca* [1976:7v]).

Streams of water emerge from a cave at the base of the mound, indicating the spring that still flows out from the east side where a small chapel provides access to the sacred waters. Sitting atop the mound is a frog, and seven flowers are depicted near the summit.<sup>2</sup> A palace is depicted on the side of the pyramid, identified with the Aquiach Amapane, one of the high priests of the Olmeca-Xicallanca.

The *Historia Tolteca-Chichimeca* (1976 [1547–1560]:26v–27r) also depicts the Cholula ceremonial center after it was reorganized by the Tolteca-Chichimeca conquerors. Here the new Pyramid of Quetzalcoatl dominates a plaza that includes several other pyramids (Figure 4). In the upper right is a small representation of the abandoned Great Pyramid, again with the frog glyph on top and a spring at its base.

The Great Pyramid is shown on early colonial maps of Cholula, including one that was part of the *Descripción de Cholula* of 1580 (Rojas 1927 [1581]). The *Codex of Cholula* illustrates the Cholula kingdom at the time of the Conquest and features the pyramid as the central place glyph of the city (Lind 1995; Simons 1968a).

#### ARCHAEOLOGICAL INVESTIGATIONS AT THE GREAT PYRAMID

During the historic period, numerous travelers described the great earthen mound, recording measurements and observations about artifacts collected in the vicinity (Bandelier 1976 [1884]; Charnay 1887; Tylor 1970 [1861]). Beginning in 1930, two major research programs excavated on, in, and around the Great Pyramid. The initial work was directed by Ignacio Marquina, assisted by Eduardo Noguera. In 1965, the investigations were

<sup>2</sup>Two of the images (9v–10r and 14r) depict 7 flowers, but 7v has only 6 flowers, probably because the frog's paw hangs down to where the seventh flower should have been.

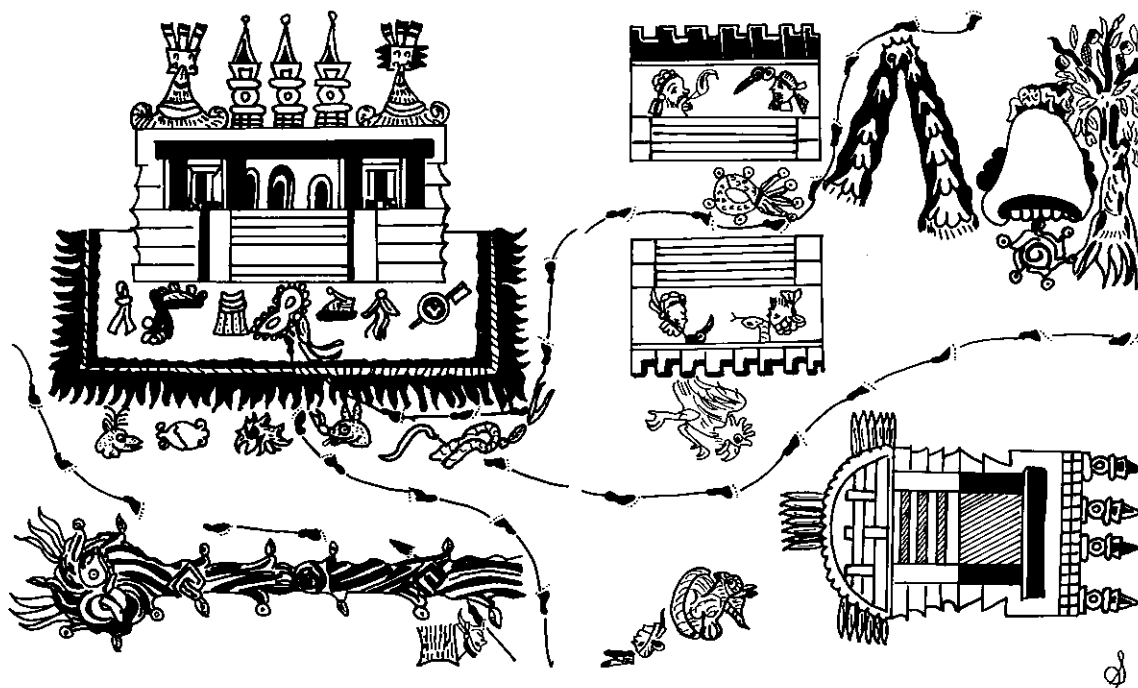


Figure 4. Urban plan of Cholula with Pyramid of Quetzalcoatl in left center and Great Pyramid in upper right (after *Historia Tolteca-Chichimeca* [1976:26v–27r]).

renewed as the “Proyecto Cholula,” initially under the direction of Miguel Messmacher, and later Marquina, assisted by Jorge Acosta and Florencia Müller.

Initial excavations focused on the identification of the different construction phases of the pyramid (Marquina 1939, 1951:115–129), with an additional aim of describing the ceramic sequence for the site (Noguera 1954). During the second phase of investigation, excavations were directed at the south and west sides of the pyramid where extensive architectural complexes were exposed (Marquina, ed. 1970; Messmacher 1967).

Preliminary observations indicated that the pyramid was built in multiple stages, and therefore initial investigations sought to identify architectural features on the interior of the pyramid. Because of the immense size of the mound, explorations were conducted by means of a series of tunnels, ultimately totaling 8 km in length (Marquina 1970:33). Tunnels cut along the north–south and east–west axes exposed facades of the various pyramid constructions. Other tunnels followed stairways and identified corners to discover the dimensions of the different structures. Due to the limited scale of explorations of the various construction phases, as well as destruction of earlier stages by successive construction, descriptions of the architectural features are often sketchy.

Marquina identifies five phases of construction in a series of publications (Marquina 1951, 1970, 1975), yet careful reading of the accounts reveals that these phases are not consistent; some phases are dropped while others are added or renamed. For this reason I have found it useful to revise Marquina’s designations of the different construction phases (Table 1). In my reinterpretation, I have synthesized Marquina’s various accounts to identify four main stages of construction when the pyramid was expanded completely, plus nine phases of partial renova-

tion (Figure 5). This total does not include those separate buildings that were eventually swallowed up by the monumental expansion of the Great Pyramid, or the modern church.

#### THE GREAT PYRAMID

Construction techniques featured a nucleus of adobe bricks covered over by a veneer of mortared stone that was then finished with a plaster surface. Bandelier (1976 [1884]:237–238) notes

Table 1. Correlation of construction stages of the Great Pyramid

Stage	1951	1970	1975	North–South Axis	East–West Axis	Height
1A	I	A	A	120 m	120 m	17 m
1B	I	B	A	(76 m)	?	?
2A	II	C	B	180 m	180 m	35 m
2B	–	–	–	196 m?	?	?
2C	–	–	–	224 m?	?	?
2D	–	–	–	234 m?	?	?
2E	–	–	–	252 m?	?	?
2F	–	–	–	272 m?	?	?
2G	III	D	C	?	?	66 m
3A	IV	E	D	350 m	350 m	66 m
3B	–	F	E	70 m	?	13 m
3C	–	–	–	?	?	?
4	V	–	–	400 m	400 m	66 m?

Note: Measurements based on Marquina (1951, 1970, 1975), except for Stages 2B–2F, which are based on personal observation from the central north–south tunnel. Numbers in parentheses represent nonbasal measurements.

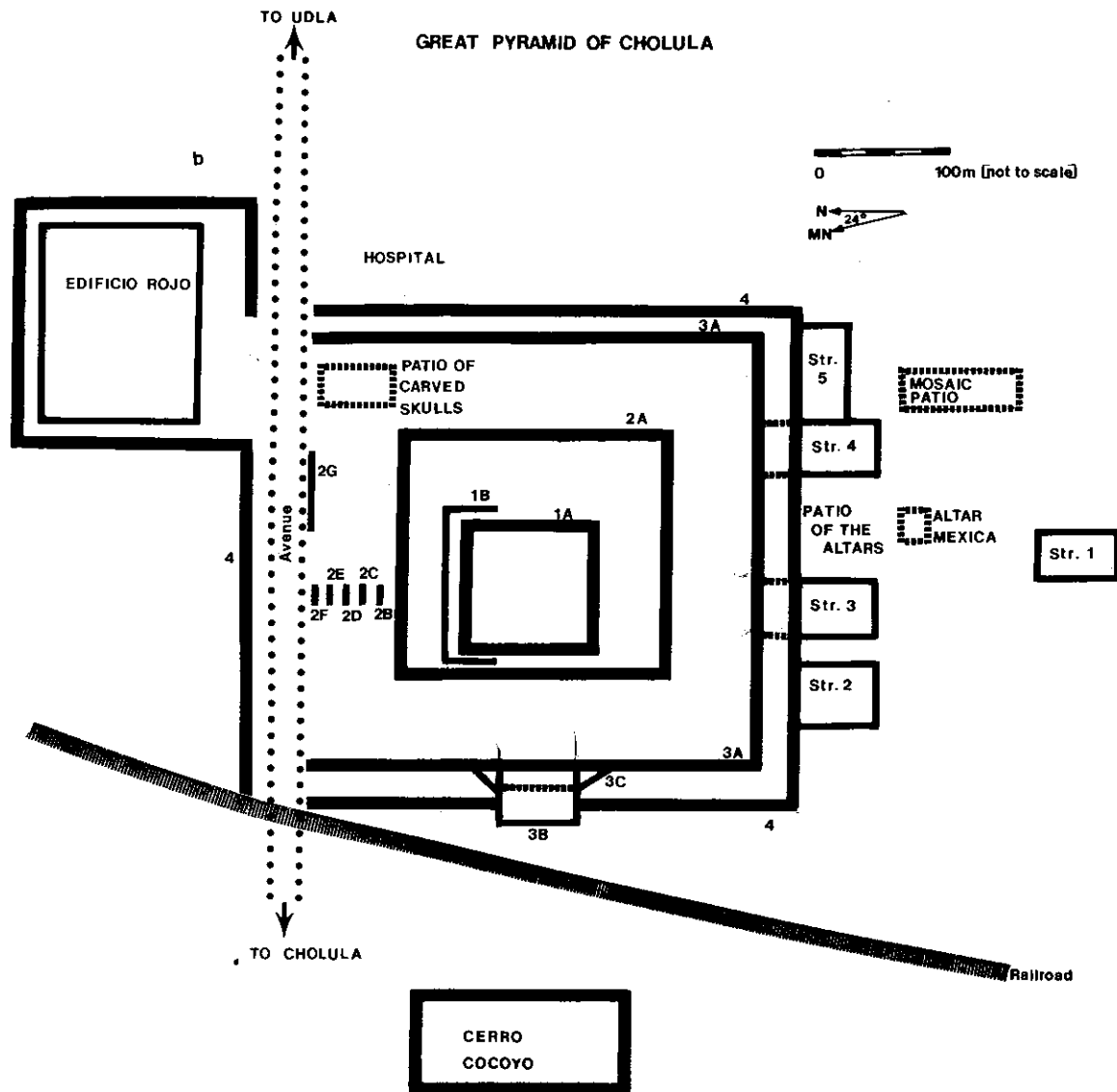


Figure 5. Revised plan of construction stages of Great Pyramid.

