ACAMBARO: Frontier Settlement on the Tarascan-Aztec Border

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with contributions by David Chodoff, John Hyslop,
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To Sam

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Preface

There is an oddity in Mesoamerican studies: the Tarascans. They are considered the "foreigners" in Mesoamerica. Their language does not connect to others, their clothing is different, metal is their peculiar resource. But most singular, they played the Aztec warfare game and did not lose. It was the last that captured my attention. The place of investigation was obviously the Tarascan-Aztec frontier. I learned there how the Tarascans ran their frontier and how management skills, not simply military technology, won the wars and kept the territory intact. It is perhaps administrative organization, not cultural traits, that made the Tarascans an anomaly in Mesoamerica. That quality permeated and characterized the Tarascan cultural system, and it is seen clearly on the frontier where the Tarascans did not simply engage in battle but conducted administered warfare.

In 1971, 1972, 1973, and 1980 I directed a series of field surveys on both sides of the frontier and in the area between. Small-scale test excavation was conducted on the Tarascan side of the frontier in 1971. In 1972 and 1973 a study of Acambaro in the state of Guanajuato was undertaken. Although the site had not been the subject of previous archaeological investigation, it has been well-known locally and had been badly potted for decades. Some of the potholes had been dug long enough ago so that they were not indicated by surface features. Nevertheless, despite these difficulties, information on stratigraphy and chronology, including the chronological relationship among artifacts, were obtained from uncontaminated whole or portions of excavation units. Because of the limits of the goals of this small-scale investigation and of the conditions in the field which constrained the investigation, the field work should be considered the first stage in a large-scale archaeological investigation of the site and the Tarascan eastern frontier.

The archaeologists and art historians, then graduate students, who participated in these investigations were R. B. Brown, David Chodoff, Charlotte Evans, Charles Florence, Patricia Garbe, John Hyslop, Carlos Lira-Coppo, Helen Perlstein Pollard, Michael Snarskis, and Lee Anne Wilson. Contributions to this volume have been made by David Chodoff (faunal remains), John Hyslop (petroglyphs), Helen Perlstein Pollard (Lerma River Valley survey), Michael Snarskis (ceramics), and Lee Anne Wilson (figurines). I also appreciate the good work of Lizzie Glazer and Gabriel Gorenstein who made important contributions to the administration of the expedition.

The data were analyzed primarily in Guanajuato, and the bulk of the collection is stored in the Museo Alhondiga de la Granaditas. For this I wish to thank Lic. J. Bejarano Eroso, Delgado Estatal del Instituto Nacional de Antropología e Historia en Guanajuato for his professional hospitality and guidance. The sample collection is stored in the archaeology laboratory at Rensselaer Polytechnic Institute.

An important part of this study, although the results do not appear here explicitly, is the Tarascan-Aztec war game designed by Neil Goldberg. His knowlege of military history and of war games led to

his invention of the board game, Tarascan-Aztec War, which was played to the edification of all participants whom I thank for their time in service. Each game lasted about eight hours and the "Tarascans" and "Aztecs" learned about the effect of terrain, the importance of the location of frontier sites, and the manipulation of forces of varying size by the coordination of forces from different locations. Critical in the conduct of the war was communication among army units and intelligence about the enemy's strategy and tactics. The outcome of the war games was as unequivocal as in history. Just as there was no Tarascan defeat on the field of battle, there was no Tarascan defeat in the archaeology laboratory.

I also wish to thank Thomas McGovern who served as military advisor. His excellent knowledge of Old World military history and warfare and his understanding of underlying principles was of invaluable aid to me.

Professor Robert La Fleur of the Department of Geology at Rensselaer Polytechnic Institute discussed with me the sections on landscape and stratification and I thank him for his insightful interpretations and his cautions and corrections. I thank Professor Dora Crouch of the School of Architecture whose breadth of knowledge of architectural history made her comments on the Chivo architecture particularly valuable to me. I am grateful to Professor K. Jack Bauer who placed Tarascan tactics in a larger context. The responsibility of the present state of these sections, however, is entirely my own.

I am glad to have the opportunity to express my appreciation to Nancy Babich, Sandy Charette, and Carol Marro who worked diligently and creatively on the production of the manuscript.

I appreciate the particular artistic talents of Kathleen Borowik who drew the maps and profiles, Judy Hammond who drew the artifacts and plans of structures, and Jo Goldberg who drew artifacts and profiles. Athan Kuliopolous drew the draft version of the topographic map of the frontier and was innovative in devising techniques for transposing maps of different scales and meticulous in conveying meaningful features.

The field seasons of 1971-1973 were supported by the Columbia University Council on Research in the Social Sciences. Permission to undertake the work was granted by the Instituto Nacional de Antropología e Historia, Departamento de monumentos préhispanicos. I thank Eduardo Matos M. for his aid and cooperation in enabling me to carry out the project.

Shirley Gorenstein

Chapter I

Introduction

Among the handful of great Prehispanic civilizations in Mesoamerica at the time of the Spanish Conquest was the Tarascan. The Tarascans controlled much of west-central Mexico. The eastern frontier of their territory faced and paralleled the western Aztec frontier. The core of the Tarascan civilization was in the Lake Patzcuaro Basin in the state of Michoacan. By the Protohistoric period (A.D. 1450-1520) the 929 km^2. Lake Patzcuaro Basin had a productive environment; a large, dense population; and effective economic, social, and administrative systems.

The Basin was dominated by Lake Patzcuaro and the open water, marsh, and lakeshore environmental zones. In higher altitudes above the floor of the Basin were the sierra slopes with pine and pine/oak vegetation and the alpine zone with fir forests. These zones were the sources of a wide range of products. Maize, beans, chile peppers, amaranth, squash, and temperate-climate fruits were cultivated. Among non-edible organic resources were wood, maguey fiber, non-tropical bird feathers, and, possibly, tobacco. Fish, deer, rabbit, duck, and turkey were important faunal resources. Basalt and red and white clays were the major inorganic resources within the Basin.

The 60,000-100,00 Protohistoric population of the Basin were distributed among approximately 91 settlements, which have been divided into five classes ranging from city to hamlet. The only settlement in Class 1 (city) was Tzintzuntzan with a population of between 25,000 and 35,000. In Class 2 were three settlements, Erongariquaro, Ihuatzio, and Patzcuaro, each with a population ranging between 3,000 and 5,000. There were about 22 settlements with population ranges between 1,000 and 1,500 in Class 3, about 40 settlements with population ranges between 100 and 500 in Class 4, and about 25 settlements with populations between 30 and 80 in Class 5. Approximately 86% of the population of the Basin were in settlements with populations of more than 1,000 and about 37% of the population was in Tzintzuntzan itself. (This is a different population distribution pattern from the Basin of Mexico where 50% of the population were in settlements of 1,000 or more and 25% were in Tenochtitlan.) A settlement structure analysis that considers the relationship between population size and rank, shows a primate distribution, that is, a distribution in which the largest center has more than twice the population of the next largest center. Indeed, Tzintzuntzan, with a population size at least five times greater than the next-ranked centers and with a large number and range of functions was a strongly primate urban center.

