

AN ANALYSIS OF URBAN ZONING AND PLANNING AT PREHISPANIC TZINTZUNTZAN

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INTRODUCTION

THE FIELD of urban studies, although well developed in other disciplines, is only beginning to receive systematic, analytical treatment in anthropology. Archaeologists, in particular, have much to offer to increase our understanding of the structure and functioning of urban settlements.

Studying urban settlements involves understanding both the structure of individual urban centers and the structure of larger units which have been termed "systems of urban systems" (Berry, 1964).

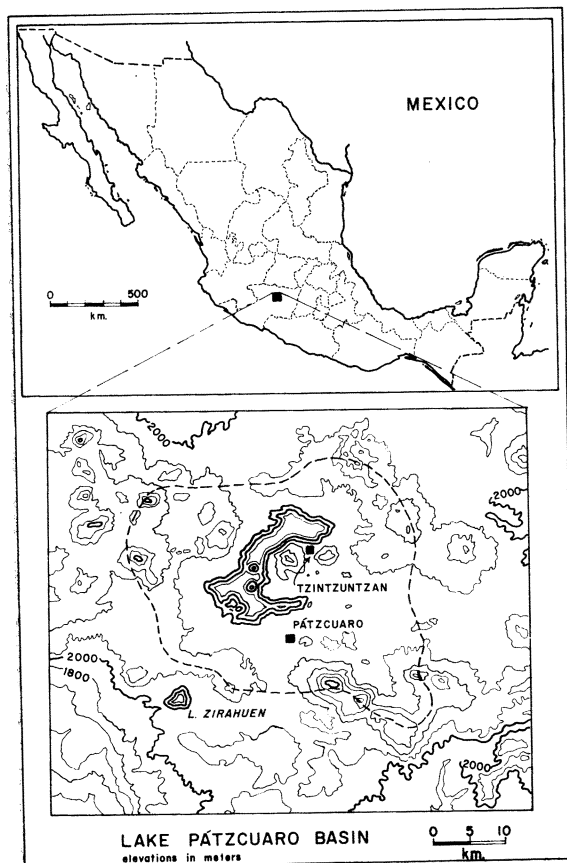
In either case, there are two attributes of settlements which are particularly significant for the archaeologist since each is directly determinable by archaeological investigation. These are the attributes of zoning and planning. Each is the physical manifestation of economic, social, political, and ideological attributes which together comprise a city system.

In the present paper, zoning and planning at prehispanic Tzintzuntzan, Mexico, will be analyzed and then compared with various models of urban structure. By using the results of this study, significant information about the economic, social and political systems of the settlement can be determined. Moreover, such an analysis will enable a preliminary understanding of the nature and development of Tzintzuntzan as a city. Together they will suggest the direction of future research in this region.

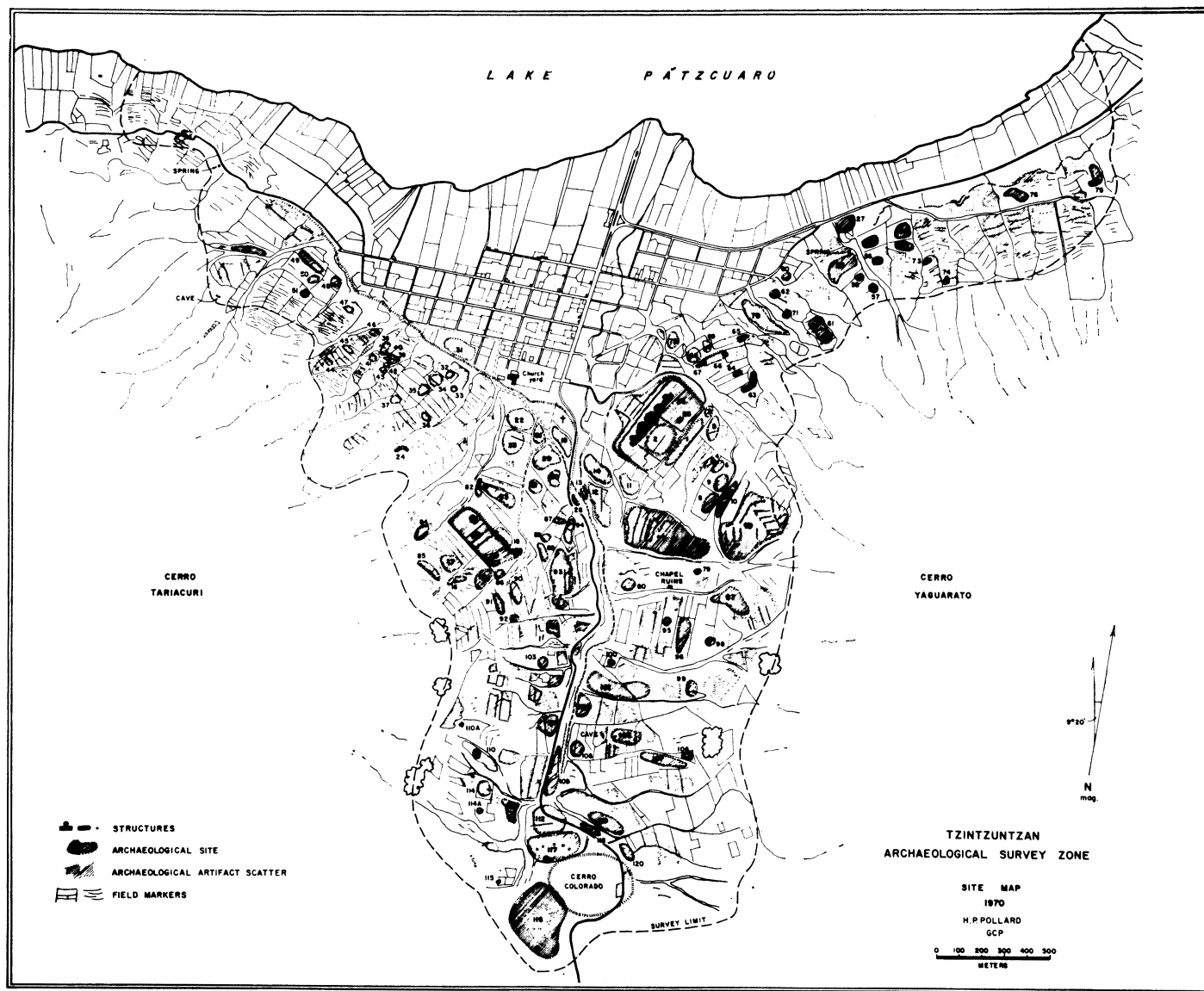
The basic assumption taken here is that intra-settlement variation in the patterning of structures, features, artifacts, and nonartifactual remains reflects the planning and zoning of human behavior. This behavior, in turn, is assumed to reflect the action of the economic, social, political and ideological subsystems of complex settlements. This assumption is similar to those proposed by Binford (1968) and others concerning the patterning of archaeological remains. Accordingly, the basic method for this study will be to concentrate analysis on the intra-settlement variation in terms of structures, features, artifacts, and nonartifactual remains. Historic and ethnohistoric data relevant to the objectives of the paper will also be utilized when possible.

THE TARASCAN CAPITAL

The urban settlement which will be the focus of this analysis is Tzintzuntzan in the state of Michoacán, Mexico. Tzintzuntzan was the capital and principal urban center of the Tarascan State, a late Postclassic political entity whose ex-



MAP 1. Lake Pátzcuaro Basin.



MAP 2. Tzintzuntzan. Archaeological survey zone.



FIG. 1. Looking northeast at the main platform (Tz-25) on the lower slopes of Cerro Yaguarato.

pansion paralleled that of the Aztecs (for the determination of Tzintzuntzan as an urban center see Pollard, 1972). The Tarascan heartland was the Lake Pátzcuaro basin in the highlands of Michoacán. Tzintzuntzan is located on the southern shore of the northern arm of the lake (map 1). At the time of the Spanish conquest in 1525 the capital occupied the area between Cerros Colorado on the south, Tariacuri on the west, Yaguarato on the east, and the lakeshore on the north (map 2). A surface survey by the author revealed that at that time the settlement occupied 6.74 square kilometers and probably had a population between 25,000 and 35,000 people (Pollard, 1972).

Field reconnaissance was undertaken to determine the nature of the settlement, and to lay the foundation for a study of the role of urban settlements in the emergence and development of the Tarascan State. Excavations were not made, although excavation and reconstruction of the principal ceremonial areas has been undertaken by the Instituto Nacional de Antropología e Historia, Mexico, for several years (see fig. 1). These excavations indicate that the settlement was occupied from at least the early Classic period, but the data collected during the survey pertain to the Late Postclassic. This latter period has been termed the Tariacuri Phase at Tzintzuntzan. It is defined on the basis of archaeological and ethnohistorical data (Pollard, 1972) and is estimated to have spanned A.D. 1300/1350–1525. The study of zoning and planning at Tzintzuntzan will be confined to this phase.

ZONING AT TZINTZUNTZAN

Zoning refers to the pattern of differential land use within a given area. Such differential land use is based on the differing functions of particular spatial units. Within a settlement zoning becomes a physical expression of its economic, social, political, and ideological components. As such, this attribute has long been analyzed by sociologists and geographers (see Garner, 1967; Jones, 1966; Park, Burgess and McKenzie, 1925; Sjöberg, 1960) although almost exclusively within European and North American industrial settlements. While archaeologists have studied land-use patterns on a supra-settlement level, intra-settlement zones are often referred to as “activity areas.”

Because zoning reflects a multitude of other settlement components, and because it has been so little studied in non-industrial situations, it is extremely difficult to describe a range of variation in its expression, and more difficult to propose a single scale against which individual cases may be evaluated. Previous attempts have classed non-residential zoning as either nucleated or non-nucleated (Lanning, 1967: p. 35), and others have classed settlements as either with or without residential zones. As these are only partial measures of zoning, two approaches will be used here.

The first approach is to scale the location and patterning of functions: (1) Low degree zoning (little differential land use; almost all parts of settlement are similar multi-purpose zones), (2) Moderate degree zoning (some differential land use with at least two non-overlapping, although each multi-purpose, zones), (3) High degree zoning (abundant differential land use with many single-purpose zones).

The second approach is to distinguish and describe the number and types of zones. Among those which have been isolated are public zones (political, religious, educational, administrative), industrial zones (production of goods), commercial zones (distribution of goods and services), residential zones, defense zones (walls, ditches), burial zones, agricultural zones, and recreational zones (Jones, 1966; Garner, 1967; Sjöberg, 1960; Hardoy, 1964).

The study of land use within Tzintzuntzan involved (1) the determination of non-random variability among the sites surveyed with regard to artifact distribution, structures and features; (2) the use of ethnohistoric and historic data to suggest the interpretation of this variability, and to

document the presence of other structures and features not discerned archaeologically; (3) the assignment of individual sites to land-use zones. A site was defined by concentrations of artifacts spatially isolable; they were the smallest units of data collection. Data pertaining to the distribution of artifact types and modes, structures and features were gathered from the analyses of survey collections (Pollard, 1972) and published results of the Instituto Nacional de Antropología e Historia work. In total, 120 sites were surveyed, of which 89 included artifact collections. Unfortunately, the collection samples were too small to be subject to any statistical procedure (i.e. in several cases fewer than 100 artifacts per site), so eyeball comparisons of the distributions were made. Several precautions were taken to increase the validity of the inferences based on these comparisons. First, only extremes in artifact presence and absence were considered significant; the smaller the sample per site, the greater the deviation needed to be considered adequate. Second, sites were classified on the basis of a combination of attributes. Finally, where possible, classifications were confirmed by ethnohistoric and historic data. The primary ethnohistoric sources are the *Relación de Michoacán*, written in Tzintzuntzan between 1539 and 1541 (the 1956 El Escorial edition used here), and several colonial maps of Tzintzuntzan dating to the mid-sixteenth century.