differences in the dimensions of the adobe bricks that may relate to different construction phases. Some of the platforms on the south side of the pyramid contain earth fill rather than adobes. Variations in masonry practices are also apparent, with differing patterns in the stone courses. The most dramatic differences found are in the forms of the *talud-tablero* architectural facades (see Gendrop 1984:18-19; Salazar O. 1970a:78, Figure 15). Detailed studies of Cholula architectural elements offer potential for seriation of construction stages as well as identification of foreign influences relating to cultural interaction.

The ceremonial precinct was occupied before initial construction of the Great Pyramid. Formative-period ceramics were abundant on the surface beneath the Pyramid (Noguera 1954: 199-200). They were also found in construction fill of the innermost stage of the Edificio Rojo (Noguera 1956) and in the architectural complex known as the Conejero (Müller 1973; Suárez Cruz and Martínez A. 1993:14).

Two cosmological principles apparently structured the location and orientation of the Great Pyramid. First, it was built

over a natural spring. Unfortunately, the early stages of the pyramid are poorly understood, so it is unknown to what extent the presence of the spring was incorporated into the symbolic meaning of the building. An interior chamber was discovered deep inside the pyramid during explorations in the 1970s (Eduardo Merlo, personal communication 1980) that may relate to an artificial "cave" as a symbolic portal to the underworld (Heyden 1981). Sahagún (1950-1982 [1547-1585]:Introductory Volume:48) also recorded the presence of "mines or caves" within the Great Pyramid.

The second characteristic of the pyramid that probably relates to its cosmological meaning is its orientation at 24-26° north of west (Marquina 1970:36; Tichy 1981:223). At this orientation the western staircase of the Great Pyramid would face the sunset on the summer solstice (Tichy 1981:221), with a temple on top of the pyramid illuminated by the last rays of light on the longest day of the year.

*Stage 1A* was the innermost of the construction phases identified for the Great Pyramid. This pyramid was square, 120 m

on each side, and it stood about 17 m tall (Marquina 1970:36). This was the only construction phase with architectural remains preserved on the top platform, which measured 43 m square. Remains of a square building were found, with low walls measuring 19 m on a side (Marquina 1970:39). Ceramics associated with this construction phase were identified as "Teotihuacan II," dating to the Terminal Formative period.

The initial structure was covered over by a preserved facade (Stage 1B) on the north side and the northwest and northeast corners. The architecture included Teotihuacan-style *talud-tablero* features. In this case, the *tableros* were decorated with painted frescos using vivid colors to depict an insect-like body with a skeletal head, perhaps a butterfly in the process of metamorphosis (Marquina 1970:39, lámina 1).

Stage 2A covered the previous structure, increasing its dimensions to 180 m on a side, with the height estimated at 35 m (Marquina 1970:39). The top platform measured 90 m square. The sides of this structure were composed of nine levels of slightly varying dimensions. The entire length of each side was made up of steps, so that access to the top was possible from any direction. This architectural plan is not duplicated elsewhere in Mesoamerica (Magain 1971:69). A wide staircase on the north side included a prominent set of 52 steps surrounded by smaller groups of 11 steps. The use of such significant numbers—nine levels as in the pre-Columbian underworld, 52 as in the number of years in the calendrical round—as architectural units implies yet another level of cosmological significance for this stage of the Great Pyramid.

A series of five building facades (Stages 2B–2F) was intersected by the central north tunnel, leading in from the present entrance to the archaeological zone. Little is known about these construction phases other than their relative positions after Stage 2A. It is unclear if these represent extensive rebuildings of the north facade of the pyramid or simply sequential enlargements of the north staircase.

The facade of Stage 2G was exposed during road construction along the north side of the Great Pyramid. Marquina (1951:122–123) speculated that Stage 2G resembled a series of broad platforms about 30 m above the original surface, surrounding

a central pyramid that reached 66 m in height. The architectural style differs from the *talud-tablero* form typical of Teotihuacan in that the *talud* is larger than the vertical face. A *tablero* on a northeastern facade was painted with black rectangles outlined in white that resemble the pattern from the Temple of the Niches at El Tajín (Marquina 1970:40–41). An identical motif was found on Structure 4-A' in the Patio of the Altars south of the pyramid (Acosta 1970a:50).

Stage 3A was perhaps the final complete rebuilding of the Great Pyramid, in which a new layer of adobe and stone facing covered all previous construction, with base dimensions of about 350 m to a side (Marquina 1970:41; 1975). Although it may not have increased in total height, the structure became a massive series of platforms surrounding the central peak. Little of the original facade of this structure has been found. Tunnels into the western extreme of the mound located well-built *talud-tablero* architecture similar to that of Teotihuacan (Marquina 1970:41–43), and these facades were later exposed by the Proyecto Cholula (Figure 6). Additional sections of Stage 3A were found on the south side of the pyramid (Salazar O. 1970b:68).

Protruding from the western face of Stage 3A was a large platform (Stage 3B) constructed of cut and fitted stone, again in the *talud-tablero* style. This structure was partially dismantled in antiquity for later construction, so that only the southeast and northeast portions remained intact where they attached to the exterior of the previous structure (Marquina 1970:41–44, Photos 1 and 3). The platform measured 70 m in length and 13 m in height. Whereas the *talud* was built of tightly fitted but plain rectangular blocks, the *tablero* consisted of a bordered panel of carved stone to form a woven mat motif<sup>3</sup> (Figure 7).

Stage 3C was partially removed in the process of reconstructing Stage 3B (Marquina 1970:41). It was a rounded structure, consisting of two steep *talud* units made of rough stone covered

<sup>3</sup>The mat motif as an architectural facade appears in the Maya area, most notably at Copan Structure 10L-22A, where it is identified as the *popol na*, or "mat house," and is interpreted as a place of political council (Fash 1991:130–134). Mat motifs are also associated with concepts of nobility and political authority among the Mixtec and Aztec (Smith 1973:29, 109).

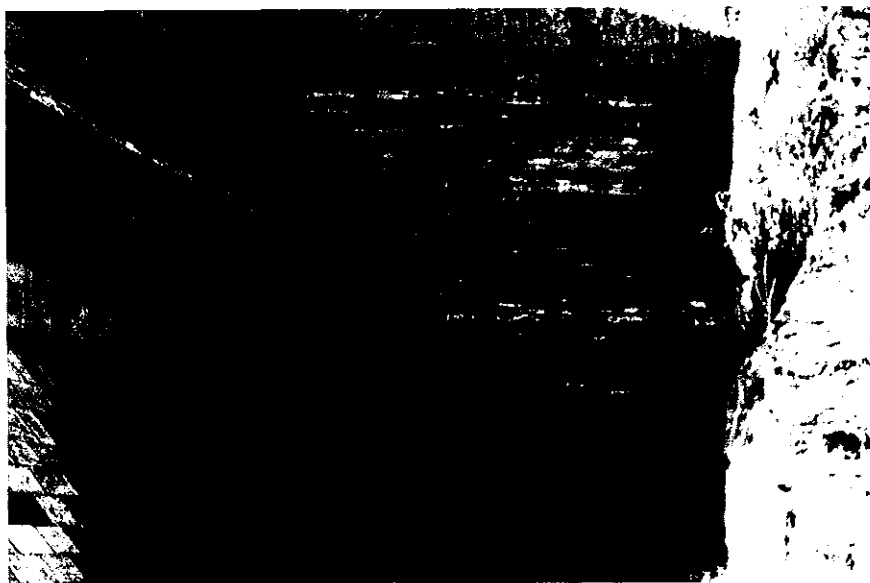


Figure 6. Stage 3A *talud-tablero* architecture with Stage 3B on left and Stage 3C on right.

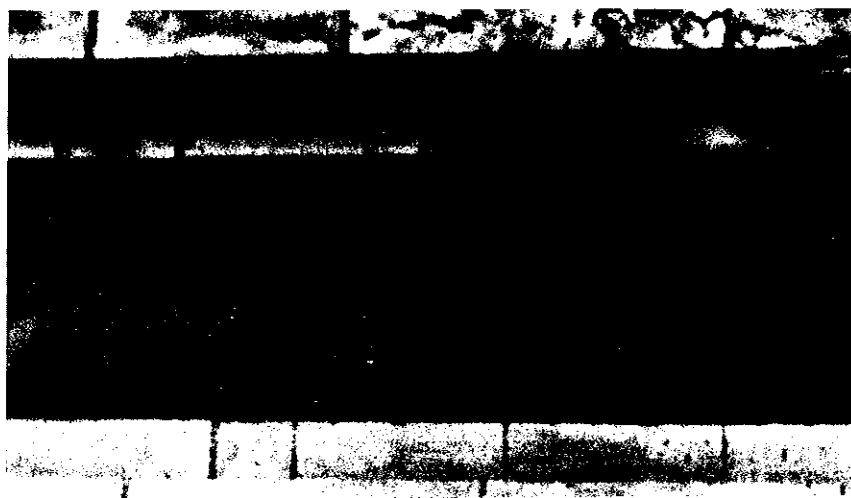


Figure 7. Mat motif on Stage 3B.

with stucco and punctuated with jaggedly protruding pieces of black basalt. Ironically, while Stage 3B has been called the “Pirámide Tolteca” because of the use of “Cemento Tolteca” concrete in its reconstruction, Stage 3C closely resembles Structure B at the Toltec capitol of Tula in its use of black stones embedded in the steep sides of the pyramid. These stones may have supported the stucco on the steep slope of the pyramid, while providing a visual impression of obsidian blades protruding from the structure (e.g., the White Hill of Flints in the *Codex Nuttall* 1975:196).