The history of how Tzintzuntzan became the primate center of the Basin and how it shaped and was shaped by Tarascan society is unique in Mesoamerica, but understandable when seen in the context of its economic, social, and administrative systems. The complex Tarascan civilization began when Tzintzuntzan, one among five polities in the

Basin, gained control of the major zone of Basin irrigable land. That exclusive access to the richest resource area in the Basin combined with legitimacy, conferred by its resident royal elites, gave Tzintzuntzan the "edge" over the other polities. It brought them under Tzintzuntzan's control without the necessity of coordination and negotiation. The major centers of the polities became administrative centers in the service of Tzintzuntzan. Tzintzuntzan then created four additional administrative centers which were entirely beholden to it for their existence. The result was an administrative system that was highly centralized with Tzintzuntzan at its head. The eight next-ranked centers were legitimatized by resident elites who were not, however, royal elites. The only other settlement with resident royal elites was given no place in the administrative system. Power over the Basin was not shared with either the center with the resident royal social class or with the lower-ranked centers but was held exclusively by the primate center, Tzintzuntzan.

Tzintzuntzan was also the major religious center of the eight religious centers in the Basin. One of the most important Tarascan religious acts followed the decision to go to war. Priests at Tzintzuntzan lit great bonfires and, once seen, were duplicated by the priests at the other centers. All 91 settlements were able to see the bonfire signals from one or another of these eight religious centers. What is remarkable about the Tarascan religious system is how much it was devoted to carrying out political decisions and to working within the administrative system.

Tzintzuntzan was a rank 1 center in the Basin economic network. As a market it served 56% of the Basin settlements and 67% of the population including most of the members of the elite social class. There were two other markets, one inside and the other outside the Basin. Neither of these served as large a proportion of the settlements or population, and neither marketed the number or range of elite goods as Tzintzuntzan. Although Tzintzuntzan was not a government market, the administration had and sometimes exercised the right to open and close it.

Tzintzuntzan was a highly accessible settlement in the transport network. Only one other settlement of the 91 was more accessible, and this appears to have been an artifact of that settlement's prominence in the centuries before the Protohistoric period.

Tzintzuntzan's first-rank place in the administrative and economic networks, and, in effect, in the transport network; its prominence as a religious place; and its locus as the residence of the royal elite gave it multi-functions, which fostered its development as a primate urban center. This primate center was fertile ground for the growth of a specialized and highly-centralized administrative network which dominated Lake Patzcuaro Basin society. The idea of corporateness became the main component of the ideology of the political system. Those lessons learned in the development of Basin society, the core of Tarascan civilization, were put to work in the territory.

Territorial expansion of the Tarascan civilization began early in the fifteenth century and extended as far as and included Lake Chapala in the west, the Lerma River in the north, beyond the Balsas River Valley in the south, and in the east to settlements roughly on the same longitude as Acambaro between the Lerma and the Balsas Rivers (Figure 1). While the motivation for this expansion is not known, two effects are easily seen. The expansion brought a large number and variety of resources into an established economic network, and these resources sustained the large, dense population within the core, a population that was far beyond its carrying capacity. The second was that the military defense of the core was carried out more than 100 kilometers away. (This description and interpretation of Protohistoric Tarascan civilization is based on Gorenstein and Pollard 1983.)

Expansion into territory beyond the core is a process which creates frontiers, those forelands of the territory that abut the outlands. When the frontier separates the developed and undeveloped areas of a single state, it is a settlement frontier. (The American frontier is a settlement frontier much studied by historians, more recently by archaeologists such as Lewis 1984) When it separates individual states or polities, as it did the Tarascans from the Aztecs, it is a political frontier. (The Chinese frontier marked by the Great Wall [Lattimore 1962:477] and Roman frontiers in Britain [Salway 1965] were political frontiers.) Unlike the boundary which is an exact, *de jure* borderline, the frontier is a zone because it is in flux or because the concept of boundary is not employed. The frontier is outer-oriented, directed towards the outlying area, which is the source of danger. As a political frontier, it has military purposes. The frontier keeps enemies out not on its own behalf (although that is an effect), but on behalf of the core, and, for this reason, is supported by the core. Effectiveness in this role requires that the frontier be controlled and bound to the state (Kristof 1959 and Prescott 1965, 1972).

As political power moves out from the core it suffers from dispersion and dissipation. The greater the distance from the source of power, the greater the loss of effective power. Frontiers have been well-known for developing their own interests, often contrary to the interests of the government in the core, which represents the state. But the frontier, although it is geographically most distant from the core, is, paradoxically, most important to its existence. It is the frontier that is charged with representing the state politically and militarily to the adjacent foreign state.

The administrative system of the state is charged with sustaining political power throughout the territory. It moderates the distance and the dispersion/dissipation effect by establishing mechanisms of control. A well-developed centralized administrative system has the mechanisms to sustain the government's power not only throughout the territory, but also on the frontier.

This study of the frontier settlement of Acambaro on the Tarascan territory's eastern frontier is based on both archaeological and ethnohistorical data. It is the study of the Tarascan state's solution to the problem of sustaining political power in its territory by controlling

its frontier. The particular solution not only tells us about the nature of the frontier but also about the nature of the state. Accordingly, the frontier settlements of a highly-centralized political system like the Tarascan should have certain characteristics. It is expected that the local administrative system would be established by and closely tied to the state administrative system, and the frontier settlements would be high-ranked central places in the administrative system. They also would have a considerable capacity for military action since they would wield it not on their own behalf but on behalf of the state.

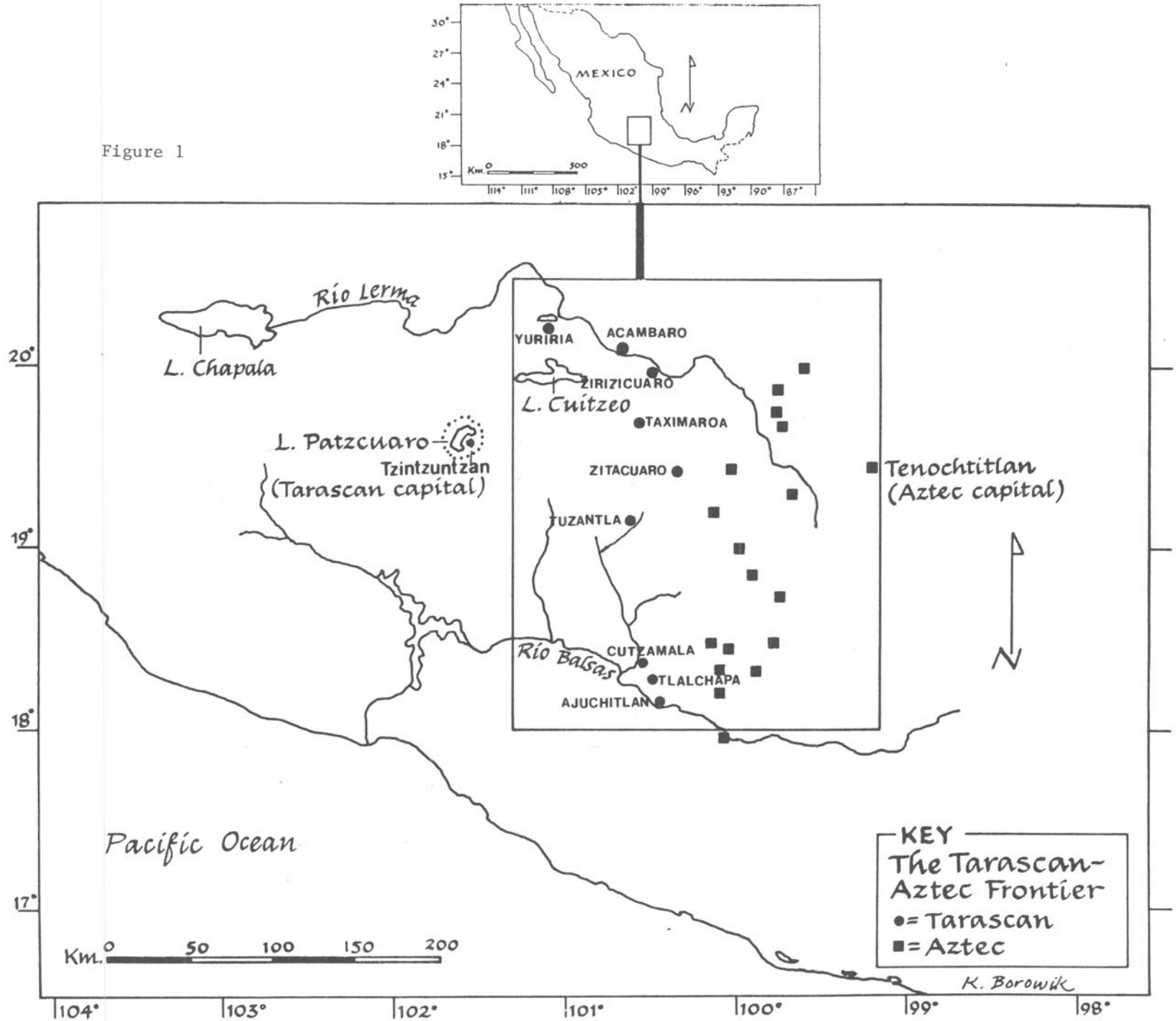
The Tarascan-Aztec Frontier (Figures 1 and 2)