The data have allowed the isolation of five categories of zones within Tzintzuntzan. These are: residential zones, manufacturing zones, public zones, commercial zones, and agricultural zones. The defining features of each zone will be briefly summarized along with any ethnohistoric correlations and functional interpretations.



FIG. 2. *Relación de Michoacán* 1956: p. 213. "Concerning the manner of marriage of *la gente baja*."



FIG. 3. *Relación de Michoacán* 1956: p. 207. "Concerning the manner of marriage of *los señores*."

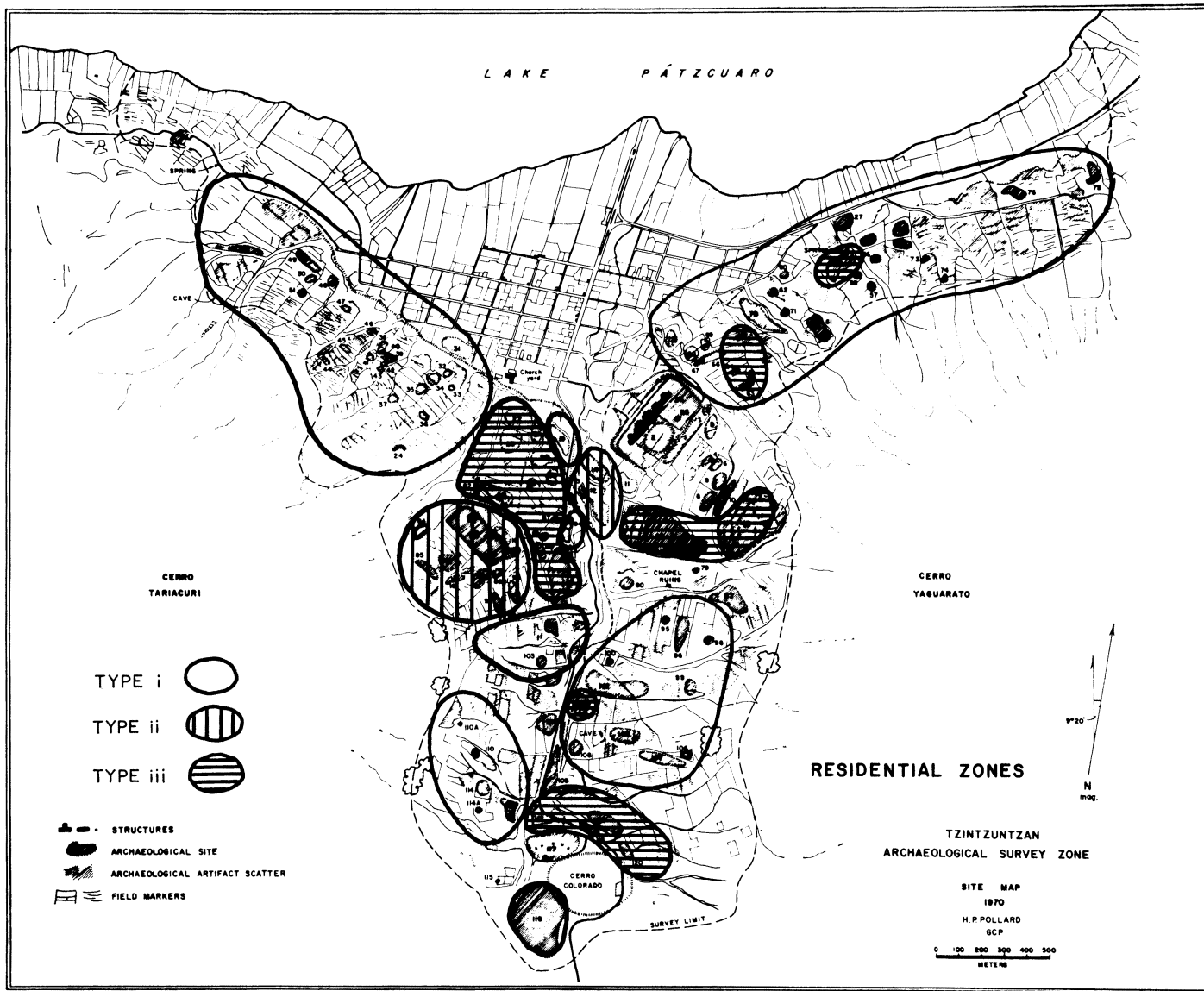
I. RESIDENTIAL

Archaeologically associated features are lithic and ceramic material which are indicative of food preparation, serving, and storage. These include graters, coarse wares, jars, bowls, flakes, blades, manos, and metates. Many sites have concentrations of basalt stone which may be house foundation remnants.

Ethnohistorical correlations include illustrations found in the *Relación de Michoacán* (hereafter termed the *Relación*) which show various prepared foods placed in shallow bowls (1956: p. 226) and maguey wine in everted rim jars (1956: p. 131). Another illustration (1956: p. 200) shows a house with what appears to be a stone foundation. The houses themselves were probably of wood or adobe (Brand 1951: 51; Beals, Carrasco, McCorkle, 1944: p. 33). The roof was of straw as described in the *Relación* (1956: p. 227) and stated by Sahagun (Beals *et al.*, 1944: p. 33). Several illustrations in the *Relación* show what appear to be thatch roofs (see figs. 2 and 3).

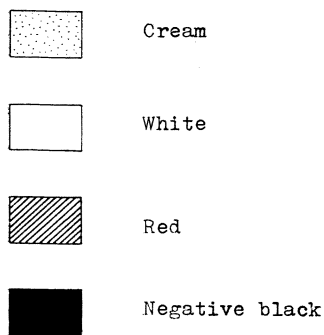
These features taken together are indicative of residential zones. Several types of such zones have been discerned and are described below.

A. *Type i residential zone*: Type i residential zones are located on the northeast slope of Cerro Tariacuri behind the modern town to the west of the churchyard, on the northwest slope of Cerro Yaguarato east of the main platform (Tz-25), on the slopes of Cerro Tariacuri and Cerro Yaguarato south of Tz-29 (Santa Ana) and north of Cerro Colorado, and also on the southwest of Cerro Colorado (see map 3) at 53 sites.



MAP 3. Residential zones.

Key to colors on painted sherds



Note: Stippling is used to represent cream slip or paint only when there are two or more colors. Otherwise it is used to illustrate form.

FIG. 4.

Archaeologically associated features include no extremes in lithic artifacts, which are made from gray obsidian or basalt. The sites are often high

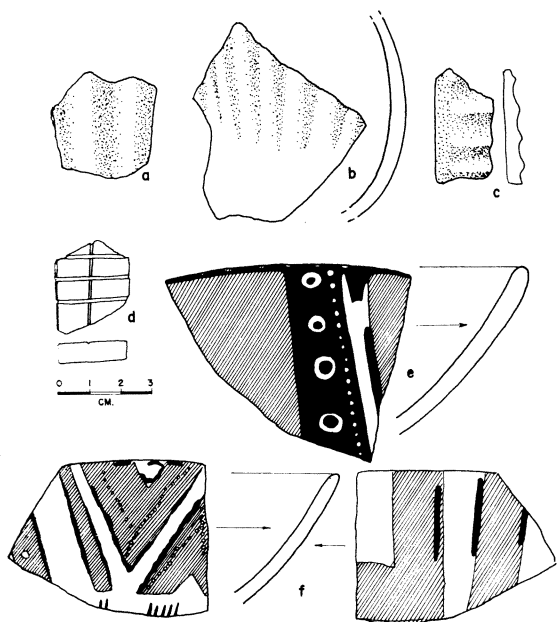


FIG. 5. Decorative techniques. *a-c.* modeled corrugation; *d.* excision; *e-f.* negative.

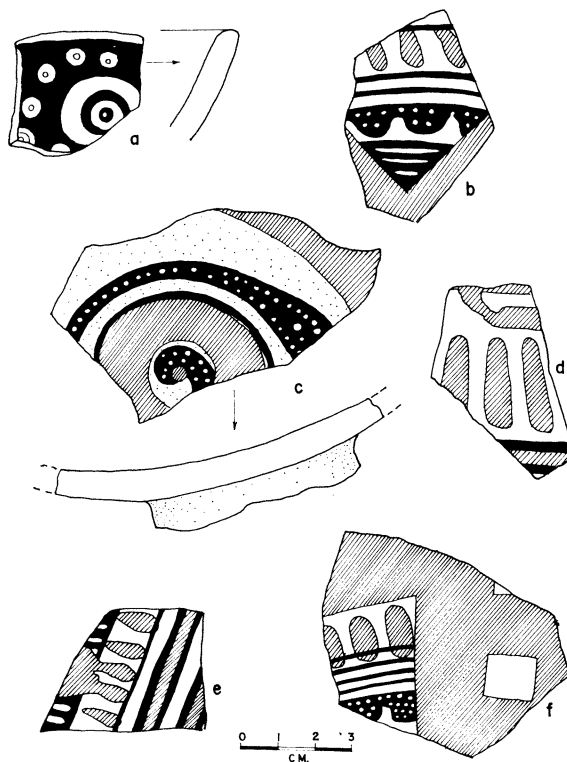


FIG. 6. Decorative techniques. *a-f.* negative.

in coarse wares, with a high ratio of jars to bowls, and few or no miniature bowls, plates, or spouted vessels. There is no pink, white, or gray slip, and

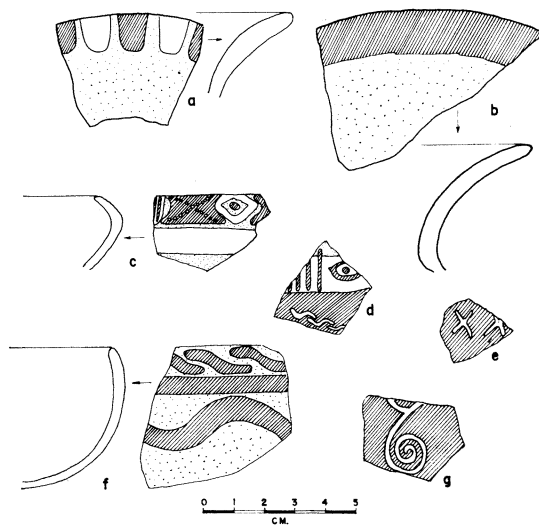


FIG. 7. Decorative motifs. *a.* red and white vertical dashes; *b.* red band; *c, e.* "X" motif; *d.* "S" band; *f.* "Z" band; *g.* double spiral.