Capping the architectural remains described above is yet another layer of adobe construction (*Stage 4*), with base measurements of approximately 400 m on a side. Finished architectural surfaces were not recovered, indicating that this final construction phase was either never completed or that the stone facing was removed for subsequent construction, perhaps for the Late Postclassic Pyramid of Quetzalcoatl.

The Patio of the Carved Skulls located on the northeast platform of the Great Pyramid, is associated with this final construction stage. This location corresponds with the palace of the Aquiach priest Amapane that is depicted in the *Historia Tolteca-Chichimeca* (1976:7v). The archaeological remains are of an elite residential compound with a miniature pyramid-shaped tomb covered with stucco and originally decorated with sculpted plaster skulls (Noguera 1937; Figure 8). The “altar” covered the skeletal remains of two adult individuals, a male and a female, and contained grave goods including diagnostic Early Postclassic ceramics. Recent excavations explored adjacent sections of the Patio of the Carved Skulls, recovering detailed information about its construction sequence and cultural identities of the inhabitants (McCafferty and Suárez Cruz 1995). Ceramics from the different deposits of construction fill include a combination of Classic-period types (e.g., Tepontla Burnished Gray) with Early Postclassic diagnostics (e.g., Cocoyotla Black on Natural). The blending of the two ceramic complexes suggests a gradual transition between the two periods rather than abrupt population change.

## THE CEREMONIAL PRECINCT

In addition to the Great Pyramid itself, the surrounding ceremonial precinct provides important evidence for interpreting the

historical development of the center (Table 2). Large mounds located on the north and west sides of the pyramid probably represent plaza groups, though the specific orientation of ritual activities seems to have shifted through time. A series of plazas with large platforms and stela and altar groups are located on the south side of the pyramid. An extensive platform located on the east side of the pyramid is partially covered by modern construction and has never been excavated.

The main plaza to the west of the Great Pyramid has received very little archaeological attention, and the large mound, Cerro Cocoyo (also called Acozac and Cerro de la Cruz<sup>4</sup>), on the west side of the plaza is almost completely unexplored (Figure 9). Cerro Cocoyo measures about 160 m in length and 15 m in height (Bandelier 1976 [1884]:229–230). It features a large raised platform on the west side that may have been a ritual/residential area. Ceramics from the surface of this platform indicate that it was in use during the Early Postclassic period, but the mound itself was probably built during the Classic period. Architectural elements exposed in roadcuts into the sides of the mound indicate that it was built in several construction stages.

The spatial arrangement of the Great Pyramid, plaza, and Cerro Cocoyo would have created a major forum for public ritual. Unfortunately, the urban growth of modern Cholula has severely impacted these archaeological resources, with the railroad crosscutting the plaza, modern buildings covering the north and south sides of the plaza, and houses encroaching on the platform behind Cerro Cocoyo. An adobe nucleus located about 200 m south of Cerro Cocoyo represents yet another significant pyramid mound, but it has been “mined” on all sides so that only the core remains with no evidence for its original dimensions (Bandelier 1976 [1884]:228–229).

The Edificio Rojo is another large pyramidal mound, located northeast of the Great Pyramid (Noguera 1956). The southern face of this structure features a broad staircase and two levels of *talud-tablero* architecture (Figure 10). Although this pyramid was originally separate from the Great Pyramid, it was

<sup>4</sup>Bandelier (1976:230) notes that the name derives from a small chapel that was located on the summit (the foundation is still visible on the northern end of the mound), and he recorded the legend that it was here that the first mass was said in Cholula in 1519.

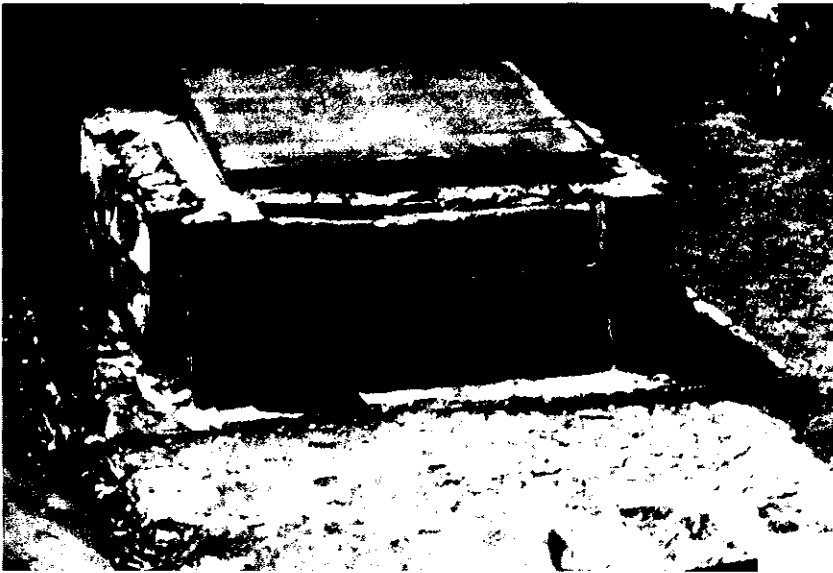


Figure 8. Altar of the Carved Skulls.



Figure 9. Great Plaza and Cerro Cocoyo west of the Great Pyramid. (Note: The motocross track has since been removed.)



Figure 10. Edificio Rojo.



**Table 2.** Correlation of ceremonial precinct with Great Pyramid construction stages

Stage	Str. 1	Str. 2	Str. 3	Str. 4	Str. 5/6	Other
						Edificio Rojo interior Conejero buildings
1A						
1B						
2A						
2B						
2C						
2D						
2E						
2F						
2G				4-A'		
3A		2-A 2-B [2]			5-A'	
					5 6	Mosaic Patio
3B			3-1			
			3-1-A	4		Bebedores mural
	1		3-2	4-A		Altar Mexica
			3-2-A	4-B		
			3-3	4-C		
				4-D		Altars 1, 2, 3
3C						
4						Altar/Carved Skulls

eventually engulfed by it, probably during Stage 4. Tunnels into the Edificio Rojo identified at least two earlier phases of construction, including one with preserved structural remains on the top (Noguera 1956).

The most extensive archaeological investigations at the ceremonial precinct have been conducted on the south side of the pyramid, including the Patio of the Altars, the Southeast Patio, and the Southwest Plaza. The Patio of the Altars is a large plaza located at the base of the south stairway of the Great Pyramid. It is arranged symmetrically along the principal north-south axis of the mound and originally measured more than 80 m in width (Acosta 1970a). The plaza is bounded on the west and east by large buildings (Structures 3 and 4, respectively), on the north by the pyramid itself, and is open to the south. A succession of at least six building episodes elevated the plaza to 9 m above the original surface.

A large staircase leads up from the patio to a platform of the pyramid. On either side of this staircase, and continuing around the patio on Structures 3 and 4 is a shallow *talud* decorated with interlaced "T"-shaped greca. This motif is representative of a "greca tradition" found in the Late Classic and Early Postclassic at sites in Oaxaca, the Gulf Coast, and in the Maya area (Sharp 1978), and are common architectural features depicted in Mixtec codices.

On the east side of the Patio of the Altars is a platform designated *Structure 4* (Acosta 1970a). A tunnel discovered the earliest phase of *Structure 4* (4A'), which differs in architectural style from the later facades in that it lacks the greca frieze. Instead, it has a high *talud* with a simple cornice decorated with large black painted squares outlined in white, in a pattern identical to that found on Stage 2G of the Great Pyramid (Acosta

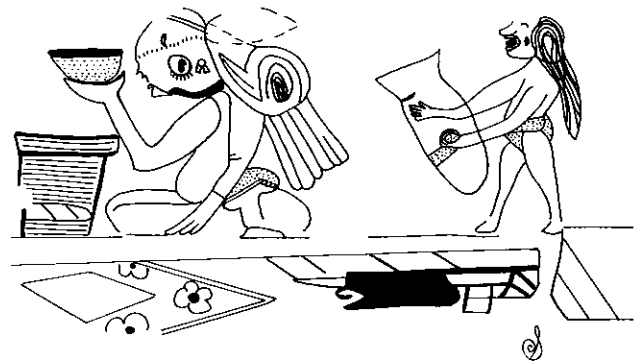
1970a:50). Polychrome murals on the *tableros* of subsequent stages of *Structure 4* depict diagonal bands and stars (Marquina 1970:lámina 2).

On the west side of the Patio of the Altars is another series of superimposed construction phases, designated *Structure 3*. The earliest phase of this structure was exposed for a distance of 60 m, and included a 12-m-wide stairway (Salazar O. 1970b:67). The facade is decorated with elaborately painted friezes of multicolored diagonal bands similar to those on *Structure 4*, and with a polychrome woven mat design (Marquina 1970:lámina 3). *Structure 3-1-A* covered this initial structure and was the first phase of *Structure 3* to use the greca motif. The facade also bore painted friezes, including the famous *Bebedores* ("drinkers") murals, discussed below. *Structure 3-2* was only partially explored; a tunnel discovered that it attached to the south face of Stage 3A of the Great Pyramid (Salazar O. 1970b:68).