In Moctezuma's regal Aztec judgment the Tarascan civilization was the only other power legitimatized by the gods and recognized by himself (*Relación de Michoacán* 1956:243-244). His acknowledgment of the Tarascan civilization was undoubtedly influenced by the geography of the two lying almost side by side and in an uneasy relationship achieved after several decades of warfare during which there were no major political victories.

Several things are known through ethnohistoric sources about the zones formed by the fronting of the Tarascan and Aztec territories. Tarascan frontier settlements are identified as having been taken over in the expansion of the territory and as being places that marked arrival in Tarascan territory. These settlements were Yuriria, Acambaro, Maravatio, Ucareo, Araro, Indeparapeo, Uasmaeo, Taximaroa, and Tuzantla (*Relación de Michoacán* 1956:154-155, 248-250). In addition the *Relación de Celaya* names Acambaro as a frontier settlement and the *Relación de Tuzantla* identifies Tuzantla (*Relación de Celaya* 1945 and *Relación geográfica de Tuzantla* 1965). In addition Ajuchtitlan and Cutzamala are identified as frontier settlements in the *Relación de Asuchitlan*. Cutzamala is named as a frontier settlement also in the *Relación de Sirandaro y Guayameo* (Paso y Troncoso 1945-1946, *Relaciones geográficas* 1958). Zitacuaro is mentioned along with Maravatio by Rea (1643: 33,81) in his description of a major Tarascan-Aztec battle and in his identification of settlements on the Tarascan eastern frontier. Brand (1943:42 without a direct reference to the primary source) identifies, in addition, "Chapultepec near Tlalchapa."

An important topographic frontier marker is the Lerma River. The Tarascan ruler, the Cazonci, consulted with his counselor at the news of the Spanish approach to Tarascan territory. He said hopefully "...quiza no llegaron sino hasta el río y se tornaron por el tiempo que hace de aguas... ." (Place names identify the river as the Lerma. *Relación de Michoacán* 1956:248-249). Since the Lerma River is a marker of the frontier zone, settlements on the Lerma are in the frontier zone as well. Zirizicuaro is on the Lerma River less than ten kilometers from Maravatio. The archaeological field work, discussed below, identifies Zirizicuaro as the site of the frontier settlement known as Maravatio in the ethnohistorical literature.

Figure 1


MEXICO
Km. 0 500
Rio Lerma
L. Chapala
YURIRIA
ACAMBARO
ZIRIZICUARO
L. Cuitzeo
TAXIMAROA
L. Patzcuaro
Tzintzuntzan
(Tarascan capital)
ZITACUARO
Tenochtitlan
(Aztec capital)
TUZANTLA
Rio Balsas
CUTZAMALA
TLALCHAPA
AJUCHITLAN
Pacific Ocean
KEY
The Tarascan-Aztec Frontier
●= Tarascan
■= Aztec
Km. 0 50 100 150 200
K. Borowik
20°
19°
18°
17°
104°
103°
102°
101°
100°
99°
98°