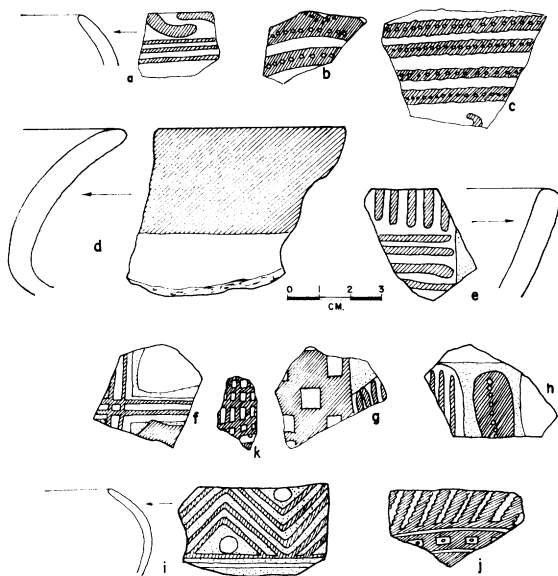


FIG. 8. Decorative motifs. *a*. thin parallel lines; *b-c*. line of white dots; *d*. white neck band; *e*. thin parallel lines; *f, k*. hatching; *g*. checkerboard; *h*. thin lines on vertical dashes; *i-j*. miscellaneous.

sherds are generally only mono- or bichrome. There are few decorative motifs and simple pipe-stem forms are the only found. Because of the

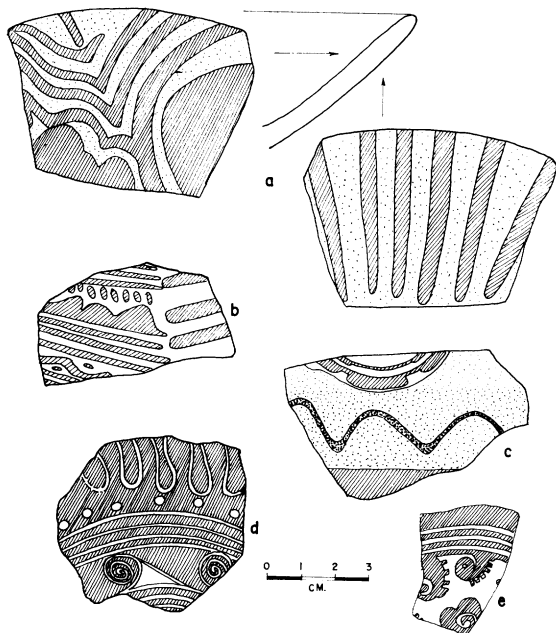


FIG. 9. Decorative motifs. *a-d*. miscellaneous; *e*. spiral with ticking lines; *c*. stippled area represents pink slip.

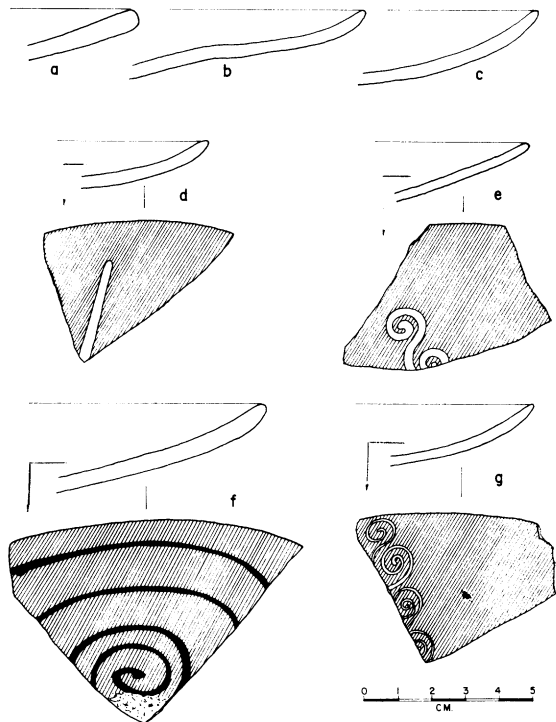


FIG. 10. Convex wall plates. *d, e, g*. white on red; *f*. black on red (Texcoco).

low proportion of decorated sherds and unusual vessel forms or lithic forms (all selected for in the site sampling procedure), these sites have the lowest sample sizes.

Ethnohistoric correlations are found in an illustration in the *Relación* (1956: p. 213) with the caption "De la manera que se casaba la gente baja" (fig. 2). The illustration shows everted rim jars and convex wall bowls associated with the lower class but does not show any of the more elaborate ceramic forms. These are shown in other illustrations in the *Relación* (see fig. 3). Lithic material from all these sites indicates some lithic tool manufacture and use within the residential zone. Indeed, in the *Relación* (1956: p. 177) it states that bows and arrows were in such demand that they were made by the people of the city each day.

Based on these data residential zone type i is interpreted as low status residential zones within the city.

B. Type ii residential zone: This type is located southwest of the main platform (at Tz-12 and Tz-13) and including and adjacent to the Santa Ana platform (Tz-29) (see map 3) at 12 sites.

Archaeologically associated features include the basic ceramic and lithic assemblage as described for type i residential zones, with the addition of the following: red and green obsidian, ear/lip plug fragments, unusual vessel forms (out-sloping wall, everted rim, incurved rim, and composite silhouette bowls, plates, spouted vessels), pink, white, and gray slip, polychrome decoration, negative decoration, unusual motifs (double spiral, hatching, checkerboard, dots and X, Z, and S motifs) (see figs. 4-13).

An illustration from the *Relación* (1956: p. 207) with the caption "De la manera que se casaban los señores" (see fig. 3) contains three groups of ceramics—everted rim jars, convex wall bowls and spouted vessels with loop handles. The similar scene in the companion picture of "la gente baja" (fig. 2) contained no spouted vessels. Other illustrations with spouted vessels dealt with the burial of the dead king and goods from the king's house (1956: pp. 218, 251).

Among the officials of the administration described in the *Relación* was one who oversaw the plate-makers. Plates, as distinguished from bowls, have a restricted distribution to these sites.

Within the *Relación* are statements of the material accompaniments of high status, and among these are lip and ear plugs (1956: pp. 203, 195, 157, 124). Burials of high-status individuals took

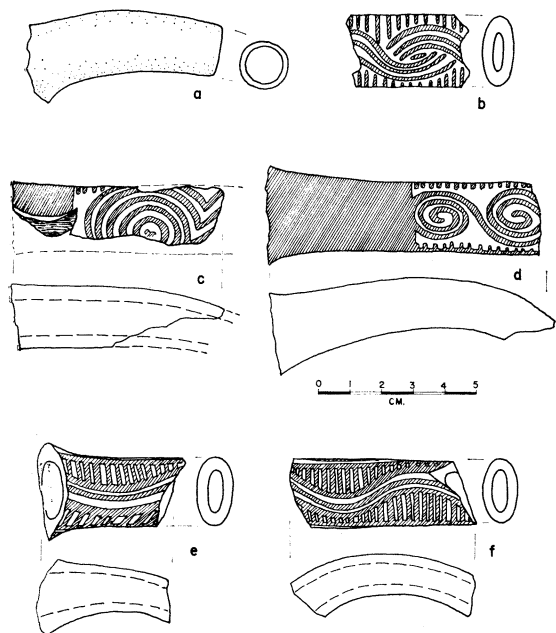


FIG. 11. Spouts. a. spout; b-f. spout or spout-handles with double spiral or zoned curvilinear motifs.

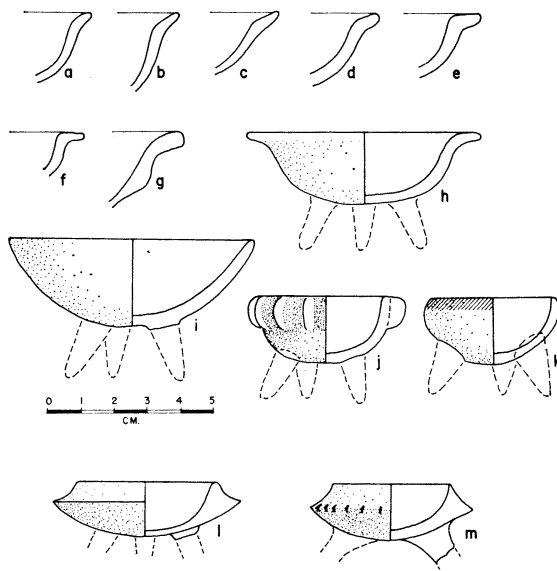


FIG. 12. Miniature bowls. a-h. everted rim; i-k. convex wall; l-m. flange wall.

place within and near the *yácatas*, ceremonial pyramids located on the main public platform (see Primary Religious Zone). Excavations by Rubín

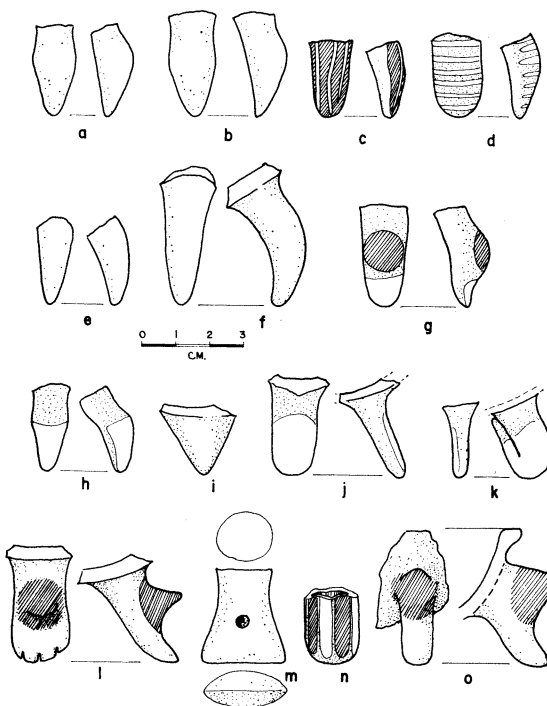


FIG. 13. Small supports. a-h. spider; i. conical; j-k. flat oblong; l. foot-claw; m. flared; n. hollow; o. solid foot.

de la Borbolla (1944) near Yácata 5 (Tz-25) revealed two sets of burials, five male and nine female. Associated with the male burials were clay pipes, obsidian ear and lip plugs. Associated with the females were large numbers of polychrome ceramics. In addition other excavations near the *yácatas* have revealed large numbers of miniature bowls, negative decoration, and others of the unusual motifs listed above (Rubín de la Borbolla, 1939, 1941, 1944).

It is felt that the sites listed above were residence areas for the highest social group in Tzintzuntzan, including the king (called the *cazonci*) and his family. Specifically it is proposed that Tz-29, also called the Santa Ana platform, was the main residence. Unlike the main platform (Tz-25) which has considerable evidence of primary religious functions (see Public Zones, below), the area around Tz-29 appears essentially residential. Unfortunately, the surface of the platform itself has been cleared of artifacts. The first Catholic chapel in Michoacán was located on this site in 1525-6 (Foster, 1948: p. 16). There is a clear distinction in the *Relación* illustrations between temples and residences. In one (1956: p. 171) the king sits in front of a large house with the artisans of his court. Numerous references appear to a large patio of the king located "delante sus casas" (1956: pp. 13, 219). In an illustration of the king's son returning home, there are several houses, one of which has a short stair leading to it and contains a stool or throne. These buildings, of residential, not temple design, appear to be on a raised platform. The only other patio referred to in the *Relación* text is that of the five temples (Tz-25).

In addition, there is an unusually low proportion of pipes and pipe fragments at these sites. This is despite large samples and local pothunting which focuses on the finer pottery. Tobacco and smoking tend to be associated with religious ritual in the *Relación* (Porter, 1948). The chief priest, for example, carried tobacco in the gourd worn on his back (1956: p. 181). Sites with unusually high pipe proportions appear to be associated with religious affiliated structures. Thus the area around the Santa Ana platform does not seem to conform to an interpretation of this platform as primarily religious in focus. If, however, Tz-29 was the focus of the king's residence, then it served multiple functions of political, administrative, residential, and some religious functions (see Public Zones).

There is a certain amount of variation within sites designated "high-status residential." Tz-12 has a high proportion of pipes and pipe fragments and obsidian prismatic blades. This is probably due to its proximity to the main platform (Tz-25), and possible association with it in a residential capacity. Tz-18, adjacent to the Santa Ana platform (Tz-29), contains unusually high proportions of polychrome plates and produced four of the six non-local sherds in the survey (including Aztec black/red and Cholula polychrome) (see fig. 10). Twice in the *Relación* foreign emissaries are received; first those from Moctezuma and second those from Cortés (1956: pp. 237, 246) are received at the king's residence. Tz-18 may reflect this function.