The *Bebedores* mural is a long sequence of images, about 60 m in length by about 2.5 m in height, arranged on either side of a central staircase (Marquina 1971; Müller 1972). The panel features about 100 anthropomorphic characters shown drinking what is presumed to be pulque, the alcoholic drink made from fermented maguey. The figures are predominantly male, dressed simply in *maxtlal* loincloths but with headdresses, ear plugs, and occasional collars (Figure 11). The scene may represent ritualized drunkenness, and is painted in a uniquely surrealistic style (Kubler 1990:64-65; Müller 1972).

Numerous carved stone monuments were found in the Patio of the Altars. Altar 1 was found on the east side of the plaza, in front of the *Structure 4* stairway (Acosta 1970b). It consisted of fragments of carved stone that, when reconstructed, formed an upright stela (height = 3.85 m, width = 2.0 m) attached to the back of a flat altar (length = 2.89 m, width = 2.59 m, thickness = 34 cm; Figure 12). Both were decorated with carved, curvilinear volutes in a 37-cm border that framed a blank center.

Altar 2 is located directly across the patio from Altar 1 (Acosta 1970c). Although this 10-ton stone was cracked, it was found in situ about 2 m beneath the surface. Altar 2 measured 4.23 × 3.97 m, and rested on a low platform about 80 cm in height. It is decorated with a border of low relief carving on the north, east, and south edges of its top and sides. The curvilinear volutes on the upper surface are identical to those of Altar 1. On the sides, however, the pattern is a detailed representation of two serpents (Figure 13).



**Figure 11.** Detail of *Bebedores* mural showing seated individual with possible zoomorphic head (rabbit?) and smaller figure as servant.



Figure 12. Altar 1.

Excavations at the north end of the Patio of the Altars discovered another carved stone, designated Altar 3 (Contreras 1970). The large fragment was found lying with its carved face down, on top of a small platform centered in front of the stairway. This stone matched a fragment excavated in the fill behind Altar 2, even though it was found 40 m away. The two pieces

were mended, and the complete stela was placed upright on top of the small platform at the north end of the patio. The stela is decorated with a border of carved volutes around an undecorated center, in a style similar to Altars 1 and 2. Because of the original location of the base fragment, it is possible that this stela was originally paired with Altar 2 as part of an altar and stela group and a symmetrical counterpart to Altar 1 (Peterson 1987:89).

Several other stone monuments were discovered in the Patio of the Altars, including a "colossal head," a stucco-covered anthropomorphic (?) figure, and a basalt obelisk. The "head" measures over a meter in diameter, with a shallow depression on the top (Figure 14). It is notable for its thick lips and circular eyes that bear a gross resemblance to Olmec colossal heads, though it is not of comparable size, quality, or antiquity. A source for comparison that is closer both temporally and spatially is a large carved head from San Juan Diuxi in the Mixteca Alta that features round eyes, a triangular nose, and fang-like teeth that are characteristic of rain-related supernaturals throughout central Mexico (Byland and Pohl 1994:11–12, Figure 3).

The stucco-covered sculpture is difficult to identify because of the figure's contorted position, but the bent legs of the reclining figure may relate to a "chac-mool." The basalt obelisk resembles Aztec sacrificial stones, but would have been too tall unless used in association with a scaffold or platform.

Excavations to the southeast of the Patio of the Altars exposed a long building facade, designated Structure 5, running along an east-west orientation, and preserved to a height of 4.8 m in two successive *taludes* (Acosta 1970d). An earlier construction stage of this structure had *talud-tablero* architecture very similar to that of Stage 3A of the Great Pyramid (Acosta 1970d:66). The well-preserved *tablero* retained a polychrome mural of an undulating feathered serpent in red, green, yellow, and blue outlined in black.

Covering Structure 5 is yet another platform construction (Structure 6), and in front of this structure is a broad patio consisting of distinctive mosaic flagstones arranged in decorative squares (Acosta 1970d:66). The patio floor is located about 1.5 m



Figure 13. Altar 2.



Figure 14. Colossal head from Patio of the Altars.

above the sterile *tepetate* subsoil and 5.15 m below the ground surface (Müller 1970:Figure 22). This distinctive patio was extensive, with remnants found about 300 m away on the south side of the Great Pyramid. It is also exposed by erosion in the dirt road on the north side of the Edificio Rojo (about 700 m to the north) and in a dirt road about 500 m to the east.

In an attempt to relate the Patio of the Altars to the Mosaic Patio, a 6-m-wide by 60-m-long trench was dug south from the Patio of the Altars (Acosta 1970a:52). Although the trench was excavated to a depth of 6.4 m, there was no evidence of a stairway descending to the lower patio. In fact, the main feature discovered was a miniature-pyramid altar (the so-called "Altar Mexica") located at a depth of about 3 m beneath the final level of the Patio of the Altars (Figure 15). This discovery is significant because it provides a stratigraphic context that can be used to link the depositional sequence for the Patio of the Altars to the ceramic sequence. Based on architectural features and

ceramics, the "Altar Mexica" dates to the Early Postclassic period (Acosta 1970a:52), and it is stratigraphically associated with an early phase of patio construction.

The Southwest Plaza is located to the west of the Patio of the Altars (Salazar O. 1970a). The principal feature is Structure 2, a platform made up of steep *taludes* that began as a separate structure but eventually became attached to the south face of the pyramid. This area shows evidence of both monumental construction and *destruction* as earlier building phases were not only covered over but also razed during subsequent renovation. A series of Epiclassic patio groups with miniature altars later covered this plaza complex (Salazar O. 1970a:87). An elaborate burial in this area included a skeleton with distinctive physiological features (e.g., tabular oblique cranial deformation and inlaid teeth) and grave goods (e.g., greenstone beads and figurine, and shell ornaments) to suggest that this may have been a "Maya" merchant or priest (Suárez Cruz 1985).



Figure 15. "Altar Mexica" beneath Patio of the Altars.

## DISCUSSION AND CONCLUSIONS

The Great Pyramid of Cholula is among the largest and most enduring examples of monumental architecture known from the pre-Columbian world. Yet despite a long and often intense history of archaeological investigation, many fundamental questions still hamper attempts to synthesize a culture history of either the Great Pyramid or Cholula itself. The interpretations presented in this paper are intended as a preliminary step in summarizing what has been done while illuminating problem areas for future research.

The most immediate problem for reinterpreting Cholula's culture history is chronology. Previous attempts at establishing the historical sequence have depended on events from the Valley of Mexico, to the extent that phases were imported directly (Müller 1970, 1978; Noguera 1954). Unfortunately, few controlled contexts are available to seriate the ceramic sequence, and while a few absolute dates are available to calibrate the seriation, none exist from the Great Pyramid (McCafferty 1996).

Foremost among the chronological problems relating to the Great Pyramid is the question of when and to what extent it was abandoned. Suárez Cruz and Martínez A. (1993:24–26) provide the clearest statement of the traditional interpretation, and conclude that the pyramid was abandoned at the end of the Classic period, with a complete break between Classic and Postclassic ceramic traditions (Müller 1970:131). But recent excavations at the Patio of the Carved Skulls contradict this interpretation, and instead suggest a gradual transition between Classic and Postclassic material assemblages (McCafferty and Suárez Cruz 1995). Ceramics from the Patio of the Altars, particularly the "Altar Mexica," indicate extensive occupation during the Early Postclassic period.

Several additional lines of evidence converge to support an Early Postclassic time frame for construction on the south side of the pyramid. First, the Mosaic Patio was immediately below a level associated with Late Classic ceramics. Thirty-five centimeters above the mosaic surface was a layer of charcoal and ash mixed with Early Postclassic ceramics, and above that were 3 m of Postclassic deposits. In fact, analysis of stratified ceramics from the excavation unit where the Mosaic Patio was found indicated that 96% of the pottery ( $n = 8,214$ ) dates to the Postclassic or later (Müller 1970:Figure 22), and therefore represents construction fill associated with the different phases of the Patio of the Altars.

Second, an Early Postclassic plate was deposited as an offering with Burial #203 beneath Altar 2 (López Alonso et al. 1976:46–48, Table 11). Of the over 500 burials recovered from the ceremonial precinct, over 90% were Postclassic in date (López Alonso et al. 1976:24; Romero 1937).

Structure 1, located approximately 200 m south of the Patio of the Altars, featured Early Postclassic ceramics and was covered by later plaza construction (Matos Moctezuma and López V. 1967). The "Altar Mexica" is similar in form to the Altar of the Carved Skulls associated with Stage 4 of the Great Pyramid, and also to pyramid altars from the Southwest Plaza.

Based on the information available through published sources, personal observations, and recent investigations, the ceremonial precinct has been continuously utilized for nearly 2,500 years, including its current use as an important religious shrine and pilgrimage site (Olivera de V. 1970). The earliest evidence for occupation comes from small structures that were

later covered over by the Great Pyramid (Müller 1973; Noguera 1956), but that were built during the Late Formative period. Construction of initial stages of the Great Pyramid occurred in the Terminal Formative period, with both architectural similarities and contrasts to Teotihuacan styles. There were four major construction stages as the Great Pyramid grew in size and transformed in orientation, function, and meaning. Associations with nearby mounds and plazas hint at ritual practice, while new construction, modification, and wholesale destruction of earlier structures made the ceremonial center a complex and dynamic landscape.

Active construction programs at the Great Pyramid continued into the Early Postclassic period, at which time the focus of Cholula's ceremonial activities shifted to the northwest, where a new ceremonial center was established, probably by newly arrived Tolteca-Chichimeca. This partial abandonment may have included intentional destruction of the final phase of the Patio of the Altars, where the stelae were thrown down and shattered either as the result of ethnic hostilities or perhaps as termination rituals. The unfinished facade of Stage 4 may be the result of an interruption in the building process, or the stripping away of the valuable stone facing for subsequent construction. Although the mound became covered with vegetation, it remained an important shrine through the Late Postclassic period (Rojas 1927 [1581]). Following the Spanish Conquest, the mound became associated with the Virgin of the Remedies, and today the Great Pyramid is the focus of religious activities during the annual fair, when as many as 350,000 pilgrims visit the church atop the Pyramid (Olivera de V. 1970:231).