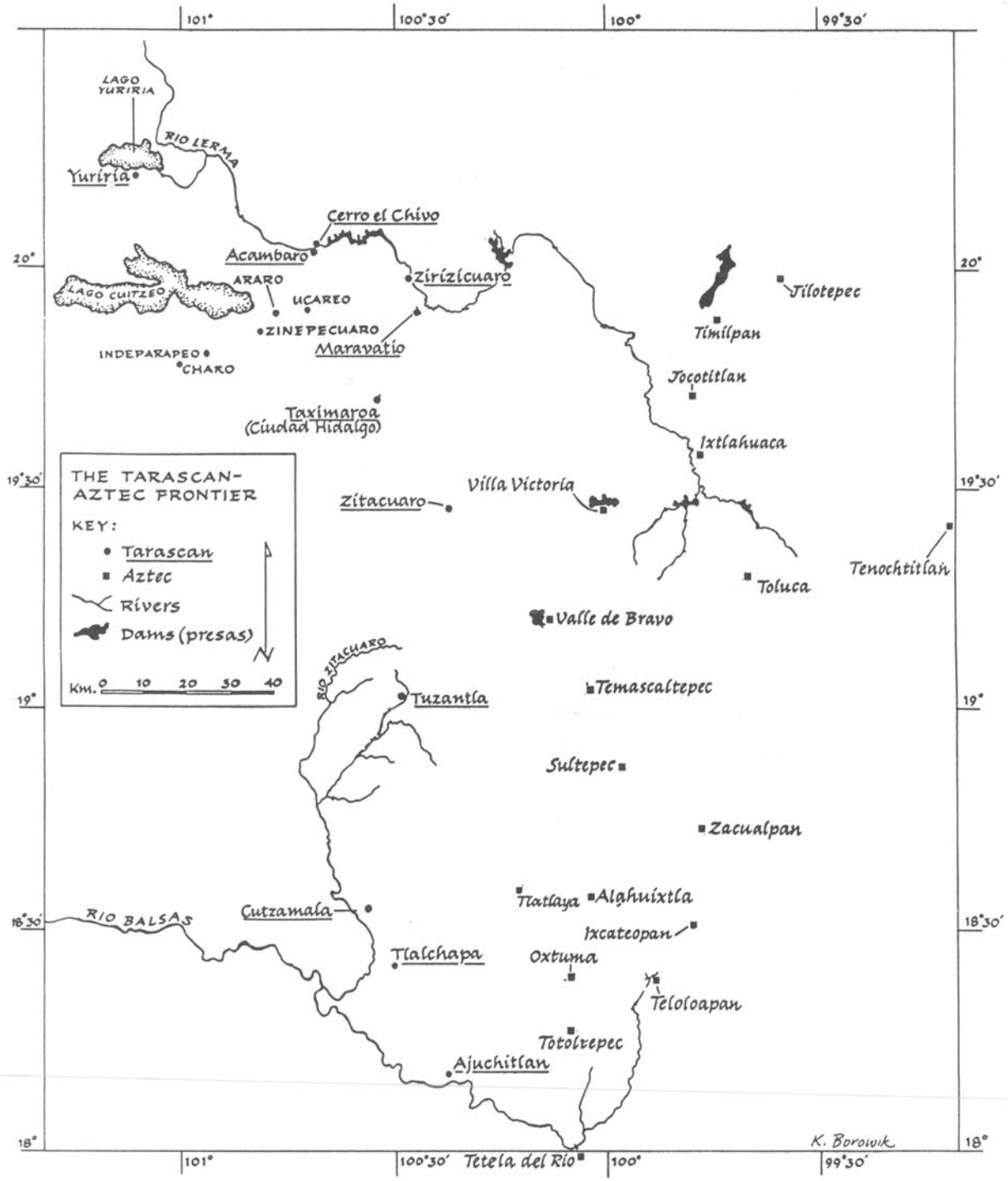

101°
100°30′
100°
99°30′
20°
19°30′
19°
18°30′
18°
LAGO YURIRIA
RIO LERMA
Yuriria
Cerro el Chivo
Acambaro
Zirizicuaro
LAGO CUITZEO
ARARO
UCAREO
ZINAPECUARO
Maravatio
INDEPARAPEO
CHARO
Taximaroa (Ciudad Hidalgo)
Tilotepec
Timilpan
Jocotitlan
Ixtlahuaca
Villa Victoria
Zitacuaro
Toluca
Tenochtitlan
Valle de Bravo
RIO ZITACUARO
Tuzantla
Temascaltepec
Sultepec
Zacualpan
Tlatlaya
Alahuixtla
Cutzamala
RIO BALSAS
Ixcateopan
Tlalchapa
Oxtuma
Teloloapan
Totolapec
Ajuchitlan
Tetela del Rio
THE TARASCAN-AZTEC FRONTIER
KEY:
Tarascan
Aztec
Rivers
Dams (presas)
Km. 0 10 20 30 40
K. Borowik

Figure 2

These settlements outline the frontier zone. The inner settlements of the frontier zone were Ucareo, Araro, Indeparapeo, Uasmaeo (identified as 3 leagues east of Matalcingo which has been identified as present-day Charo by Corona Nuñez in his commentary in the *Relación de Michoacán* 1956:249 footnote 26) The settlements of the outer frontier zone were Yuriria, Acambaro, Zirizicuaro, Taximaroa, Zitacuaro, Tuzantla, Cutzamala, Tlalchapa and Ajuchitlan.

The Aztec frontier zone that faced the Tarascan was marked from north to south by Jilotepec, Timilpan (Titlmilpa), Jocotitlan, Ixtlahuaca, Villa Victoria, Valle de Bravo, Temascaltepec, Sultepec, Zacualpan, Tlataya, Alahuiztlan, Ixcateopan, Oztuma, Teloapan, Totoltepec, and Tetela del Rio (Paso y Troncoso 1905 [*Relaciones de Ichcateopan, Acapetlaguaya, Alahuistlan, Ostuma, Tetela del Rio, Teloloapa, Tutultepec*]; Paso y Troncoso 1906 [*Relaciones de Minas de Temazcaltepec, Minas de Sultepec*]; Durán 1967, vol.2 ; Armillas 1942-1944; Barlow 1949, Map based on the Matricula de Tributos).

The area from the Tarascan to Aztec frontier zones was inhabited by different ethnic-linguistic groups. The *Relación de Michoacán* (1956:248) notes the presence of Otomi, Matlatzincas, Cuitlatecos, and Chichimecs. The *Relaciones geográficas* of 1579-1585 report that the languages spoken in the intermediate zone and on the Tarascan and Aztec frontiers were Cuitlatec, Tarascan, Mexicano (Nahuatl), Otomi, Mazahua, Chichimec, Tuztec, Chontal, Mazatec, Iscuca, and Matlazinca (Harvey 1972:279-297). There were Tarascan and Chichimec speakers at Yuriria and Acambaro; and Tarascan speakers at Cutzamala and Tuzantla (*Relación geográfica de Tuzantla* 1965) and, surprisingly, across the intermediate zone at Aztec-held Sultepec. Acambaro and Tuzantla had Mazahua as a common language. Otomi was spoken at both Acambaro and Aztec-held Jilotepec and very likely across their intermediate zone. Cuitlatec, an unclassified language, was spoken at Ajuchtitlan and across the intermediate zone at Aztec Tetela del Rio. Aztec-held Temascaltepec, Sultepec, Alahuistlan, Ixcateopan, Oztuma, Toltoltepec, and Teloloapan had either or both Nahuatl and Chontal in common. The area of the Tarascan and Aztec frontier zones was one of a complex weaving of cultures and languages and therefore of complicated social and political identifications.

Although the ethnohistory identified frontier settlements, it gave no locational information on position and physical characteristics, which is critical in determining the structure and function of a political frontier. The archaeological survey along the Tarascan eastern frontier zone, between Acambaro and Tuzantla, was undertaken in order to locate those sites named in the ethnohistoric sources and determine their physical characteristics (particularly in regard to military strategy and tactics) and their position in relation to water and land routes both across the Tarascan-Aztec frontier and across the Tarascan territory into the core. Five sites were located. There were Acambaro, Zirizicuaro (Maravatio), Taximaroa, Zitacuaro, and Tuzantla.