C. *Type iii residential zone*: Type iii residential zones are located between the two platforms (Tz-25 and 29) and south of the modern church, adjacent to the spring at Ojo de Agua, immediately northeast, south, and southeast of the main platform, midway between Tz-29 and Cerro Colorado, and adjacent to the north side of Cerro Colorado (see map 3) at 28 sites.

The sites contain some, but not all, of the lithic and ceramic artifacts found at the "high-status" sites. While there are polychrome ceramics, there are few or no miniature bowls or plates. Decorative motifs include dots, lines, and bands, but lack double spirals, hatching and checkerboard. White, pink, and gray slip is rare or absent. Small supports (probably associated with minibowls) are found, some spouted vessel sherds, some negative and red and white painting. Obsidian is gray with red and green rare or absent. The assemblages appear in many ways between the extremes of high and low status sites. For example, low-status sites lack small supports, high-status ones contain such supports, most of which are painted. The sites included here contain the supports, but they are rarely painted (see figs. 4-13).

Random variation may have caused this apparent difference, although two factors lessen this possibility. First, in the sampling procedure an effort was made to locate polychrome sherds, unusual vessel forms, etc. Second, previous non-random sampling (looting) is best known from the area of high-status sites. If skewing occurred, it is more likely in the underrepresentation of the high-status sites, rather than these sites.

Type iii is interpreted as middle-status residences, although "middle" is not to be confused with the concept of middle class. It probably

represents the lower branches of the high-status group in the social structure of Tzintzuntzan. The *Relación* discusses several levels of high status, including *señores* (of the royal lineage), *principales* (nobles), and *caciques* (village chiefs) (López Sarrañangue, 1965: p. 37). In describing the marriage of *señores* the *Relación* refers to other "lower *principales*" (1956: p. 210). It is probable that certain occupational specialists occupied higher status positions than "la gente baja," but the artifact assemblages appear most consistent with the first interpretation. The association of small ceremonial units adjacent to several of these sites reinforces this view (see Public Zones, Minor Religious Zones).

D. *Type iv residential zones*: This zone is located on the northwest slope of Cerro Yaguarato and clusters between the modern barrio of Ojo de Agua and the main platform (zone is not indicated on map 3). This zone coincides with type i and iii residence zones in the same area and may possibly represent an ethnically different population residing in these zones.

The sole criterion for this zone is the presence of Querenda Ware ceramics. This ware differs in paste, firing, vessel forms, and decorative motifs from the rest of the ceramics in the Tariácuri Phase. Its distribution is highly concentrated: only 22 sites of 89 in the survey contained Querenda Ware and only 6 had more than one sherd. More specifically, 88 per cent of the sherds were located northeast of the main platform in what is now the modern barrio of Ojo de Agua; 39 per cent from site Tz-59 and 20 per cent from Tz-70. In both cases this ware represents almost half the total ceramic samples, although it represents less than 4 per cent of the ceramic sample from Tzintzuntzan as a whole.

When the survey was completed it was felt that this ware, with its unusual features and distribution, was the result either of temporal or ethnic variation within the city. Since that time research by Shirley Gorenstein and the author along the Tarascan political frontier has confirmed the latter interpretation (Gorenstein, 1976; Pollard, 1976). Querenda Ware ceramics have been located from the frontier sites of Taximaroa, Michoacán; Zitácuaro, Michoacán; and Cerro Chivo in Acámbaro, Guanajuato. Stratigraphic excavations at Cerro Chivo place the Ware in the late Postclassic, synchronous with the Tariácuri Phase. A survey by the author in the Lerma River basin near Cerro Chivo has established the strong presence of this

ware, with additional types than found at Tzintzuntzan, in the settlements inside the Tarascan political domain but along its borders.

Given the identical paste, and the much greater quantity and variety of types located on the frontier, the ceramics were certainly brought into Tzintzuntzan and utilized by a group of persons within a restricted area of a residence zone. Until additional work is done in the Lake Pátzcuaro basin the interpretation accepted here is that individuals representing populations living along the politically sensitive northeast Tarascan boundaries resided in zone iv. It is possible that they represented one of the several ethnically distinct groups within the Tarascan State (such as Matlazincas). Whether the group performed political or economic functions within the urban system cannot be determined at this time.

II. MANUFACTURING ZONES

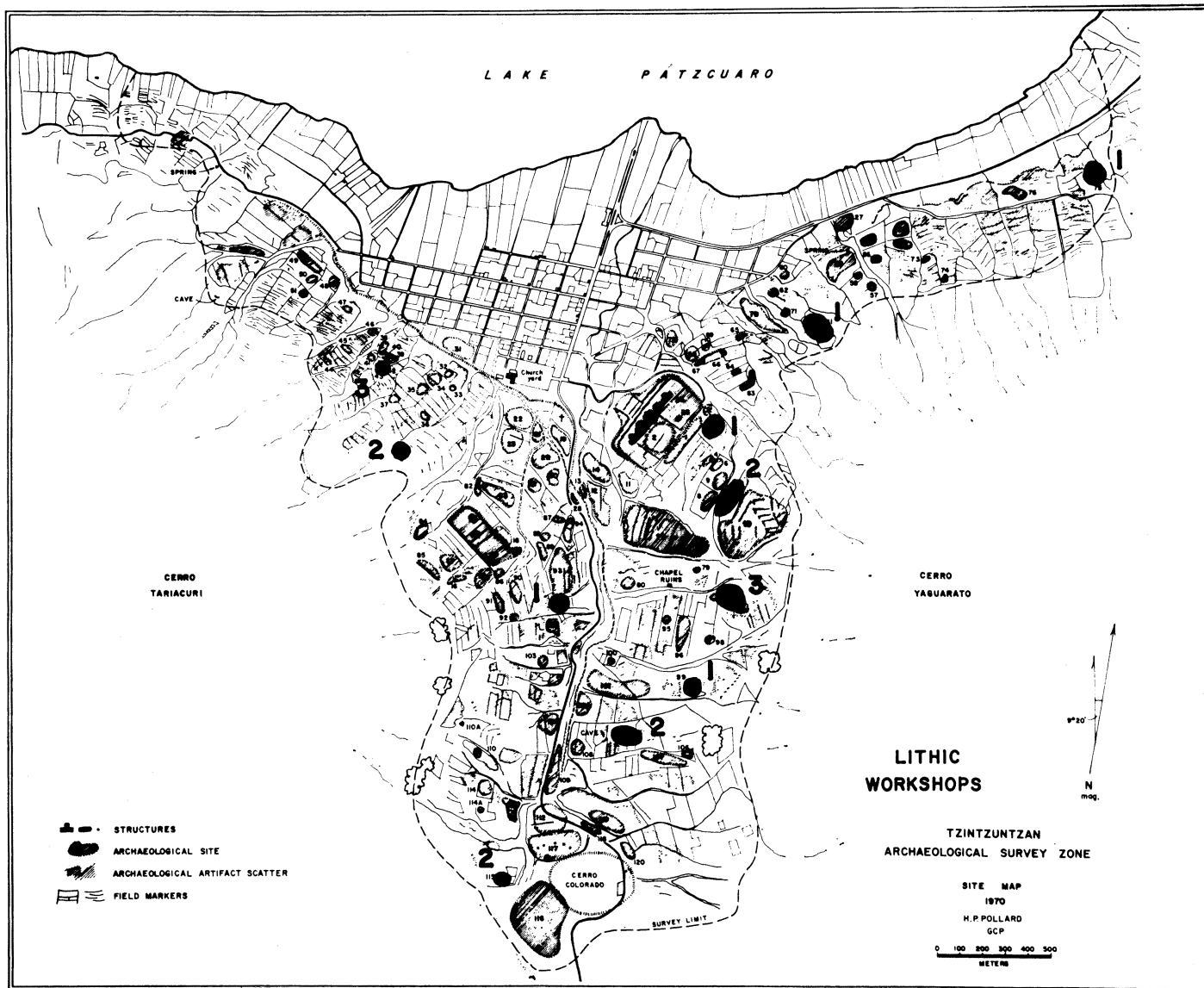
A. *Lithic workshop type 1*: The primary function of these five workshops (for location see map 4) includes the production of lithic tools, particularly prismatic blades. There is a high proportion of lithic artifacts, primarily unretouched prismatic blades. Also found are high proportions of polyhedral blade cores and blades with ground platforms still attached. Generally there are few ceramics, especially polychrome and decorative motifs, although Tz-75 and 99 contain minibowls and spouted vessels, respectively.

The variability in the assemblages, including those primarily residential sites with lithic manufacture (see residential type i) suggests basic generalized tools produced and used within residential units. The *Relación* (1956: p. 172) indicates however that there were specialists, *navajeros*, producing prismatic blades according to the techniques described by Crabtree (1968).

B. *Lithic workshop type 2*: The primary function of these zones involves the manufacture of various other artifacts. See map 4 for the location of these four zones.

Characteristic of this type is a "pavement" of chipping debris with high proportions of red and green obsidian, crude blades, flakes, notched tools, pointed tools, unfinished or broken ground obsidian pieces (ear/lip plugs, cylinders, disks). There is a low proportion of ceramic artifacts, especially polychrome sherds. Only simple convex wall bowls and everted rim jars are associated.

There is much lower variability between these sites than in the previous category. All ceramic



MAP 4. Lithic workshops.

assemblages are small, simple, and suggest minimal residence at the sites. The lithic assemblages suggest the manufacture of non-utilitarian objects associated with high-status residential zones.

C. Lithic workshop type 3: The primary function of these zones involves the use of large scrapers. Only two such zones were located in the survey (see map 4).

There is a high proportion of lithic material, most of which being large unifacial scrapers, especially end and bilateral scrapers (see Pollard, 1972). There are few ceramic remains and these are generally undecorated. About 30 per cent of all scrapers collected in the survey were from these two sites; including 50 per cent of the end and bilateral scrapers (see figs. 14–15).

The lack of chipping debris suggests use, rather than manufacture, of scrapers. Any activities requiring large scrapers, such as cleaning and preparing skins, woodworking, and the like, could have been performed here.

D. Other specialized manufacturing: Within the *Relación* there is mention of more than 28 specialist groups including: tanners, leatherworkers, sandal-makers, potters, flower-workers, masons, silverworkers, featherworkers, carpenters, gourdplate painters, and painters (1956: pp. 176–

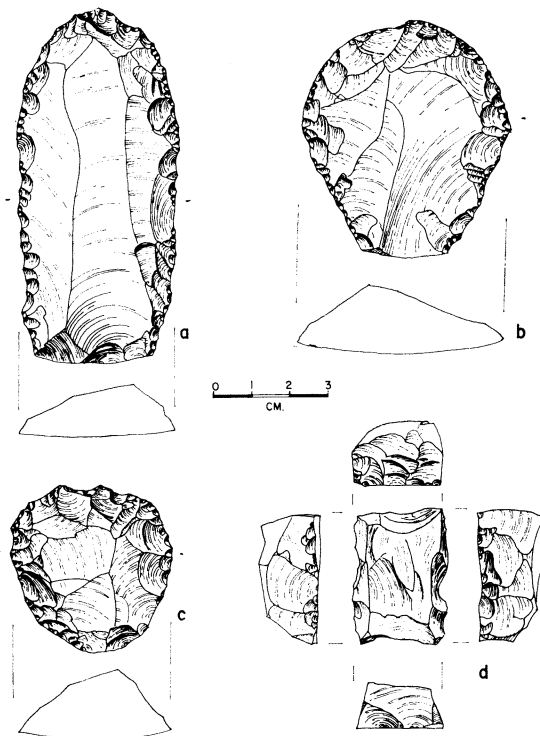


FIG. 15. Unifacially retouched artifacts. Scrapers. *a-b.* end and bilateral; *c.* discoidal; *d.* rectangular.