This reinterpretation differs markedly from that proposed by investigators associated with the Proyecto Cholula (Dumond and Müller 1972; Marquina 1975; Müller 1978), and repeated in recent culture-historical syntheses (Adams 1991; Suárez Cruz and Martínez A. 1993; Weaver 1993). It is, however, more in line with the earlier cultural reconstructions proposed as a result of the initial phase of investigations (Marquina 1951; Noguera 1954).

How, then, does this revision of the archaeological record fit with the ethnohistorical accounts of Cholula? Ethnohistoric documents describe a series of ethnic migrations into Cholula, including the arrival of the Tolteca-Chichimeca in A.D. 1168 (Chadwick 1971; Davies 1977; *Historia Tolteca-Chichimeca* 1976 [1547–1560]; but see Jiménez Moreno 1966). The Toltecs were ethnic Nahuas from northern Mesoamerica, who dispersed after the fall of their capital at Tula. According to legend, they followed their ruler, Topiltzin-Quetzalcoatl, to Cholula on his way to the Gulf Coast. When the Tolteca-Chichimeca arrived in Cholula it was a great city dominated by the Olmeca-Xicallanca (Ixtilxochitl 1975–1977 [1625]:1:529–530), an ethnic group with ties to the southern Gulf Coast (McVicker 1985). The ceremonial center of Cholula was synonymous with the Great Pyramid; Tollan Cholollan Tlachihualtepetl was "Cholula, city of the man-made mountain." The Tolteca-Chichimeca overthrew the Olmeca-Xicallanca and established their own center of political and religious authority in what is now San Pedro Cholula, while the original population continued to live in what is now San Andrés Cholula (Olivera de V. and Reyes 1969; also Carrasco 1971). A new pyramid dedicated to Quetzalcoatl was built in the square (Rojas 1927 [1581]), and the cult of Quetzalcoatl became one of the most influential religious organizations in Mesoamerica.

Other accounts, even more steeped in myth, relate the earlier arrival of the Olmeca-Xicallanca in Cholula at the end of the Classic period (Ixtilxochitl 1975–1977 [1625]:1:529–530). This was after the age of the *quinametin*, or giants, who are generally associated with the builders of Teotihuacan (Davies 1977:46). There were still *quinametin* living in the Cholula area, and it was only after they were killed that the Olmeca-Xicallanca were able to build the Great Pyramid. They were led by their priest Quetzalcoatl-Huemac, who taught a religious doctrine of penitence. According to the legend, the world was destroyed at the end of this age, and survivors venerated Quetzalcoatl as the god of wind, building a new pyramid in his honor.

Extracting history from myth is a precarious undertaking, but several themes are consistent in these two legends. First, Cholula was the scene of successive ethnic “invasions,” involving first the Olmeca-Xicallanca, and then the Tolteca-Chichimeca. Second, the respective pyramids were important symbols of these ethnic polities. The Spanish understood this symbolic significance when they demolished the Pyramid of Quetzalcoatl and replaced it with the San Gabriel cathedral. But since the true nature of the Great Pyramid was disguised beneath vegetation, it was allowed to remain standing. The Colonial strategy failed when the Great Pyramid regained its importance as the focus of transformed religious rituals and the annual pilgrimage.

The distinct ethnic identities can be found in the different stages of the Great Pyramid. Strong affinities with Teotihuacan are apparent in Stages 1–3. Changes in the orientation of the ceremonial precinct, architectural elements, and material culture indicate larger cultural changes in the Epiclassic period that may relate to the arrival of the Olmeca-Xicallanca. In contrast to the ethnohistorical accounts, however, recent investigations at the elite residential compound surrounding the Patio of the Carved Skulls indicates that this transition may have been gradual, with new elements added to the existing Classic artifact assemblage (McCafferty and Suárez Cruz 1995). The arrival of the Tolteca-Chichimeca at the end of the Early Postclassic probably corresponds to the destruction and abandonment of the Great Pyramid.

What does the archaeology of the Great Pyramid contribute to identifying cultural interaction? The first major stages of construction probably took place during the Terminal Formative period, when Cholula was a contemporary of Teotihuacan. Architecturally, the pyramid builders occasionally shared stylistic elements with the Valley of Mexico center, but often they used distinctive styles (e.g., Stage 2A). If style is considered a form of visual communication (Conkey 1990), this might be interpreted as a sequence of shifting statements of affinity in which Cholula fluctuated in terms of political and ideological autonomy (cf. Nagao 1989). The R-106 household provides material evidence for cultural interaction on the domestic level in the Middle Classic period, where similarities in ceramics and figurines indicate stylistic similarities with Teotihuacan, though mortuary practices and the architectural orientation were clearly distinct (McCafferty and Suárez Cruz 1994).

By the Late Classic period, however, the geopolitical orientation of the Great Pyramid changed to reflect greater contact with the Gulf Coast, especially with the site of El Tajín. The use of black painted rectangles on Stage 2G has resulted in the nickname “Edificio Totonaco,” in reference to the Pyramid of the Niches at El Tajín (Marquina 1970:41). Gulf Coast influences are most pronounced in the Patio of the Altars, particu-

larly in the use of curvilinear borders on the altar and stela groups (Acosta 1970b, 1970c), and miniature pyramid altars as tombs (Izquierdo 1986). Ceramics and hollow figurines found in association with the pyramid altars also indicate Gulf Coast contact (López Alonso et al. 1976:Figure 54), as does the elaborate burial featuring Maya-style cranial and dental mutilation (Suárez Cruz 1985).

The archaeological evidence for Gulf Coast presence in Cholula therefore supports ethnohistoric accounts of occupation by the Olmeca-Xicallanca (*Historia Tolteca-Chichimeca* 1976 [1547–1560]; Ixtilxochitl 1975–1977 [1625], Book 1:530–531). The dramatic polychrome murals found at the nearby site of Cacaxtla provide additional evidence for this ethnic presence (McCafferty and McCafferty 1994; McVicker 1985; Quirarte 1983). The murals combine a variety of regional styles in what Kubler (1980) has described as an eclectic synthesis most similar to that of the Gulf Coast Maya. Cacaxtla was identified as an Olmeca-Xicallanca stronghold by Muñoz Camargo (1948:37, in Abascal et al. 1976) in a sixteenth-century account.

The later architectural stages of the Great Pyramid featured symbolic elements that also appear as architectural motifs in the Mixtec codexes, including woven mat motifs, polychrome diagonal bands, and greca friezes. Shared systems of symbolic communication among Puebla, northern Oaxaca, and the Gulf Coast are fundamental elements of the Mixteca-Puebla stylistic tradition (McCafferty 1994; Nicholson 1960, 1982; Smith and Heath-Smith 1980). During the Early Postclassic period decorated ceramics begin to show evidence of the development of techniques and design motifs relating to the Mixteca-Puebla polychrome tradition. The appearance of Mixteca-Puebla glyphic elements at the Great Pyramid during the Early Postclassic period supports the possibility that Cholula played an important role in the development of the style (McCafferty 1994; Nicholson 1982).

The question of the religious meanings associated with the Great Pyramid is even more problematic, although this was undoubtedly a dynamic characteristic, changing over time. The symbolic significance of the initial stages of the pyramid remain ambiguous, although the cosmo-calendrical aspects of Stage 2A may relate to ritual control over time and creation, as at the Temple of the Feathered Serpent at Teotihuacan (López Austin et al. 1991). The placement of the Great Pyramid over a spring may imply control over terrestrial waters, another parallel to the iconography of the Temple of the Feathered Serpent. Feathered serpents were represented at the Great Pyramid during the Epiclassic and Early Postclassic periods through stylistic elements such as the polychrome mural on Structure 5A', a large balustrade keystone in the shape of a serpent, and the carved serpents on Altar 2. The association of Quetzalcoatl with Postclassic Cholula is clearly established in ethnohistorical accounts (Durán 1971 [1576–1579]:133; Rojas 1927 [1581]:160–161; Torquemada 1975–1983 [1615]:1:387), as well as iconographically on Cholula polychrome ceramics.

The orientation of the Great Pyramid (24–26°) toward the setting sun at the summer solstice suggests another dimension of the symbolic landscape. Since the Pyramid is the highest point on the local horizon, a temple on top of the mound would be the last spot illuminated by the dying sun. Further evidence appears in Durán's (1971 [1576–1579]:259) description of the Great Pyramid in relation to mountain worship, where he records that the Pyramid was used to ascend to a level from which

to pray to the “Lord of Created Things,” that is, the solar deity Tonacatecuhtli. This practice compares well with the traditional association of the Great Pyramid as the “Tower of Babel” (Durán 1971 [1576–1579]:257; Torquemada 1975–1983 [1615]:1:386), and that still exists in oral tradition. According to Motolinía (1951 [1540]:138), “The plan was to make [the Great Pyramid] higher than the highest mountain . . . [but] God confounded them, as He did those who built the Tower of Babel, by allowing a huge stone in the shape of a toad to fall during a terrible tempest that hit that place.” It also provides a conceptual link with the Aztec *axis mundi* of Coatepec, the serpent hill that acted as a portal connecting the mortal world with supernatural realms (Gillespie 1989:87; Heyden 1981). As David Carrasco (1982:135) explains: “The [Great P]yramid was believed to be the opening to celestial forces as well as the covering over the primordial waters of the underworld.”