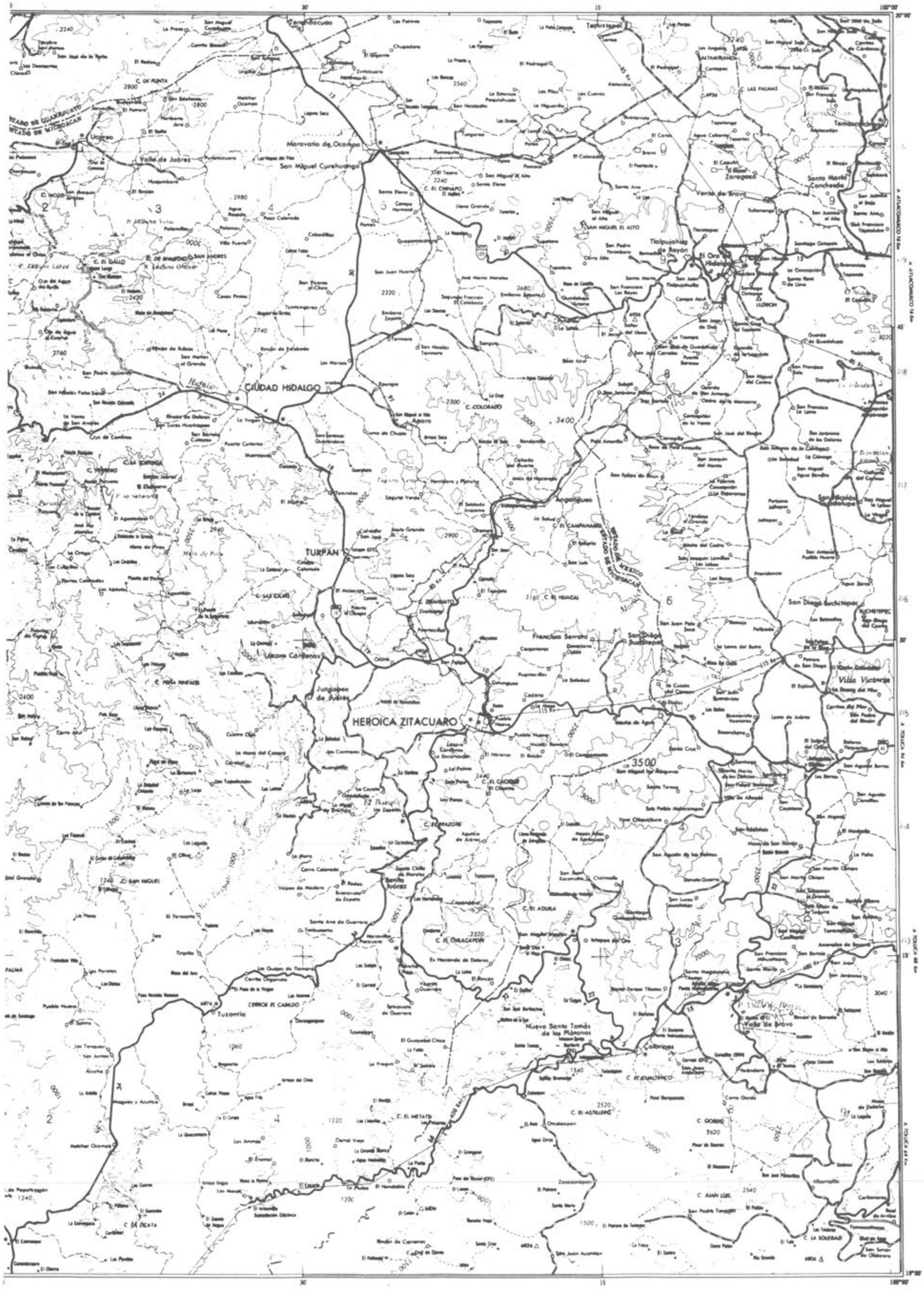
The survey was guided by ethnohistorical data, maps (CETENAL topographic map series 1:50,000, Dirección de Geografía y Meteorología map series 1:500,00), and aerial photographs (Cía. Mexicana Aerofoto

series 1:50,000 and 1:20,000). Once in the vicinity, the survey was conducted on foot. The aerial photographs were sectioned and the area of the sections were walked-over. The sites were identified as those described in the documentary sources by their location near present-day settlements with the same name and by the surface presence of Prehispanic ceramic and lithic artifacts and structural remains. The extent of the site was determined by the concentration of surface artifacts and structural remains. Location, physical characteristics, and landscape features were noted, and the site was placed on a CETENAL 1:50,000 map (Figure 3.0) and Cía. Mexicana Aerofoto series aerial photographs. Collections were made of surface artifacts by a walk-over random sampling method. A one meter square test excavation was made at Taximaroa but at no other site during the survey.

The site of Acambaro is northeast of the present-day city of Acambaro in the state of Guanajuato and covers the summit of the hill of Cerro el Chivo which is 150 meters above the elevation of the Lerma River lying to the south of it. Artifacts are densely distributed on the surface. Groups found at this site were also found at Zirizicuaro, Taximaroa, Zitacuaro, and Tuzantla (Snarskis 1974). The collection included no types known from Tzintzuntzan (Pollard 1972), although some of these types were located at related sites in the vicinity. Lithic artifacts are predominately of obsidian, and blades are the most numerous among lithic artifacts. Monumental structures were noted on this survey.

An unobstructed 360° view of the surrounding area is easily obtained from the summit of the hill. The Lerma River can be seen for several kilometers to the east of the site, directly past the site as its plain is constricted between Cerro el Chivo to the north and Cerro el Toro to the south, and can continue to be seen for several kilometers to the west.

A survey in the area of the present-day city of Maravatio located no Prehispanic site. The aerial photograph revealed no structural remains in the vicinity. Local residents had no knowledge of a Prehispanic site in the vicinity. In the walk-over a Prehispanic site was located about seven kilometers north of Maravatio and two kilometers north-northeast of Zirizicuaro in Michoacan (Figure 3.1). The site, called here the Zirizicuaro site, is on two hills, named Cerro de la Campaña and Cerro de las Palmas, and between them flows the Lerma River in a north-south direction through this valley. Cerro de la Campaña is a small rise about seven meters above the valley floor. Retaining walls are set into the upper slopes of this rise. One clearly defined structure at the summit has a perimeter measuring 155 meters with its northern side measuring about 30 meters. Ceramics groups at this site were the same as some of those found at Acambaro, Taximaroa, Zitacuaro and Tuzantla (Snarskis 1974). No ceramics identifiable as Tzintzuntzan types, were located on the surface. Lithic artifacts were made predominately of obsidian, and flakes and blades were most common (Ogilvy 1974).



CIUDAD HIDALGO
HEROICA ZITACUARO
TUXPAN
Maravatío de Ocampo
San Miguel Curahuango
Ucareo
Jungapeo de Juárez
Tuzantla
Tlalpujahua de Rayón
Valle de Bravo
Villa Victoria
San Diego Suchitepec
Angangueo
Nuevo Santo Tomás de los Plátanos
Colorines