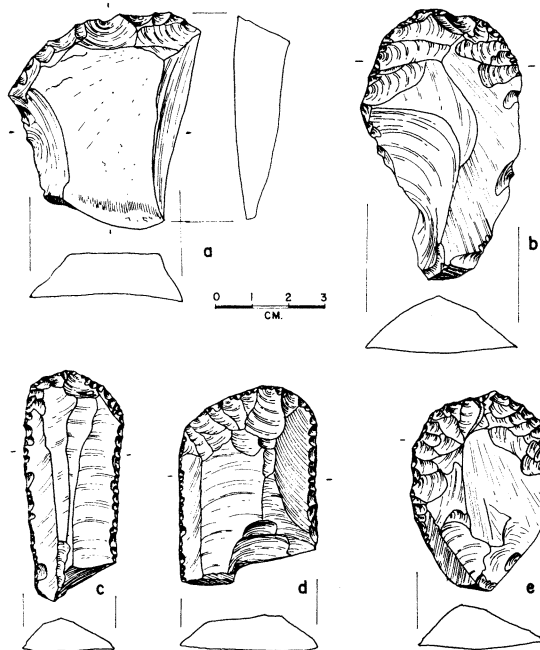


FIG. 14. Unifacially retouched artifacts. Scrapers. *a.* crude end of flake; *b.* simple end of blade; *c-d.* end and backed; *e.* end and unilateral.

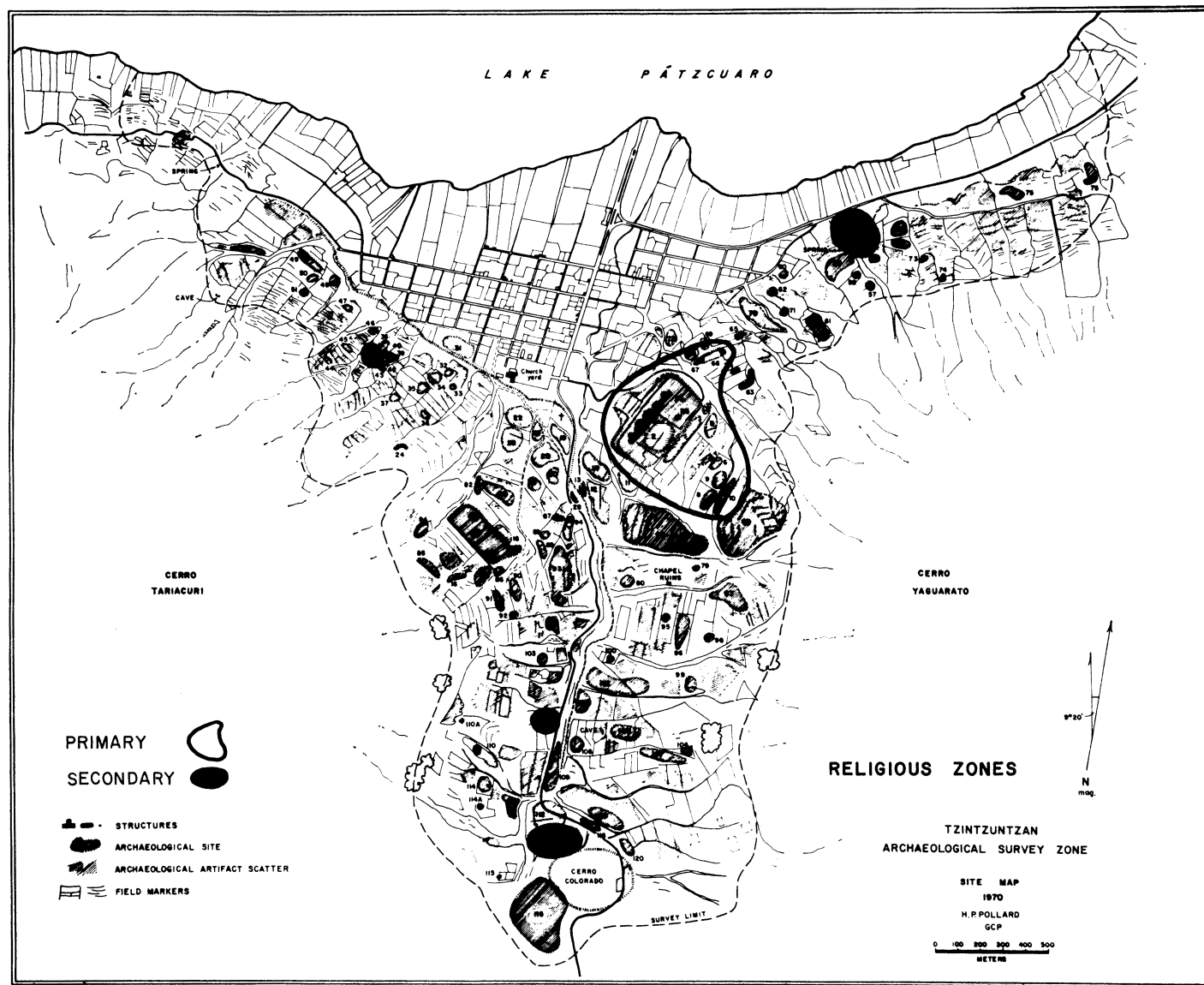
182). Unfortunately, there is no mention of the localization of the manufacture or residence of these groups, although some may have been housed directly within the king's residence (1956: pp. 171, 172).

III. PUBLIC ZONES

A. Primary religious zone: The primary religious zone of Tzintzuntzan was located on the northwest slopes of Cerro Yaguarato and centered on the main platform (Tz-25) and included at least two smaller areas, Tz-10 and Tz-66 (see map 5 and fig. 16).

Tz-25 is commonly called the main platform or central plaza of Tzintzuntzan. It constitutes the "Zona Arqueología" of the Instituto Nacional de Antropología e Historia of Mexico. The works of Noguera (1931), Acosta (1939), Rubín de la Borbolla (1939, 1941), Gali (1946), and Piña Chan (1963) should be consulted for detailed descriptions of the site and excavations there.

In general, the site consists of a large artificial platform, 450 by 250 meters, built on the lower slope of Cerro Yaguarato (see maps 2 and 5 and fig. 16). The platform has a rubble core and is



MAP 5. Religious zones.

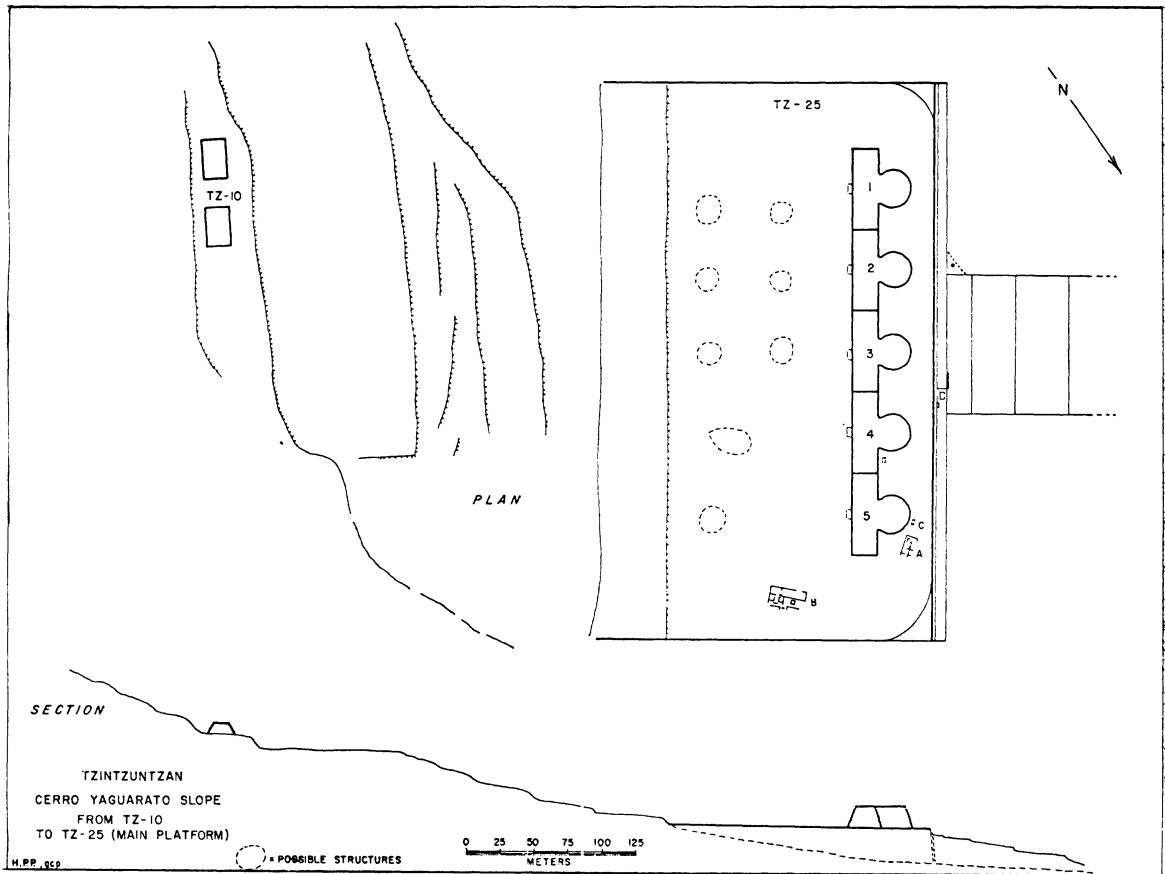


FIG. 16.

faced with stacked tabular basalt. The front and probably also the sides were stepped. From the center front of the platform a ramp extends in a series of sloping terraces toward the northwest. Several small structures were located at the top of the ramp.

There are five stone platforms or *yácatas* located along the east side of the platform surface. They are rubble core mounds faced with dressed basalt slabs, which are often covered with petroglyphs. The *yácatas* have an unusual shape, consisting of rectangles with circular extensions (see fig. 16). At least four and maybe five superpositions are visible on Yácata 5, one of the two *yácatas* reconstructed by the Instituto Nacional de Antropología e Historia.

On the rest of the main platform are located several burial chambers, a series of rooms termed Edificio B, and several mounds along the back (southeast) edge of the platform. An ossuary was located just off the northeast side of the platform.

Above the main platform on the slopes of Cerro Yaguarato are located two square basalt stone mounds set in the center of a large terrace (Tz-10). These are the Yácatas VI and VII described by Ramón Gali (1946: pp. 57-59). Of similar size, shape, and construction are two mounds located within 100 meters of the northern edge of the main platform (Tz-66). Both of these sites are assumed to be religious in function and to be associated with the main platform. A map by Beaumont (1932: pp. 25-26) contains temple structures located in similar positions with respect to the main platform.