The Great Pyramid was identified in the *Historia Tolteca-Chichimeca* (1976 [1547–1560]:9v–10r, 14r) by seven flowers on the side of the mound. It is also identified by the glyph 7 Flower on Map 2 of the *Mapas de Cuauhtinchan* (Simons 1968b:65–66, lámina 4). Seven Flower was the calendrical name for the Mixtec solar deity analogous to Tonacatecuhtli and Xochipilli, who was associated with artisans (Furst 1978:164). Lord 7 Flower was also depicted as a prominent participant in a pulque ceremony in the *Codex Vindobonensis* (Furst 1978:202–203), and therefore may be linked to rituals illustrated in the Bebedores murals (Müller 1972).

After the ceremonial center shifted to the new Pyramid of Quetzalcoatl, the Great Pyramid became a shrine for 9 Rain Chiconauquiahuitl (Rojas 1927 [1581]:162–163). Children between 6 and 10 years of age were sacrificed on an altar atop the Pyramid to bring on the rain, and annual “fiestas” were held there. In the Mixtec pantheon, 9 Rain was the calendrical name for the female consort of the Rain God, equivalent to the Aztec Chalchiutlicue, goddess of earthly waters (Caso 1979:426). Veytia (in Simons 1968b:29) recorded a legend that a temple dedicated to a frog deity identified as the “Goddess of Rain” was built at Cholula. In this light, the colossal head from the Patio of the Altars may have been an altar in the form of a rain deity,

perhaps even an anthropomorphized frog. The image of a frog on top of the Great Pyramid in the *Historia Tolteca-Chichimeca* may therefore refer to Chiconauquiahuitl, while the colossal frog altar may be the stone described by Motolinía (1951 [1540]:138) in his Tower of Babel story.

With the Spanish Conquest, the Great Pyramid was transformed into a base for the shrine of the Virgin of the Remedies, now one of the major pilgrimages of Mexico. This “virgin” was a European icon carried by the Spanish conquistadors, in contrast to the more indigenous Virgin of Guadalupe. Yet the Virgin of the Remedies was quickly adopted into more traditional practices, with icons of the virgin emerging from a maguey plant (Durán 1971:230, note 2). This image parallels the Aztec goddess Mayahuel who was often depicted emerging from the maguey plant as the embodiment of female productivity (Sullivan 1982). As the deity associated with pulque rituals, Mayahuel may also relate to themes embedded in the Bebedores murals.

The Great Pyramid of Cholula is a complex conglomeration of architectural facades and symbolic meanings. By sorting out the archaeological features of the Pyramid it has been possible to reinterpret the construction history of the ceremonial precinct, and thereby revise the cultural sequence for Cholula. Reinterpreting the construction sequence enables consideration of the religious meanings and cultural identities associated with the Pyramid at different stages of its history.

The interpretations presented can best be considered a tentative framework awaiting additional research to fill in important gaps and clarify ambiguities. Future excavations at the Great Pyramid and the ceremonial precinct, as well as within the urban zone of Cholula, will add many significant details and necessitate subsequent revisions. The goal of this reinterpretation has been to summarize and synthesize the scattered information on the ceremonial center to facilitate further investigations. The rapid urban development of Cholula includes immediate threats to the ceremonial precinct despite ongoing attempts to preserve the archaeological zone, underscoring the urgent need for additional research.

## RESUMEN

La Pirámide Mayor de Cholula es la más grande de Mesoamérica y continúa siendo un sitio religioso muy importante desde su fundación hace 2,500 años. Pero a pesar de más de un siglo de exploraciones arqueológicas, varios problemas fundamentales continúan existiendo en relación a su historia de construcción, funciones religiosas y contextos culturales. Contradicciones entre las interpretaciones arqueológicas y etnohistóricas del montículo han aumentado la confusión sobre la historia cultural de Cholula, y como consecuencia el sitio casi ha desaparecido de las síntesis generales de Mesoamérica. Este artículo reúne información publicada e inédita sobre la Pirámide Mayor para reinterpretar la secuencia de construcción y el significado del *tlachihualtepetl*, o “montaña hecho a mano.”

Los primeros exploradores describieron la Pirámide en el siglo XIX; excavaciones científicas continuaron desde 1930 hasta el presente. Fuentes etnohistóricas de la época colonial describen una serie de “invasiones” étnicas prehispánicas en Cholula, primero por los Olmecas-Xicalancas, y después por los Toltecas-Chichimecas. La evidencia arqueológica del Proyecto Cholula fue interpretada como indicación de un abandono del centro ceremonial correspondiente al “colapso” al fin del período clásico. Sin embargo, en la presente reinterpretación de la

historia de construcción, la transición clásico–postclásico fue gradual, sin abandono de la Pirámide Mayor hasta fines del postclásico temprano.

La Pirámide Mayor fue construida en cuatro etapas mayores, más nueve modificaciones menores. La fase inicial de construcción ocurrió en el preclásico terminal con Etapa 1A, con medidas de 120 m por lado y 17 m de alto. Esta estructura fue cubierta por Etapa 2A, aumentando a 180 m por lado y con nueve niveles de escaleras en cada fachada. La Etapa 3A probablemente fue la última etapa mayor completada, aunque tiene dos modificaciones (3B y 3C) en el lado oeste. La Pirámide expandió a 350 m por lado, con una altura de 66 m; las fachadas son de estilo talud–tablero muy parecido a la arquitectura teotihuacana. Una etapa final, Etapa 4, cubrió esta estructura previa con bloques de adobe, pero no se encontró ninguna fachada, posiblemente porque esta etapa nunca se terminó de construir, ó porque fue desarmada para reusar las piedras en construcción subsiguiente. La etapa final es del postclásico temprano, y corresponde también con un conjunto residencial en la plataforma noreste de la Pirámide Mayor.

El recinto ceremonial que rodea la Pirámide incluye varias otras pirámides, además de complejos de patios con plataformas, murales, y monumentos grabados. Pirámides al norte y al oeste indican plazuelas,

aunque muy poca investigación se ha llevado a cabo en estos lugares. La mayoría de exploración ocurrió al sur de la Pirámide Mayor, especialmente en el Patio de los Altares, donde un serie de estelas y altares grabados están asociados con depósitos del postclásico temprano.

La iconografía de la arquitectura, murales, y monumentos grabados indica una secuencia de transformaciones en afiliación política y/o étnica, con etapas tempranas mostrando semejanzas estilísticas con Teotihuacán, mientras que las etapas más tardías tienen razgos del Golfo, como por ejemplo El Tajín. Este modelo, que también ocurrió en la cerámica y las figurillas, corresponde bien con descripciones etnohistóricas de la dominación de Cholula por los Olmecas-Xicalancas en el postclásico temprano.

Los temas religiosos de la Pirámide Mayor son más complicados e incluyen elementos simbólicos del culto solar, lluvia/agua terrestre, pulque, y la serpiente emplumada. La Pirámide Mayor está orientada hacia el poniente en el solsticio de verano (24–26° al norte del oeste), y los glifos caléndricos y documentos etnohistóricos relacionan la Pirámide con dioses solares como 7 Flor (Mixteco) y Tonacatecutli (Mexica). La Pirámide está construida sobre un manantial que todavía fue ilustrado en representaciones coloniales cuando la cima del montículo estuvo

asociado con la diosa de la lluvia Chiconauhquiuhuitl. El mural llamado "Los Bebedores" ilustra una ceremonia de más de 100 individuos en estado de embriaguez ritual probablemente con pulque; el tema del pulque continua con la imagen de la Virgen de los Remedios (patrona de la iglesia cristiana encima de la Pirámide), quien está representada saliendo de un maguay de manera casi idéntica a las ilustraciones precolombinas de Mayahuel, diosa de maguay y pulque. Finalmente, varios monumentos grabados y un mural representan serpientes emplumadas, que en el postclásico fueron caracterizadas como Quetzalcoatl, el dios patrón de Cholula.

La Pirámide Mayor de Cholula es una de las estructuras religiosas más importantes de la Mesoamérica antigua. Este análisis de la arqueología, etnohistoria e iconografía ha reinterpretado la historia de construcción y significado simbólico de la Pirámide. El proceso de reinterpretación no está completo; en cambio, la necesidad de investigaciones adicionales es urgente, particularmente en los lugares donde la zona arqueológica está en peligro de desarrollo urbano en Cholula. Cholula debe ser reconocida como uno de los sitios claves de Mesoamérica, y debe ser reintegrada en los síntesis generales de su evolución cultural.