Figure 3.0

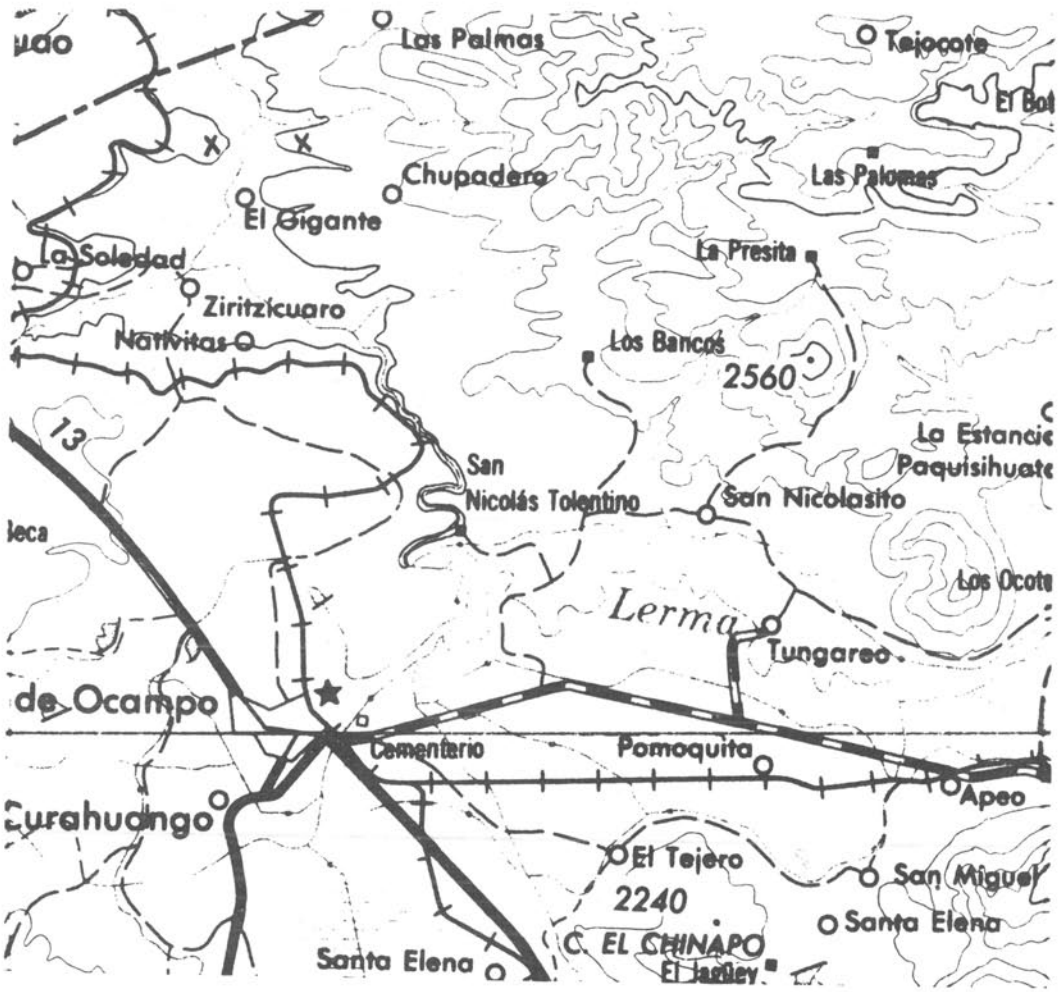

Las Palmas
Tejocote
Chupadero
Las Palomas
El Gigante
La Soledad
La Presita
Ziritzícuaro
Nativitas
Los Bancos
2560
13
San
Nicolás Tolentino
San Nicolasito
Lerma
Tungareo
de Ocampo
Cementerio
Pomoquita
Apeo
Curahuango
El Tejero
San Miguel
2240
Santa Elena
EL CHINAPO
Santa Elena

Figure 3.1

If a single frontier settlement could be considered the eastern entryway to the Tarascan territory, it would be Taximaroa. It was the settlement where the Aztecs waited for permission to present to the Cazonci (the ruler of the Tarascan territory whose administration was at the capital city of Tzintzuntzan some 100 kilometers away) a petition asking for a Tarascan-Aztec alliance against the newly arrived Spaniards. It was also the settlement that the Spaniards used a a staging site for their planned assault on the Tarascans and the place of negotiations between the Cazonci's relative and emissary, Don Pedro, and the leader of the Spanish expeditionary forces, Captain Cristóal de Olid (*Relación de Michoacán* 1956:237-240, 246-250).

Taximaroa was also an important military site. In 1476-1478 when the Aztecs had moved west past Taximaroa, they were considered to have entered into Tarascan territory. A decisive battle between the Tarascans and Aztecs took place between Matalcingo (identified as present-day Charo) and Taximaroa near a lagoon in the vicinity of Zinapecuaro (Durán 1967, vol.2:282). The Tarascan victory restored their frontier zone to where it had been before this war, east of Taximaroa.

The walk-over survey located a Prehispanic site on the slopes of a hill two kilometers northeast of present-day Ciudad Hidalgo in Michoacan (Figure 3.2). The hill commands an excellent view of the east where passes through the mountains several kilometers away are easily visible. It also commands a view to the south and west. On the slopes and summit are structural remains that are heavily overgrown. The ceramics surface collection has groups found at Acambaro, Zirizicuaro, Zitacuaro, and Tuzantla and no Tzintzuntzan pottery types (Snarskis 1974). The lithic collection is predominately obsidian flakes and blades (Ogilvy 1974). A one meter square test excavation unit produced a collection of artifacts not different from the surface collection. Although this is a Prehispanic site in the vicinity of Prehispanic Taximaroa, it is probably not the main area of the settlement, but more likely a military outpost connected to the settlement.

A Prehispanic site lies about five kilometers west-southwest of present-day Zitacuaro in Michoacan (Figure 3.3). It is on a low hill, Cerro Palomas, to the southwest of the confluence of the San Juan and San Isidro Rivers. Not only the river valley but also the pass between the hills, Cerro el Cacique and Cerro el Huacal, to the east can be observed easily from the site. Structural remains were not located. Occupation was inferred from the presence of Prehispanic ceramics. Groups from Zitacuaro were also found at Acambaro, Zirizicuaro, Taximaroa, and Tuzantla. No Tzintzuntzan types were found (Snarskis 1974). Most of the obsidian artifacts were flakes and blades (Ogilvy 1974). A larger site with monumental structures in the vicinity of Zitacuaro was reported by Paul Gendrop (1972). This site is near San Felipe los Alzati and is about eight kilometers north of the Cerro Palomas site on the northern end of the Cerro el Cacique-Cerro el Huacal pass. Gendorp describes a pyramidal platform with five to seven levels and a central stair. Connected, or at least adjacent to it, is a large structure with a semi-circular ground plan. These structures

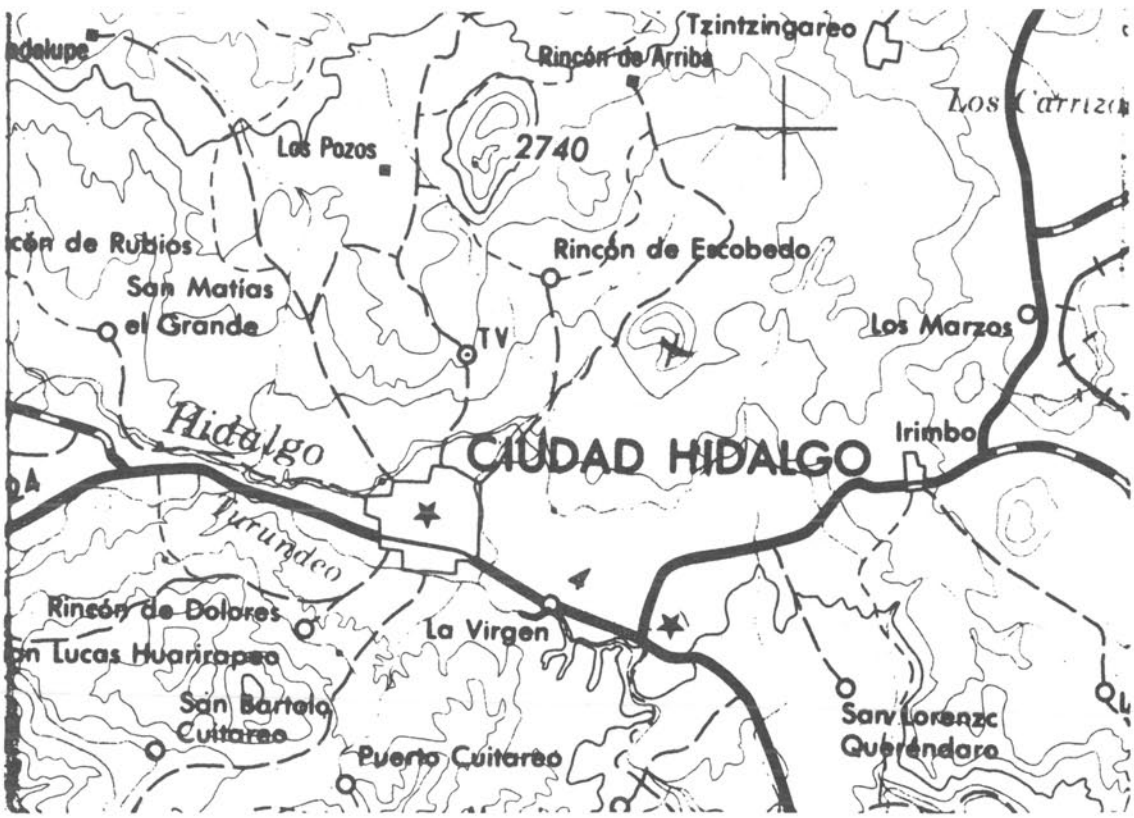

Tzintzingareo
Rincón de Arriba
Los Pozos
2740
Rincón de Escobedo
San Matías
el Grande
TV
Los Marzos
Irimbo
Hidalgo
CIUDAD HIDALGO
Rincón de Dolores
La Virgen
San Bartolo
Cuitareo
Puerto Cuitareo
San Lorenzo
Quirendaro