Within the *Relación* religious ceremonies are described taking place on the main platform. The five large structures, called *cúes* in the *Relación* are said to be dedicated to the god Curicaueri and his four brothers (1956: p. 255). These structures were also used as burial locations for high-status individuals (1956: pp. 221 ff. and Rubín de la Borbolla, 1944). When the arrival of the Spaniards in Tzintzuntzan is described in the

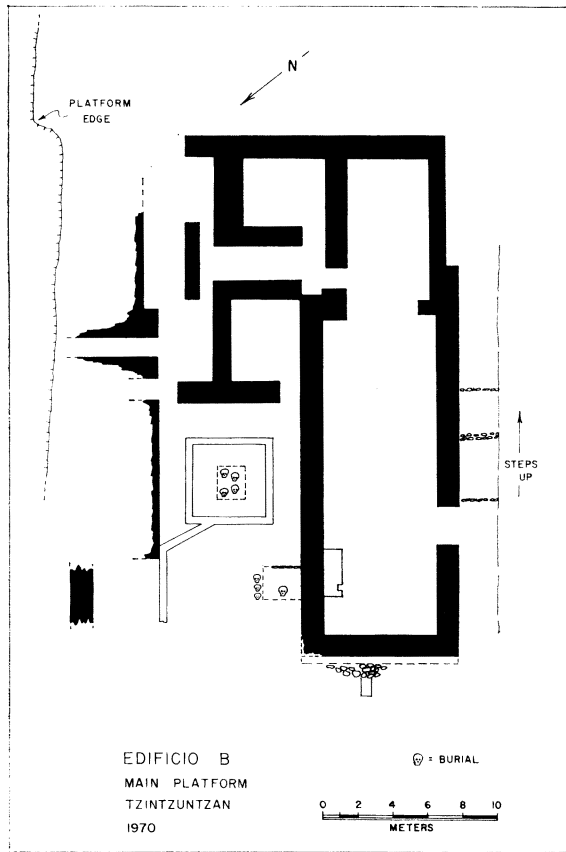


FIG. 17.

Relación, it is noted that after visiting the king's residence the Spaniards returned to the "patio of the five large temples, and lodged in the houses of the priests" (1956: pp. 255-256). Such a residence may be structure B, located on the west end of the platform (fig. 17). A skull rack referred to in the *Relación*, as well as large sacrificial stones, were probably also located on the platform (1956: p. 182).

B. Secondary religious zones: Four sites are designated secondary religious zones (see map 5 for location). They are characterized by the remains of rubble filled stone structures and/or a high proportion of pipes and pipe fragments (see figs. 18-20). In addition are found "middle status habitation" assemblages and all are associated with (looted) burials.

These sites are viewed as local religious centers within the various residential zones of the settlement. In modern Ihuatzio, a Tarascan settlement south of Tzintzuntzan along the lake shore, a dis-

inction is made between *yácata*, a temple containing tombs, particularly royal tombs, and *echecu-ahua*, other temples (Van Zantwijk, 1967: p. 270). These are assumed to have been the latter, although the Spanish generalized the term *yácata* to all temples. The *Relación* states that there were several temples (*cúes*) in the settlement dedicated to other gods than Curicaueri (1956: p. 197).

Several structures labeled "Yácatas del Rey" on the Beaumont map of Tzintzuntzan (dated to the 1540's; Foster, 1948: pl. 1), and two structures at the base of a small hill on the Seler map (late 1540's; Foster, 1948: pl. 2) may represent the secondary group of ceremonial structures located at Tz-117 near the southern end of the settlement. A single temple structure on the Seler map is approximately in the location at Tz-41.

In the *Relación* illustration of marriage among the common people (fig. 2) there is a small temple or altar to which wood is being brought. As this appears to be taking place in a residential area it is probably not unreasonable to view these sites as religious zones within residential zones.

Further support for the above interpretation comes from the fact that three of the four sites of

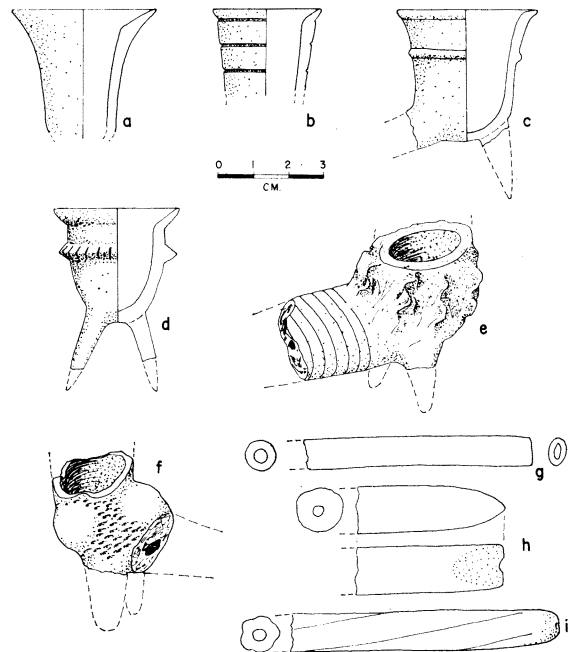


FIG. 18. Pipe bowls and bits. *a-b*. thin walled, beveled lip; *c-d*. thin walled, conical bowl; *e*. thick modeled; *f*. bulbous base; *g*. plain bit; *h*. beveled bit; *i*. ground around bit.

this type are said to have been the general locations of Colonial chapels, one of which still remains at Ojo de Agua (site Tz-27). It was not unusual for Spanish priests to usurp the religious authority of prehispanic religions by occupying their temple foundations.

Although not located archaeologically, the *Relación* indicates that two altars existed at the entrance to the city (1956: p. 190).

C. *Political-administrative zones*: There are no sites or areas to which a primarily political or administrative function can be assigned. The houses of the king were the locus of political activity as described in the *Relación*. For example, the hearing and judging of civil and criminal offenses took place in the "patio of the king" (Tz-29) (1956: p. 13). The houses were multi-purpose, incorporating residential, political, and probably some religious functions (for example on page 186 of the *Relación* there is a description of a small temple within the "casas del Cazonci"). In addition certain manufacturing activities may have taken place here (see "other manufacturing zones").

D. *Other public zones*: These include specialized structures described in the *Relación* but for which there is no locational data.

1. *Casa de las águiles*: Possibly a form of men's house or hospital associated with the healing of

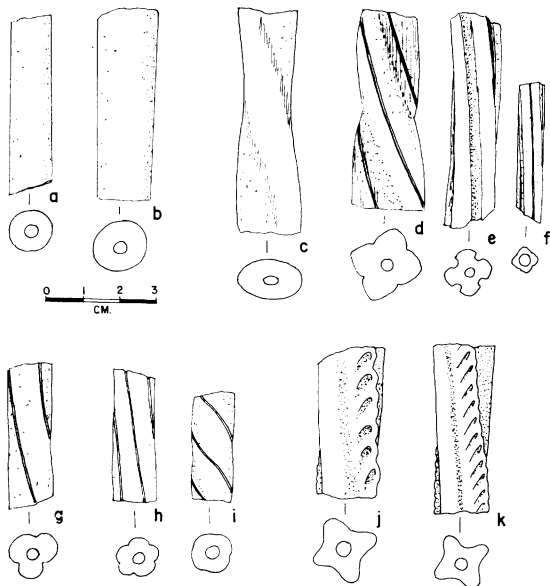


FIG. 19. Pipe stems. a-b. circular cross-section; c. simple twist; d-f. incised twist four; g. incised twist three; h-i. twisted and incised; j-k. twisted and scalloped.

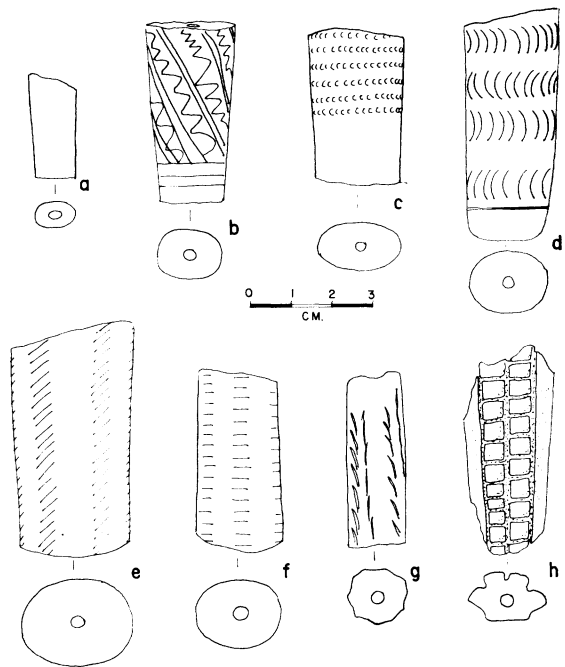


FIG. 20. Pipe stems. a-f. oval cross-section; b. pattern burnished; c-d. stamp incised; e-f. incised; g. scalloped; h. corncob.

wounds received in battle. These structures are mentioned often in the text, but only one statement referring to their use by wounded soldiers indicates anything about their function (1956: p. 36).

2. *Jail*: There are numerous references to a jail in which those who had broken laws were placed. The jail was for both residents of Tzintzuntzan and the surrounding towns (*Relación*, 1956: pp. 11, 12).

3. *Zoo*: This was probably located within the palace structures. In the zoo were eagles and other birds, "lions and tigers," jackals and wolves (*Relación*, 1956: p. 178).

4. *Storehouses*: One kind was for crops, cotton mantles, and other tribute items (1956: p. 177), and the other was for the personal wealth of the king, including precious metals and feathers. It is illustrated in the *Relación* as a rectangular building containing a small altar surrounded by chests containing gems, feathers, gold, and silver (1956: p. 152). It was probably located within the palace buildings, although specific mention is made of other treasuries located on various islands within the lake.

5. *Ball court*: The only ball court mentioned in the *Relación* is in connection with the movement of the priests of the goddess Xarátanga (a patron goddess of Tzintzuntzan) to Sipiho. At Sipiho, located south of Tzintzuntzan near the lake shore, was built (according to the *Relación*) a ball court, a bath, and some temples (1956: p. 26). Therefore there is no knowledge of any ball courts within the city itself.

6. *Baths*: Several statements in the *Relación* indicate the presence of baths, including one within the houses of the king (1956: p. 185).

IV. COMMERCIAL ZONE

There is no evidence, either archaeological or ethnohistoric, of a market place within Tzintzuntzan. In the *Relación* there are mentions of markets in other villages along the lake (1956: p. 91), but not specifically at Tzintzuntzan. The most likely place for such a market would have been in the flat area either under or just north of the modern town. Foster reports that,

Tzintzuntzan too, at one time, had its weekly market. Up until the first years of the 20th century, Saturday was characterized by the assembly of traders from all parts of the lake, coming to barter their wares for what is considered to be the best utilitarian pottery of the region. . . . *An area near the lakeshore, somewhat west of the highway and pier was set aside for business.* Today it is just another milpa, without a trace of its former use (1948: p. 131) [emphasis mine].

V. DEFENSE ZONE

There is no evidence of any fortifications within the settlement or of walls, moats, or guardhouses surrounding the city. Nor are any structures known to have been fortified. The very location of the settlement between the mountains Tariacuri and Yaguarato may have served a defensive function.

VI. CEMETERY ZONE

There is no evidence of any zone set aside for the primary function of burial. Burials, urn, flexed, and extended, have been excavated from the main platform (Tz-25), (Rubín de la Borbolla, 1939). Looted burials were found at several sites designated as secondary religious zones.

VII. AGRICULTURAL ZONE

In calculating the size of the settlement, I have assumed that the lake shore *milpas* now utilized were used as such in 1525. The earliest Colonial maps (the Selser and Beaumont maps; see Foster,

1948) show no structures here. The Spanish planned town did not extend into this land. As irrigated land it is presently very valuable, allowing double cropping each year. While there is clear mention of irrigated land belonging to the king (*Relación*, 1956: pp. 171, 120, 184), there is no mention of its location, other than being on the lake shore. There are, however, only a limited number of points along the lake shore where such irrigation is feasible and it seems reasonable to expect that it was used so in the Tariacuri Phase.