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## REFERENCES

- Abascal, Rafael, Patricio Dávila, Peter J. Schmidt, and Diana de Dávila  
1976 La arqueología de sur-oeste de Tlaxcala, primera parte. *Comunicaciones*, Suplemento 2. Fundación Alemana para la Investigación Científica, Proyecto Puebla-Tlaxcala, Puebla, Mexico.
- Acosta, Jorge R.  
1970a Sección 3. In *Proyecto Cholula*, edited by Ignacio Marquina, pp. 47–56. Serie Investigaciones No. 19. Instituto Nacional de Antropología e Historia, Mexico.  
1970b El Altar 1. In *Proyecto Cholula*, edited by Ignacio Marquina, pp. 93–102. Serie Investigaciones No. 19. Instituto Nacional de Antropología e Historia, Mexico.  
1970c El Altar 2. In *Proyecto Cholula*, edited by Ignacio Marquina, pp. 103–110. Serie Investigaciones No. 19. Instituto Nacional de Antropología e Historia, Mexico.  
1970d Patio Sureste. In *Proyecto Cholula*, edited by Ignacio Marquina, pp. 57–66. Serie Investigaciones No. 19. Instituto Nacional de Antropología e Historia, Mexico.
- Adams, Richard E.W.  
1991 *Prehistoric Mesoamerica*. University of Oklahoma Press, Norman.
- Bandelier, Adolph E.  
1976 [1884] *Report of an Archaeological Tour in Mexico, in 1881*. AMS Press, New York.
- Baravalle, Richard, and Thomas R. Wheaton  
1974 *Preliminary Site Report: UA-73F Fall and Winter Seasons, 1973-4*. Universidad de las Américas, Cholula, Mexico. Submitted to Departamento de Monumentos Prehispánicos, Instituto Nacional de Antropología e Historia, Mexico.
- Bonfil Batalla, Guillermo  
1973 *Cholula: La ciudad sagrada en la era industrial*. Instituto de Investigaciones Históricas, Universidad Nacional Autónoma de México, Mexico.
- Byland, Bruce E., and John M.D. Pohl  
1994 *In the Realm of 8 Deer: The Archaeology of the Mixtec Codices*. University of Oklahoma Press, Norman.
- Carrasco, David  
1982 *Quetzalcoatl and the Irony of Empire: Myths and Prophecies of the Aztec Tradition*. University of Chicago Press, Chicago.
- Carrasco, Pedro  
1971 Los barrios antiguos de Cholula. *Estudios y documentos de la región de Puebla-Tlaxcala* III:9–87. Instituto Poblano de Antropología e Historia, Puebla, Mexico.
- Caskey, Charles R.  
1988 *Two Archaeological Discoveries at Cholula, Puebla, Mexico*. Unpublished Master's thesis, Department of Anthropology, Universidad de las Américas, Cholula, Mexico.
- Caso, Alfonso  
1979 *Reyes y Reinos de la Mixteca, vol. II: Diccionario Biográfico de los Señores Mixtecos*. Fondo de Cultura Económica, Mexico.
- Chadwick, Robert  
1971 Native Pre-Aztec History of Central Mexico. In *Archaeology of Northern Mesoamerica*, pt. 2, edited by Gordon F. Ekholm and Ignacio Bernal, pp. 474–504. Handbook of Middle American Indians, vol. 11, Robert Wauchope, general editor. University of Texas Press, Austin.
- Charnay, Desiré  
1887 *The Ancient Cities of the New World; Being Voyages and Explorations in Mexico and Central America from 1857–1882*. Translated by J. Gonino and H.S. Conant. New York.
- Codex Nuttall  
1975 *The Codex Nuttall. A Picture Manuscript from Ancient Mexico*. The Peabody Museum Facsimile, edited by Zelia Nuttall. Introduction by Arthur G. Miller. Dover Publications, New York.
- Conkey, Margaret W.  
1990 Experimenting with Style in Archaeology: Some Historical and

- Theoretical Issues. In *The Uses of Style in Archaeology*, edited by Margaret W. Conkey and Christine A. Hastorf, pp. 5-18. Cambridge University Press, Cambridge.
- Contreras, Eduardo  
1970 El Altar 3. In *Proyecto Cholula*, edited by Ignacio Marquina, pp. 111-118. Serie Investigaciones No. 19. Instituto Nacional de Antropología e Historia, Mexico.
- Cortés, Hernán  
1986 [1519-1521] *Letters from Mexico*. Translated and edited by Anthony Pagden. Yale University Press, New Haven, CT.
- Davies, Nigel  
1977 *The Toltecs, Until the Fall of Tula*. University of Oklahoma Press, Norman.
- Díaz del Castillo, Bernal  
1963 [1580] *The Conquest of New Spain*. Translated by J.M. Cohen. Penguin Books, Harmondsworth, England.
- Dumond, Don  
1972 Demographic Aspects of the Classic Period in Puebla/Tlaxcala. *Southwestern Journal of Anthropology* 28:101-130.
- Dumond, Don, and Florencia Müller  
1972 Classic to Post-Classic in Highland Central Mexico. *Science* 175:1208-1215.
- Durán, Diego  
1971 [1576-1579] *The Book of the Gods and Rites and the Ancient Calendar*. Translated and edited by Fernando Horcasitas and Doris Heyden. University of Oklahoma Press, Norman.
- Fajardo, Carmen  
1985 *Análisis de tres basureros del sitio arqueológico de Cholula*. Unpublished Licenciatura thesis. Escuela Nacional de Antropología e Historia, Mexico.
- Fash, William L.  
1991 *Scribes, Warriors and Kings: The City of Copán and the Ancient Maya*. Thames and Hudson, New York.
- Furst, Jill Leslie  
1978 *Codex Vindobonensis Mexicanus I: A Commentary*. Publication No. 4. Institute for Mesoamerican Studies, State University of New York, Albany.
- Gendrop, Paul  
1984 El tablero-talud en la arquitectura mesoamericana. *Cuadernos de Arquitectura Mesoamericana* 2:5-28. Universidad Nacional Autónoma de México, Mexico.
- Gillespie, Susan D.  
1989 *The Aztec Kings: The Construction of Rulership in Mexica History*. University of Arizona Press, Tucson.
- Heyden, Doris  
1981 Caves, Gods, and Myths: World-View and Planning in Teotihuacan. In *Mesoamerican Sites and World Views*, edited by Elizabeth P. Benson, pp. 1-40. *Dumbarton Oaks Research Library and Collection*, Washington, DC.
- Historia Tolteca-Chichimeca*  
1976 [1547-1560] *Historia Tolteca-Chichimeca*. Edited and translated by Paul Kirchhoff, Lina Odena Güemes, and Luis Reyes García. Instituto Nacional de Antropología e Historia, Mexico.
- Ixtlilxochitl, Fernando de Alva  
1975-1977 [1625] *Obras históricas*. 2 vols. Edited and with an introduction by Edmundo O'Gorman. Instituto de Investigaciones Históricas, Universidad Nacional Autónoma de México, Mexico.
- Izquierdo, Ana Luisa  
1986 La arquitectura funeraria de Quiahuiztlan. *Cuadernos de Arquitectura Mesoamericana* 8:3-23. Universidad Nacional Autónoma de México, Mexico.
- Jiménez Moreno, Wigberto  
1966 Mesoamerica Before the Toltecs. Translated by Maudie Bullington and Charles R. Wicke. In *Ancient Oaxaca: Discoveries in Mexican Archeology and History*, edited by John Paddock, pp. 3-82. Stanford University Press, Stanford, CA.
- Kubler, George  
1980 Eclecticism at Cacaxtla. In *Third Palenque Round Table, 1978*, pt. 2, edited by Merle Greene Robertson, pp. 163-172. University of Texas Press, Austin.  
1990 *The Art and Architecture of Ancient America*. 3rd ed. Yale University Press, New Haven, CT.
- Lienzo de Tlaxcala*  
1979 [1550-1564] *El lienzo de Tlaxcala*. Commentary by Alfredo Chavero, 1892. Editorial Cosmos, Mexico.
- Lind, Michael  
1995 The Obverse of the Codex of Cholula: Defining the Settlement System in the Kingdom of Cholula. Paper presented at the 60th Annual Meeting of the Society for American Archaeology, Minneapolis.
- López Alonso, Sergio, Zaid Lagunas Rodríguez, and Carlos Serrano Sánchez  
1976 *Enterramientos humanos de la Zona Arqueológica de Cholula, Puebla*. Colección Científica No. 44. Departamento de Antropología Física, Secretaría de Educación Pública and Instituto Nacional de Antropología e Historia, Mexico.
- López Austin, Alfredo, Leonardo López Luján, and Saburo Sugiyama  
1991 The Temple of Quetzalcoatl at Teotihuacan: Its Possible Ideological Significance. *Ancient Mesoamerica* 2:93-106.
- McCafferty, Geoffrey G.  
1984 *A Middle Formative Feature in San Andrés Cholula, Puebla*. Report submitted to Centro Regional de Puebla, Instituto Nacional de Antropología e Historia, Puebla, Mexico.  
1992 *The Material Culture of Postclassic Cholula, Mexico: Contextual Analysis of the UA-1 Domestic Compounds*. Unpublished Ph.D. dissertation, Department of Anthropology, State University of New York, Binghamton, NY.  
1994 The Mixteca-Puebla Stylistic Tradition at Early Postclassic Cholula. In *Mixteca-Puebla: Discoveries and Research in Mesoamerican Art and Archaeology*, edited by H.B. Nicholson and Eloise Quiñones Keber, pp. 53-78. Labyrinthos Press, Culver City, CA.  
1996 Of Time and Potsherds: Rethinking Cholula Culture History. *Ancient Mesoamerica*, in press.
- McCafferty, Geoffrey G., and Sergio Suárez Cruz  
1994 Cholula and Teotihuacan in the Middle Classic Period: Recent Investigations at the Transito Site (R106). Paper presented at the 59th Annual Meeting of the Society for American Archaeology, Anaheim.  
1995 The Classic/Postclassic Transition at Cholula: Recent Investigations at the Great Pyramid. Paper presented at the 60th Annual Meeting of the Society for American Archaeology, Minneapolis.
- McCafferty, Sharisse D., and Geoffrey G. McCafferty  
1994 The Conquered Women of Cacaxtla: Gender Identity or Gender Ideology? *Ancient Mesoamerica* 5:159-172.
- McVicker, Donald  
1985 The "Mayanized" Mexicans. *American Antiquity* 50:82-101.
- Margain, Carlos R.  
1971 Pre-Columbian Architecture of Central Mexico. In *Archaeology of Northern Mesoamerica*, pt. 1, edited by Gordon F. Ekholm and Ignacio Bernal, pp. 45-91. *Handbook of Middle American Indians*, vol. 10, Robert Wauchope, general editor. University of Texas Press, Austin.
- Marquina, Ignacio  
1939 Exploraciones en la Pirámide de Cholula, Pue. In *27th Congreso Internacional de Americanistas*, tomo II.1. Secretaría de Educación Pública and Instituto Nacional de Antropología e Historia, Mexico.  
1951 *Arquitectura prehispánica*. Memorias del Instituto Nacional de Antropología e Historia No. 1. Secretaría de Educación Pública and Instituto Nacional de Antropología e Historia, Mexico.  
1970 Pirámide de Cholula. In *Proyecto Cholula*, edited by Ignacio Marquina, pp. 31-46. Serie Investigaciones No. 19. Instituto Nacional de Antropología e Historia, Mexico.  
1971 La pintura en Cholula. In *Artes de México*, No. 140. Mexico.  
1975 Cholula, Puebla. In *Los pueblos y señoríos teocráticos: El período de las ciudades urbanas*, primera parte, by Eduardo Matos Moctezuma et al., pp. 109-122. Departamento de Investigaciones Históricas, Secretaría de Educación Pública and Instituto Nacional de Antropología e Historia, Mexico.
- Marquina, Ignacio (editor)  
1970 *Proyecto Cholula*. Serie Investigaciones No. 19. Instituto Nacional de Antropología e Historia, Mexico.
- Matos Moctezuma, Eduardo, and Pablo López V.  
1967 El Edificio No. 1 de Cholula. In *Cholula, reporte preliminar*, edited by Miguel Messmacher, pp. 39-43. Editorial Nueva Antropología, Mexico.
- Messmacher, Miguel (editor)  
1967 *Cholula, reporte preliminar*. Editorial Nueva Antropología, Mexico.