Figure 3.2

were built to take advantage of the slope of the hill which gives them height without construction. This trompe-l'oeil effect was found in the hillslope structures at Acambaro-Cerro el Chivo. Incised facade stones found at this site were also found at Cerro el Chivo.

The Prehispanic site at Tuzantla lies about four kilometers south of present-day Tuzantla in Michoacan near the west bank of the Tuzantla River (Figure 3.4). Most notable at the site is the remains of a single or perhaps several structures. The area of one standing structure measures 40 meters in diameter. Four small circular constructions are found on its surface. The four are clustered symmetrically in pairs and each measures three meters in diameter. The ceramic artifacts include groups found at Acambaro, Zirizicuaro, Taximaroa, and Zitacuaro (Snarskis 1974). No Tzintzuntzan types were found. The lithic artifacts are almost exclusively obsidian flakes and blades (Ogilvy 1974).

The archaeological survey of these five sites yielded results not obtainable from the ethnohistorical sources. First, the frontier zone marked by these sites was located. The zone faces the rivers and mountain passes between Tarascan and Aztec territory. The sites are markers at particular passes or rivers. Acambaro is at the Lerma River, Zirizicuaro is also at the Lerma at a southern and more easterly point. The Taximaroa site overlooks a mountain pass (through which the railroad now crosses) and the plain between the mountains and the site. Zitacuaro faces another, southerly mountain pass (now traversed by a roadway) and is at the confluence of two rivers whose beds provide the easiest pathway through that pass. Tuzantla overlooks a river that crosses through the width of the Tarascan frontier zone and flows into the Tuxpan River which connects Tuzantla with Taximaroa.

Second, the physical characteristics of the sites were determined. The sites were all on hills which allowed excellent fields of view and permitted surprise offensive action. Also, the sites were sufficiently close to be coordinated in strategy and tactics. The first four sites are about 30 kilometers apart, and the distance between the fourth and fifth (Zitacuaro and Tuzantla) is about 50 kilometers. Fire or smoke signals from the summit of the hills either at or near the settlements were either seen by the next-in-line frontier settlements, or if they could not be seen, messengers and scouts could have carried information to the nearest settlement down or up the line within one day. All the settlements of the frontier zone could have been informed of an event or directive within a week and possibly within days depending on the position of the frontier settlements disseminating and receiving the information (Footnote 1).

Third, the archaeological field study yielded ceramic collections that, when analyzed, showed local wares and groups of the ceramic complexes of the Lerma and Acambaro Phases (see Chapter III) which were present at all sites. In addition, the ceramic analysis showed the absence of Tarascan (Tzintzuntzan) types at these sites. Thus, both ethnohistory and archaeology reveal the Tarascan frontier. The ethnohistorical sources name the sites and the population. The archaeological investigation shows the connection and function of the

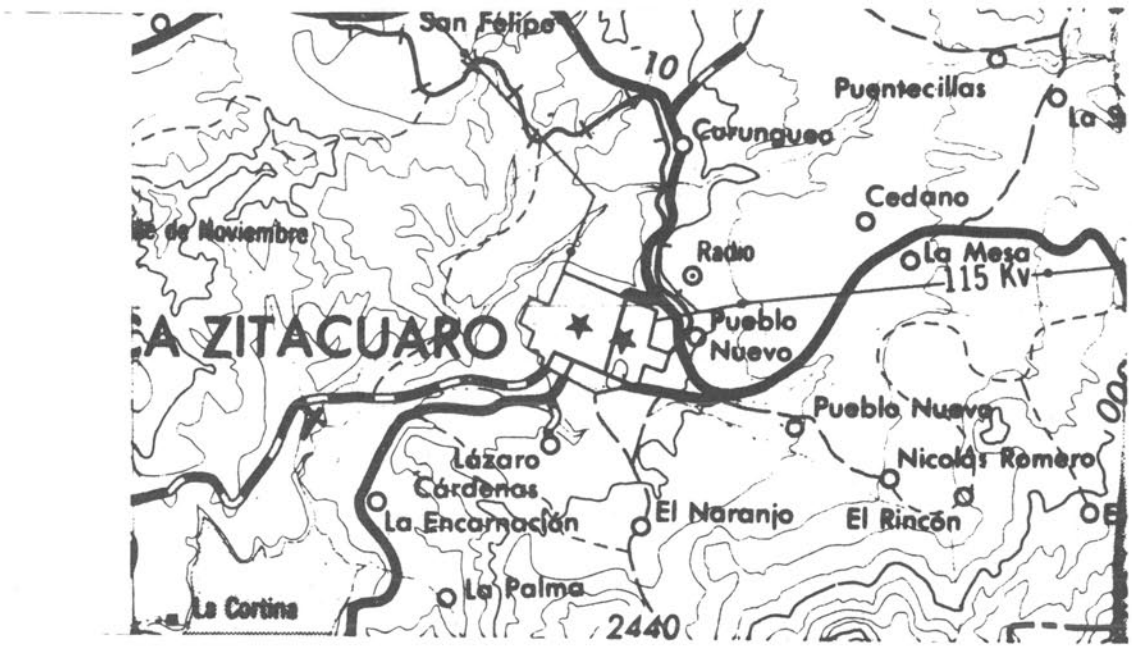

San Felipe
10
Puentecillas
Corunqueo
Cedano
Radio
La Mesa
115 Kv
A ZITACUARO
Pueblo
Nuevo
Pueblo Nuevo
Lázaro
Cárdenas
Nicolás Romero
La Encarnación
El Naranjo
El Rincón
La Palma
La Cortina
2440

Figure 3.3


Tiripitío
Mesa del Aire
Los Guajes de Tiamaro
Cerrita Organista
El Paso de la Virgen
colás Romero
Las Anonas
6876
CERROS EL CABILDO
Tuzantla
Chirangangu
Chirangueo
1060
Singancho
Arroyo del Chile
Cañas Viejas
Agua Fría

Figure 3.4

sites as well as the cultural content.

The investigation of Acambaro, then, has two contexts. It continues a study of the Tarascan civilization, and it begins a study of the Tarascan-Aztec frontier, a political and military frontier that can add to the understanding of the political systems of both those civilizations.

Footnote

1 *Relación de Michoacán* [1956:235-236, 248] records a fast pace of about 70 kilometers a day. This pace is about twice as fast as that estimated by Adams (1978) for travellers without loads over good land routes in sixteenth century Mesoamerica. If runners were used, then 70 kilometers could have been covered in a 24 hour day. In this study the conservative estimate of 35 kilometers a day has been used. Therefore, the reader should consider that settlements may have been closer, and certainly no further, in time than suggested here.