ZONING: A SUMMARY

Based on the above analysis of zoning in Tariacuri Phase Tzintzuntzan it is possible to state that the urban settlement exhibits a moderate degree of zoning. Most zones are multipurpose, although clear distinctions can be made. These zones and their interpreted functions include:

- I. Residential (with some lithic manufacture and use; possibly some ethnic variation)
 - A. Low status
 - B. Middle status
 - C. High status (with some political, administrative, and religious functions)
- II. Manufacturing (with some residence)
 - A. Blade manufacture
 - B. Non-utilitarian object manufacture
 - C. Scraper-use activity
 - D. Other: featherworking, potting, tanning, sandal-making, flower-working, masonry, carpentry, metalworking
- III. Public Zones
 - A. Religious (with some residence, burial activity)
 1. Primary
 2. Secondary
 - B. Political-administrative (combined with high-status residential)
- IV. Commercial
- V. Agricultural

PLANNING AT TZINTZUNTZAN

This attribute reflects conscious decision-making with respect to the location of the physical components of the settlement. As such decisions are made at several levels, planning can be judged on the basis of (1) individual structures, (2) sectors of settlements, and (3) entire settlements.

The only excavated structures at Tzintzuntzan include those located on the main platform (Tz-25; see fig. 16). The spacing of the five *yácatas*, and

their identical and unusual shape, including several superpositions, attest to careful planning. Edificio B on the main platform (see fig. 17) and the several other structures in the Primary Religious Zone are also indicative of planning on the individual level. Illustrations of residential structures in the *Relación* (see figs. 2 and 3) show single-room dwellings associated with low-status groups and single and multi-room dwellings associated with high-status individuals. Both seem fairly standardized, although minimal planning would be necessary. In general, individual structures were planned, although this planning did not involve any great technological or intellectual complexity (such as involving astronomical orientations or complex architectural feats).

The only sectors of Tzintzuntzan that exhibit deliberate planning are the religious/political zones including the two large artificial platforms (Tz-25 and Tz-29) and the structures at Tz-117. The relationship between the main platform, the structures on it, and the terrace behind it containing the structures of Tz-10 (fig. 16), are too non-random in their distribution not to have been planned. The main platform faces 45° west of astronomical north, and appears to have been determined largely by the slope of the mountain overlooking the settlement and the lake shore. Whether planned or not, the author noted that the platform can be seen from all parts of the pre-Hispanic settlement. The slope and orientation of the slopes seems also to have determined the relationship between the two large platforms.

Because of the great amount of soil erosion and lack of structural remains, it is impossible to ascertain the relationship between structures in the residential zones. Judging from the meager remains, and illustrations in the *Relación* and Colonial maps, it is unlikely that there was any overall zonal planning.

Presently, the entire surface area within the survey zone that is on the slopes of either Cerros Tariácuri or Yaguarato is terraced. They are rock-embanked, non-contour terraces built laterally across the sloping surface of the mountains. These terraces are utilized to slow soil erosion, allow for greater retention of rainwater, and provide flatter surfaces for cropping. As evidenced by the two large platforms, the pre-Hispanic occupants of Tzintzuntzan were experienced in terracing. Both artifacts and stone concentrations appear to be associated with these terraces. In several cases, burials (looted) were found in the

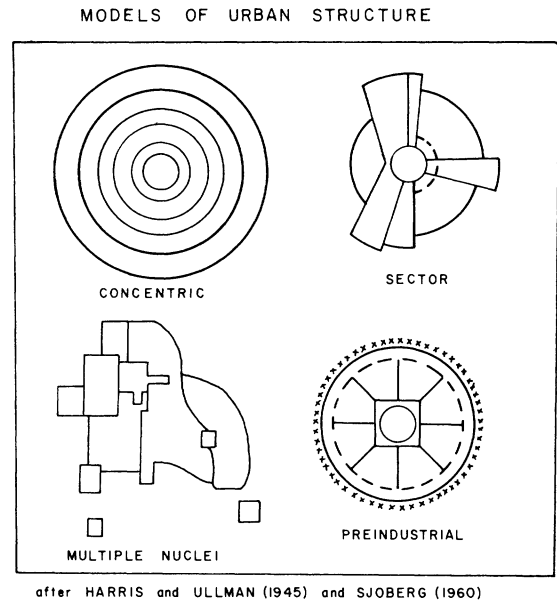


FIG. 21. Models of urban structure.

rear walls of terraces. Therefore, while it cannot be absolutely determined at present, there is a good possibility that the terraces were for habitation and garden plots. In any case, they are related to the contour of the hill slope, with no overall plan evident.

There is no evidence of any planning on a settlement level. While transport and communication networks often form the basis and necessity for settlement planning, there is no evidence for thoroughfares of any sort through the settlement. It is possible that the remains of a cobblestone road connecting Tzintzuntzan with Ihuatzio and Pátzcuaro, and located along the north-south depression which runs between Cerros Tariácuri and Yaguarato may be pre-Hispanic in date. The earliest Colonial maps show no other routes except the Spanish grid plan.

In sum, Tzintzuntzan exhibits planning of individual structures, planning of some activity zones, but no planning of the total settlement.

MODEL OF THE URBAN STRUCTURE

The planning and zoning of urban functions produces in every settlement a unique physical expression on the land. While every settlement can be seen to have an individual geographical structure, geographers and sociologists, in particular, have attempted to detect certain regularities in this structure and the causes for them. From this work have emerged several models of urban

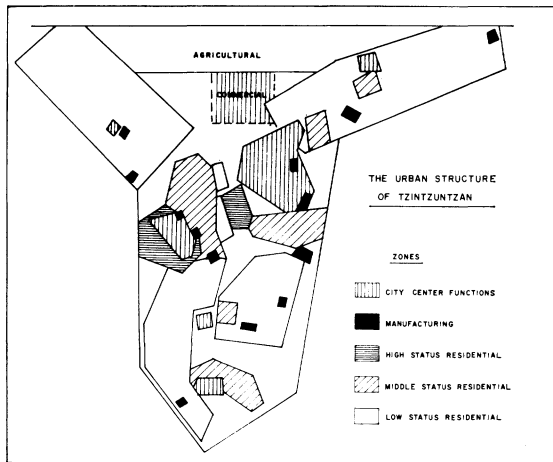


FIG. 22.

structure. In addition, the factors responsible for the generation of these models also have been suggested.

Several descriptive models have come from the field of urban ecology (Colenutt, 1970). Of the four models reviewed here (fig. 21), three were based entirely on data from modern industrial American cities and the fourth was based on data from non-industrial, but primarily European, cities. By comparing the geographical structure of Tzintzuntzan with these models it should be possible at least to begin isolating the factors which determine its urban structure. Additionally, such a comparison may help lead to the construction of other models of urban structure based on non-industrial and non-Western data.

Concentric models: The basis of concentric models is that land uses in a city are arranged in concentric circles around a city center (usually called the Central Business District). From the center outward are found zones of light manufacturing, low-class residential, medium-class residential, high-class residential and then a commuters' zone. Within the center are located the primary commercial, industrial, political, religious, educational, and recreational zones of the settlement. The transport network is essentially radial in pattern. For more detailed description of this model see Burgess (1925), Harris and Ullman (1945), Berry (1964), and Garner (1967).

Sector Models: The basis of the sector model is that the growth within a settlement takes place along main transport routes. In addition, the growth along any particular transport axis usually consists of similar types of land use. Spatially

this results in sectors radiating from the center of a circle, with different land-use zones in each sector. Thus the model proposes a city center (similar to that in the concentric model) surrounded by light manufacturing zones which radiate out to the limits of the city, low-class residential zones which cluster toward the central zone but also reach the city limits, and medium- and high-class residential zones located in sectors beyond the low-class residential zones and extending to the city limits. For more information see Harris and Ullman (1945) and Garner (1967).

Multiple nuclei models: The basis of this model is that there may not be one but several centers in a settlement. The number and location of these nuclei depend on the size, function, and history of each settlement. In this formulation there is still one primary city center, but smaller commercial, political, and industrial zones may be located away from it. Residential zones follow a modified sector pattern. See Harris and Ullman (1945) and Garner (1967) for more detail.

Pre-industrial models: This model, based on Sjoberg's wide-ranging study of pre-industrial cities (1960), is in many ways a combination of concentric and sector patterns of urban structure. Viewing the settlement roughly as a circle, there is a central district dominated by political and religious functions, but including commercial and some industrial functions. Surrounding this is a zone of elite residences (high-class residential zone). At this point sectors of middle- and low-class residential zones exist, extending almost to the city limits. These residential zones are often differentiated by ethnic and occupational groups and may include some manufacturing and commercial activities. Surrounding this are the low-class residential zones, with the entire settlement encircled by a wall, moat, or other defensive zone.

Tzintzuntzan exhibits characteristics of all the models elaborated above (see fig. 22). The two platforms, which together comprise the religious and political center of the city, when combined with the probable market place immediately to the north, take on the form of the pre-industrial city center of the modern "central business district." Very broadly speaking the zoning of the residential areas takes on a concentric pattern with high-, middle-, and low-status zones moving from the center to the periphery of the settlement. The ordering of these zones follows the pre-industrial pattern rather than the industrial pattern of elite

residences located toward the periphery. However, the concentric pattern is highly modified, and many residential zones take on the character of sectors. A few middle-status residential zones, the secondary religious zones, and the manufacturing zones follow multiple-nuclei patterns.

In a factor analysis of various urban attributes, Berry (1964: pp. 157–158) has isolated three clusters which relate to the urban models described above. One cluster of attributes was that relating to social rank and was based on income, education, occupation, and wealth variables. This cluster Berry proposed follows the sector model. A second cluster related to family status and degree of urbanization. It was based on the variables of family structure, fertility, type of household, and position of women in the labor force, and was related to the concentric model. The final cluster was called a segregation dimension and was based on the ethnic and racial structure of the population, the age and sex composition, and the level of physical deterioration and blight in a city zone. There was no model which related to this cluster, and historical factors are assumed to be the controlling elements.

Using this analysis, it might be proposed that the residential zones of Tzintzuntzan are determined by a combination of variables relating to family structure and social rank. The high degree to which the Tzintzuntzan pattern does not follow concentric patterns, but does approximate sector and multiple nuclei patterns, suggests that social-rank variables were more significant in the zoning of residential and associated religious and manufacturing activities. The characteristics which fit none of the first three models, such as the residence zone iv, may be exhibiting the segregation dimension based on ethnic variation. Except for the absence of a defensive zone, the minimal amount of ethnic variation, and the extremely peripheral position of commercial activity, Tzintzuntzan broadly approximates the pre-industrial model suggested by Sjöberg.

THE URBAN SYSTEM OF TZINTZUNTZAN

The direct relationship between the spatial expression of zoning and planning, and the structure and functioning of such behavior, can now be utilized to construct the basic urban system in Tzintzuntzan. To the extent that future excavations within the urban zone of Tzintzuntzan and future study of the systems of settlements within

the Lake Pátzcuaro basin will amplify or correct the view presented here, the following analysis can be seen as a series of small-scale hypotheses, each of which can be subjected to examination with new evidence.

Economic subsystem: With respect to the economic structure of Tzintzuntzan in the Taríacuri Phase there is a small, but suggestive amount of information available. A significant part of the economic systems of urban settlements generally involves the production of goods and services. The evidence presented above indicates clearly that lithic implements were produced within the settlement at workshops and included prismatic blades, flakes, and scrapers. In addition, obsidian and basalt implements, including flakes, blades, and projectile points were produced in residential zones. Various non-utilitarian objects were also produced in the settlement in workshops (type 2). Specialized artisan groups described in the *Relación* (1956: pp. 176–182), and believed to be located near the king's residence (see other specialized manufacturing), also produced both utilitarian and non-utilitarian objects relating to bow-making, carpentry, woodworking, painting, featherworking, leatherworking (see type 3 workshop), fishing, hunting, masonry, pottery-making, flower-working, sandal-making, stair-making, tanning, banner-making, metal-working, canoe-making, and cotton-jacket-making. To some unspecified extent all the products of these activities were produced or in some stage of processing in Tzintzuntzan. Within the agricultural zone of the settlement and in garden plots within the settlement limits the following products were probably grown: maize (red, white, and variegated), amaranth, kidney and scarlet runner beans, red and green chilis, *capulín*, gourds, maguey, nopal, *chayote*, tobacco, tomato, *zapote blanco* and yucca (*Relación*, 1956: pp. 24, 96, 175–177, 181–187). The primary services produced in the settlement were those activities of the bureaucratic functionaries of the political and religious hierarchies, medicine men, custodians of the palace, storytellers, merchants, spies, messengers, and couriers (*Relación*, 1956: pp. 170–190).