- Millon, René  
1988 The Last Years of Teotihuacan Dominance. In *The Collapse of Ancient States and Civilizations*, edited by Norman Yoffee and George L. Cowgill, pp. 102-164. University of Arizona Press, Tucson.
- Motolinía, Fray Toribio de Benavente  
1951 [1540] *History of the Indians of New Spain*. Translated by F.B. Steck. Academy of American Franciscan History, Washington, DC.
- Mountjoy, Joseph  
1987 The Collapse of the Classic at Cholula as Seen from Cerro Zapotecas. *Notas Mesoamericanas* 10:119-151. Universidad de las Américas, Santa Catarina Martir, Puebla, Mexico.
- Mountjoy, Joseph, and David A. Peterson  
1973 *Man and Land in Prehispanic Cholula*. Publications in Anthropology No. 4. Vanderbilt University, Nashville, TN.
- Müller, Florencia  
1970 La cerámica de Cholula. In *Proyecto Cholula*, edited by Ignacio Marquina, pp. 129-142. Serie Investigaciones No. 19. Instituto Nacional de Antropología e Historia, Mexico.
- 1972 Estudio iconográfico del Mural de los Bebedores, Cholula, Puebla. In *Religión en Mesoamérica*, edited by Jaime Litvak King and Noemi Castillo Tejero, pp. 141-146. Sociedad Mexicana de Antropología, Mexico.
- 1973 La extensión arqueológica de Cholula a través del tiempo. *Comunicaciones* 8:19-22. Fundación Alemana para la Investigación Científica, Proyecto Puebla-Tlaxcala, Puebla, Mexico.
- 1978 *La alfarería de Cholula*. Serie Arqueología. Instituto Nacional de Antropología e Historia, Mexico.
- Muñoz Camargo, Diego  
1948 *Historia de Tlaxcala*. 6th ed. Mexico.
- Nagao, Debra  
1989 Public Proclamation in the Art of Cacaxtla and Xochicalco. In *Mesoamerica After the Decline of Teotihuacan*, A.D. 700-900, edited by Richard A. Diehl and Janet Catherine Berlo, pp. 83-104. Dumbarton Oaks Research Library and Collection, Washington, DC.
- Nicholson, Henry B.  
1960 The Mixteca-Puebla Concept in Mesoamerican Archaeology: A Re-Examination. In *Men and Cultures: Selected Papers from the Fifth International Congress of Anthropological and Ethnological Sciences, Philadelphia, September 1-9, 1956*, edited by Anthony F.C. Wallace, pp. 612-617. University of Pennsylvania, Philadelphia, PA.
- 1982 The Mixteca-Puebla Concept Re-visited. In *The Art and Iconography of Late Post-Classical Central Mexico*, edited by Elizabeth H. Boone, pp. 227-254. Dumbarton Oaks Research Library and Collection, Washington, DC.
- Noguera, Eduardo  
1937 *El altar de los cráneos esculpidos de Cholula*. Talleres Gráficos de la Nación, Mexico.
- 1954 *La cerámica arqueológica de Cholula*. Editorial Guaranía, Mexico.
- 1956 Un edificio preclásico en Cholula. In *Estudios antropológicos publicados en homenaje al Dr. Manuel Gamio*, pp. 213-224. Universidad Nacional Autónoma de México, Mexico.
- Olivera de V., Mercedes  
1970 La importancia religiosa de Cholula. In *Proyecto Cholula*, edited by Ignacio Marquina, pp. 211-242. Serie Investigaciones No. 19. Instituto Nacional de Antropología e Historia, Mexico.
- Olivera de V., Mercedes, and Cayetano Reyes  
1969 Los choloques y los cholultecas: Apuntes sobre las relaciones étnicas en Cholula hasta el Siglo XVI. *Anales del Instituto Nacional de Antropología e Historia* época 7, 1 (1967-1968):247-274, Mexico.
- Paddock, John  
1987 Cholula en Mesoamérica. *Notas Mesoamericanas* 10:21-70. Universidad de las Américas, Santa Catarina Martir, Puebla, Mexico.
- Peterson, David A.  
1987 The Real Cholula. *Notas Mesoamericanas* 10:71-118. Universidad de las Américas, Santa Catarina Martir, Puebla, Mexico.
- Peterson, David A., and Z.D. Green  
1987 The Spanish Arrival and the Massacre at Cholula. *Notas Mesoamericanas* 10:203-220. Universidad de las Américas, Santa Catarina Martir, Puebla, Mexico.
- Pineda, Juan de  
1970 [1593] Carta al rey sobre la ciudad de Cholula en 1593. Edited by Pedro Carrasco. *Tlalocan* VI:176-192.
- Quirarte, Jacinto  
1983 Outside influence at Cacaxtla. In *Highland-Lowland Interaction in Mesoamerica: Interdisciplinary Approaches*, edited by Arthur G. Miller, pp. 201-221. Dumbarton Oaks Research Library and Collection, Washington, DC.
- Rojas, Gabriel de  
1927 [1581] Descripción de Cholula. *Revista Mexicana de Estudios Históricos* 1(6):158-170.
- Romero, Javier  
1937 Estudio de los enterramientos de la pirámide de Cholula. *Anales del Museo Nacional de México* época 5a, 2:5-36. Mexico.
- Sahagún, Bernardino de  
1950-1982 [1547-1585] *Florentine Codex: General History of the Things of New Spain*, 13 volumes. Edited and translated by Arthur J.D. Anderson and Charles E. Dibble. University of Utah Press, Salt Lake City, and School of American Research, Santa Fe.
- Salazar O., Ponciano  
1970a Gran Plaza suroeste. In *Proyecto Cholula*, edited by Ignacio Marquina, pp. 71-88. Serie Investigaciones No. 19. Instituto Nacional de Antropología e Historia, Mexico.
- 1970b Lado oeste. In *Proyecto Cholula*, edited by Ignacio Marquina, pp. 67-70. Serie Investigaciones No. 19. Instituto Nacional de Antropología e Historia, Mexico.
- Sanders, William T.  
1971 Settlement Patterns in Central Mexico. In *Archaeology of Northern Mesoamerica*, pt. 1, edited by Gordon F. Ekholm and Ignacio Bernal, pp. 3-44. Handbook of Middle American Indians, vol. 10, Robert Wauchope, general editor. University of Texas Press, Austin.
- Sharp, Rosemary  
1978 Architecture as Interelite Communication in Preconquest Oaxaca, Veracruz, and Yucatan. In *Middle Classic Mesoamerica: A.D. 400-700*, edited by Esther Pasztory, pp. 158-171. Columbia University Press, New York.
- Simons, Bente Bittman  
1968a The Codex of Cholula: A Preliminary Study. *Tlalocan* V:267-288.
- 1968b *Los Mapas de Cuauhtinchan y la Historia Tolteca-Chichimeca*. Serie Investigaciones No. 9. Instituto Nacional de Antropología e Historia, Mexico.
- Smith, Mary Elizabeth  
1973 *Picture Writing from Ancient Southern Mexico: Mixtec Place Signs and Maps*. University of Oklahoma Press, Norman.
- Smith, Michael E., and Cynthia M. Heath-Smith  
1980 Waves of Influence in Postclassic Mesoamerica? A Critique of the Mixteca-Puebla Concept. *Anthropology* IV(2):15-50.
- Suárez Cruz, Sergio  
1985 *Un entierro del clásico superior en Cholula, Puebla*. Cuaderno de Trabajo No. 6. Centro Regional de Puebla, Instituto Nacional de Antropología e Historia, Mexico.
- Suárez Cruz, Sergio, and Silvia Martínez A.  
1993 *Monografía de Cholula, Puebla*. H. Ayuntamiento Municipal Constitucional de San Pedro Cholula, Puebla, Mexico.
- Sullivan, Thelma D.  
1982 Tlazolteotl-Ixcuina: The Great Spinner and Weaver. In *The Art and Iconography of Late Post-Classical Central Mexico*, edited by Elizabeth H. Boone, pp. 7-35. Dumbarton Oaks Research Library and Collection, Washington, DC.
- Super, John C.  
1988 *Food, Conquest, and Colonization in Sixteenth-Century Spanish America*. University of New Mexico Press, Albuquerque.
- Tichy, Franz  
1981 Order and Relationship of Space and Time in Mesoamerica: Myth or Reality? In *Mesoamerican Sites and World-Views*, edited by Elizabeth P. Benson, pp. 217-245. Dumbarton Oaks Research Library and Collection, Washington, DC.
- Torquemada, Fray Juan de  
1975-1983 [1615] *Monarquía indiana*. 7 vols. Coordinated by Miguel León-Portilla. Instituto de Investigaciones Históricas, Universidad Nacional Autónoma de México, Mexico.
- Taylor, Edward B.  
1970 [1861] *Anahuac: or Mexico and the Mexicans, Ancient and Modern*. Bergman Publishers, New York.
- Weaver, Muriel Porter  
1993 *The Aztecs, Maya, and Their Predecessors: Archaeology of Mesoamerica*. 3rd ed. Academic Press, San Diego.