There is some evidence for the spatial clustering of some productive units in the lithic workshops within the settlement. But it is not possible to correlate these with family, lineage or non-kin based units. Ethnohistoric and ethnographic evidence suggests that occupation groups were spatially localized in wards or barrios (Van Zant-

wijk, 1967: pp. 42, 69, 93-93). However, basically there are few data relevant to the structure and membership of productive units.

The evidence of planning and zoning in the city reflects in part the technology of economic exchange. The lack of formal street patterns would have made intra-settlement exchange slow and cumbersome. If there was a major north-south route through the center, it would have provided valuable contact between the lake shore and southern extents of the city. The placement of the market place and the lack of standardized internal transport networks probably attests to the importance of the lake as a means of transport, communication, and distribution of goods and services.

The economic means of distribution probably involved both market systems and redistribution networks. The market system is documented several times in the *Relación* and probably existed within the settlement as well (1956: pp. 39, 83, 91, 144, 213) (see commercial zone). The lack of a reference to its presence at Tzintzuntzan suggests that it was not as significant in the economic structure of the city as in other like settlements of Mesoamerica at this time. Redistribution networks, however, with the king at the center, are well documented in the *Relación* (1956: pp. 151, 170, 173, 174, 177, 213) for Tzintzuntzan. Tribute was collected within the city and from other settlements in the Tarascan State in the form of local goods (foods, clothing, precious metals, and feathers), services to the state (military, labor), and the maintenance of political appointees and temple lands. Within the city the zones in which this tribute was collected included graneries, chests in the palace, and residences of special deputies. The smallest unit of collection was 25 families in 1525. Goods were redistributed by the king and his administration in the form of religious offerings, support for the army, major feasts, gifts to foreign emissaries, and support for his household.

Both the archaeological and ethnohistorical data relevant to zoning and planning within the city clearly indicate that there was differential distribution of both land (agricultural and residential) and material objects. These differences appear to be associated with the structure of social status and rank within the urban settlement.

Social subsystem: Although the social structure of the city is more evident from the previous analyses than the economic system, there is no present evidence from which the structure or role of kinship groupings can be directly assessed. However,

the presence of territorial groupings with some kinship functions can be suggested. There is considerable evidence for the presence of wards or barrios within Tariacuri Phase Tzintzuntzan, and there is evidence that these territorial units had marriage-regulating and religious and ceremonial functions in the center. For both upper- and lower-class residents, marriage was officially recognized only if it took place within the same ward (*Relación*, 1956: pp. 211, 216). In 1593 Tzintzuntzan had 15 functioning wards, each with a chapel (Van Zantwijk, 1967: p. 226). In 1945 the inhabitants could remember 13 and locate 11 (Foster, 1948: p. 26). It is not possible to locate these wards in the pre-Hispanic city limits because of the confusion of names and places over the last 350 years. However, four Colonial chapels were located in the survey and three were adjacent to "secondary religious zones." These sites were interpreted as local religious centers within the residential zones of the city. I suggest that these sites represented small religious centers, such as temples, within each ward, and, like ethnographically recorded *wapánekwa* (Van Zantwijk, 1967: pp. 81-95), formed part of the structure of intra-settlement religious ceremonies. Tzintzuntzan would have had 15 or more endogamous, territorial units with ceremonial functions. Occupational specialists may have been located within separate wards. However, within Tzintzuntzan these wards had no land-regulating function; that was done on a settlement-wide basis (*Relación*, 1956: p. 185).

The *Relación* indicates that there was a second level of territorial grouping within the settlement. This unit consisted of 25 households, was used for tribute collection, labor for public works, and taking censuses (1956: p. 173). It is likely to have been a subdivision of a ward, presently called *manzana* in Michoacán. There is no archaeological evidence for this unit and it may have been a later addition to the administrative organization of the city.

Based on the population estimate for the city, the number of people per household and the number of wards, and size of subwards (Pollard, 1972), a rough estimate would posit about 1,600-2,300 persons in each ward, and 10-19 subwards per ward with 125-150 persons in each subward.

The zoning of residential units within the settlement can best be viewed as the territorial expression of status groups. Based on the evaluation of urban zoning, at least three social groups can be recognized. In the *Relación* (1956) four social

classes are distinguished: the king (*Irecha, Caz-onci*) and lords (*señores*) located in residence zones ii; the nobles (*principales*) located in residence zones iii; the commoners (*la gente baja*) located in residence zones i; and slaves, who were probably located in the residences of the king, lords, and nobles. Each class was distinguished by dress, household structure, marriage, wealth, responsibilities and privileges, and access to occupations; there was minimal movement between these classes. Based on the archaeological evidence it is possible that some ethnic divisions existed in the city (residence type iv). The ethnic unit discussed in type iv occupied both low- and middle-status residence zones. However, it is difficult to state how ethnic units articulated with the social stratification of the population.

Religious and political subsystems: Since urban zoning reflects the degree of embeddedness of the political and religious subsystems within other subsystems of the settlement, it also reflects the degree of centralized power in the settlement. Further, the degree of power of the urban administration is also related to urban planning as reflected in its ability to carry out planning decisions once they are made (see Hardoy, 1968: p. 11). Thus, together with the nature of zoning, planning can reflect the relative structural importance of various urban functions. Based on spatial distribution and planning expenditures (in terms of labor and materials) it can be hypothesized that political and religious functions were central to the functioning of Tzintzuntzan while economic functions were heavily embedded within other systems or peripheral to the basic power structure. Thus, for example, the political and religious centers (Tz-25 and Tz-29) were centrally located, separately zoned activity areas of relatively large size, and marked by a rather high degree of planned structures, features, and areas. The commercial and manufacturing zones, on the other hand, were spatially dispersed, and peripherally located. There was no conscious planning associated with any of them.

While the religious subsystem was clearly distinct in the zoning of functions as revealed in structures, features, and artifacts, the political subsystem was heavily embedded in the social structure of the upper classes. There were no separate buildings for judicial, administrative, or legislative functions. All were part of the multipurpose residence zones of the king and lords.

From the *Relación* it is clear that the king and lords, the upper social class, occupied the dominant positions within the political administration as their primary status and were only secondarily considered priests capable of performing certain important ceremonies such as ritual sacrifice (see Pollard, 1972, and López Sarralangué, 1965, for detailed discussions of the political and religious hierarchies). The political system dominated the religious hierarchy, utilizing the ideological system to reinforce political power and legitimacy. The two prominent archaeological features of the settlement, the two large artificial platforms, were associated with these two powerful components of the city—the king's palace and the temples of Curicaueri. Irrespective of past roles, at the time of Spanish conquest, the political organization was the dominant subsystem of the urban settlement. The Spanish may even have recognized this in the placement of the first chapel on the platform of the king's palace (Santa Ana). In fact, despite the turning of Tzintzuntzan into the seat of a bishopric between 1525 and 1540, the temple platform was never destroyed, only abandoned.

It is possible that in describing the territorial social units of the settlement, one mechanism for this highly centralized integration of the settlement has been detailed. The archaeologically visible unit, the ward or *barrio*, has been archaeologically and ethnohistorically associated with ceremonial and marriage regulation activities. Both of these functions were controlled by the religious structure of the settlement. A second, smaller unit, or subward, was described in the *Relación*. This unit, controlled by the *ocámbecha*, a political functionary, was associated with tribute collection, labor groups, and census units, and was possibly used for the formation of army units (Pollard, 1972: p. 65). All of these are functions of a state. This suggests that as far as the political organization of the settlement was concerned, the ward was a weak unit, and the real administrative levels of Tzintzuntzan were the subward and the entire settlement, the latter controlled by the king. It is suggested that the subward level was created by the administration for the purpose of circumventing the ward structure which was already controlled by the religious hierarchy, thereby increasing the central control of the political system.

TZINTZUNTZAN AS AN URBAN SETTLEMENT

In the preceding analysis it has been assumed that there is a direct relationship between the pat-

terning of structures, features, and artifacts and the patterning of human behavior. It has also been assumed that zoning and planning of urban settlements reflect this patterning. The particular pattern of urban zoning and planning at Tariácuri Phase Tzintzuntzan has been discerned and compared with other generalized models of urban structure. Based on these analyses, the human behavior with which this patterning was probably associated was discussed in terms of the economic, social, political, and ideological subsystems of the settlement. Using the tentative conclusions of these analyses, it is possible to propose certain hypotheses about the nature of Tzintzuntzan and its relation to urban evolution.

Every urban settlement exhibits certain attributes which are related to particular environmental, historical, or cultural features of the settlement. It is these attributes which distinguish the structure and functioning of every city and make it impossible to construct a single meaningful model of all urban systems. On the other hand, in the processes of urban evolution, whereby urban settlements become increasingly large and complex, both in their internal structure and their external relationships, it should be possible to detect regularities in development.

The attributes of zoning and planning at Tzintzuntzan reveal both the regularities of urban evolution and particularities of this urban settlement in its development. It can be taken as a postulate that as urban settlements evolve, there is an increase in the number and kinds of zones, and in the degree of their specialization. Similarly, as urban settlements evolve, there is also an increase in the degree and the inclusiveness of planned areas. On this basis one can evaluate Tzintzuntzan. The city exhibits a moderate degree of zoning with primarily multi-purpose units. The number of zones is limited and they are relatively unspecialized. Planning is evidenced on the level of individual structures, of some sectors, but not on the overall settlement level. In both cases, the implication is that Tzintzuntzan was a small, relatively less complex urban form at an early phase in urban evolution.

At the same time, the attributes of zoning and planning suggest the particular processes that made Tzintzuntzan unique. The initial growth of Tzintzuntzan as an urban settlement appears to have been generated by political and not economic factors. This is in sharp contrast to other Meso-

american centers such as Teotihuacan (Millon, 1973) and Tenochtitlán (Calnek, 1972). Jane Jacobs (1969: p. 143), discussing cities whose chief export is government, suggests they have much in common economically with company towns. Such urban centers can be characterized as administrative cities, and are probably associated with larger, complex political systems. It is probable that, at the time of the conquest, Tzintzuntzan was adding economic functions to the political and religious functions it already had exported. The clustering of economic activities near and within the king's residence could easily have served as a stimulus to economic development, particularly in the export of highly processed and scarce resources like feathers, capes, polychrome pottery, and copper, silver, and gold objects. Thus we can view Tzintzuntzan as an administrative city whose urban economic functions were a by-product of the centralizing power of its political functions. In addition, there remains the possibility that Tzintzuntzan was initially founded as a ceremonial center, such as proposed for Chinese cities (Wheatley, 1971), which later took on political functions as it developed into an urban entity.

By analyzing zoning and planning at Tzintzuntzan, it has been possible to suggest that the capital of the Tarascan State was an administrative city. That the capital was administrative in nature has certain implications for our understanding not only of the development of cities in this region, but of the political states in which they grew. For these reasons, future research should focus on the analysis of other urban systems in the Pátzcuaro basin, and their relationships to each other. Of particular concern should be the location and development of economic centers within the basin.

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