Chapter II

Ethnohistory of Acambaro

Ethnohistorians have not uncovered Prehispanic written or inscribed records for the Tarascan region as they have in other parts of Mesoamerica. The Tarascanist must use Spanish documents of the sixteenth century. However, these often provide information about the Prehispanic period. In some there are recollections of Prehispanic events often by witnesses to them. In others there are primary accounts of aspects of Postconquest Tarascan society which had not changed since Prehispanic Tarascan times. These documents record historical events; descriptions of culture and society including genealogical and tribute data; and some locational information in maps and pictorial representations.

For Acambaro the most informative documents are the *Relación de Michoacán* of 1541, Spanish administrative records of the 1520s (reproduced in Warren 1977), the *Suma de visitas de pueblos* of 1547-1550, the *Relación de Celaya* of 1580 which includes a section on the "province of Acambaro", the *Tributes of Tzintzuntzan and Tlalpujahua* dated 1542 (reproduced in Beaumont 1932, vol. 3:63-67), and the 1580s *Relación* of Fray Alonso Ponce (1968). There is also a document (reproduced in Beaumont 1932, vol. 2:298-306 from a copy in the Archivo de nuestra Convento de Acambaro) concerning the founding of the town of San Francisco de Acambaro and called the *Relación de Nicolas de San Luis*. The copy is dated 1761; the orginal is purportedly dated 1535, recording events of 1526.

Acambaro is mentioned twice in the *Relación de Michoacán*; both references give substantive information. First, it is listed, as Acanbaro (sic) Hiramucuyo, among places conquered in the big push extending the Tarascan territory eastward (*Relación de Michoacán* 1956:154-155). This event took place around 1450 (the date suggested by Herrejon Peredo 1978:16-17, conforming to Bravo Ugarte 1962, vol. 1:69-74]). The settlements in or around the frontier zone conquered at the same time were Zinapecuaro (Zirapequaro) Maravatio (Maroatio), Ucareo (Hucario), Yuriria (Yuriapundaro), Jungapeo (Zitacuaro), Taximaroa, and Cutzamala (listed as Hapazingan). Also listed as conquered is Cutzaru, probably Tuzantla (The *Relación geográfica de Tuzantla* [1965:66] records Cusaro as Tuzantla's Tarascan name.) Its second mention in the *Relación* (1956:248-249) refers to its functions as a frontier zone settlement at the time of the impending arrival of the Spaniards:

> Y partióse don Pedro, ques agora gobernador, con otra principal llamado Muzundira, y en día y media llegó a Taximaroa, desde la cibdad, ... y juntose toda la gente de Ucareo y Acambaro, y y Araro y Tuzantlan, y estaban todos en el montes con sus arcos y flechas y topo don Pedro en el camino un principal...que venia de Taximaroa, donde estaban espanoles .... "¿Pues que hay?" dijole don Pedro: "Envíame el cazonci ... a hacer gente de guerra, y

envióme a estos pueblos, a Taximaroa y a Ucareo, y a Acambaro y Araro, y a Tuzantlan.

The *Relación* establishes Acambaro as a frontier settlement that was conquered during a military expansion of the territory to the east and whose population was expected to engage in warfare at the directive of the Tarascan ruler, the Cazonci, who represented the Tarascan polity.

The *Relación de Celaya* of 1580 (Footnote 1) (1945) is one of the *Relaciones geográficas* (also 1958) that were the responses to the 1577 instructions and questionnaire consisting of 50 inquiries put to colonial administrators by the Spaniards. Christoual de Vargas Valades, alcalde mayor of Celaya, corregidor of Yuriria, and justicia of Acambaro responded for Acambaro. In answer to the questions concerning Prehispanic life at Acambaro he gave its history.

Acambaro, he wrote, is the only name by which this province was known and it means "place of magueys" in Tarascan. Sometime in the Prehispanic past four Otomi *principales* and their wives along with 60 Otomi families came to the region from Hueychiapa in Xilotepeque (Jilotepec). Apparently the province was already controlled by the Tarascans since they had to ask the Cazonci's permission to settle there and to assure him of their wish to serve his interests. The Cazonci directed them to the well-established settlement of Guayagareo (Guayangareo) about 35 km. to the southwest of Acambaro. They remained at Guayangareo only a short while and left to find a more congenial location which they did on the Lerma River at Acambaro. The indigenous population already at Acambaro was Guamare-Chichimec.

There is some question about the first migration of Otomi to Acambaro. The *Relación de Nicolas de San Luis*, reputedly dated 1535 (reproduced in Beaumont 1932, vol. 2:298-306) puts the date of the "founding" of Acambaro by Otomi from Jilotepec at 1526-1528. Wigberto Jimenez Moreno (1944:129-133) notes the discrepancy between the *Relación de Celaya* which cites a Prehispanic migration of Jilotepec Otomi to Acambaro, and the *Relación de Nicolas de San Luis* which indicates a Posthispanic date, 1526-1528 for the Otomi migration which "founded" Acambaro. Jimenez Moreno writes that the Posthispanic date appears to be supported by a letter from Cortes. George Kubler (1948:87,488) disputes the "founding" date of 1526-1528 as too early. He notes that other documents place the founding of Acambaro at a later date.

There are two issues raised in these disputes and separating them may lead to some reconciliation of the differences. The first concerns the time of the Otomi migration; the second, the founding of Acambaro. There were a number of Otomi migrations to Acambaro from Jilotepec, only 110 km. to the east, and they occurred both in Prehispanic and Posthispanic times. The second matter of the "founding" of Acambaro can be understood in two ways; the founding of Tarascan Acambaro and the founding of Spanish Acambaro. The *Relación de Michoacán* and the archaeology (Chapter III) place the founding of Tarascan Acambaro in Prehispanic times and this was probably done by one of the Prehispanic Otomi migrations from Jilotepec. Spanish Acambaro may very well have

been founded after 1526-1528, and perhaps it was related to a Posthispanic Otomi migration.

Kubler has questioned the authencity of the *Relación de Nicolas de San Luis* on the grounds of its too early founding date (given, he thinks, to substantiate later Indian claims) and its seventeenth century style. Although the founding date may be early and "incorrect," other parts of the document which conform to the archaeology are correct and have been accepted in this study. The seventeenth century style may have come about during the copying of the original, since lost, in 1761, Indeed the copier, Fray Felipe de Velaco wrote, "Está corregido por el original." These "corrections" would not make the entire document inauthentic.

The Prehispanic Otomi, then, settled at Acambaro and governed on behalf of the Cazonci. These events are said by the author of the *Relación de Celaya* to have taken place during the reign of the Cazonci Tariacuri, the first Cazonci to expand the territory. This conflicts with the *Relación de Michoacán* (1956: 150-155) which lists Acambaro as a later conquest made by the descendants of Tariacuri. Since the *Relación de Michoacán* was written 40 years earlier than the *Relación de Celaya* and had better informants on Tarascan state history, the *Relación de Michoacán* is correct in recording the Acambaro conquest as made by descendants of Tariacuri. In Posthispanic times Tariacuri became a culture hero who was connected to all events in regional Tarascan history. In any case the Otomi entry and settlement in Tarascan territory took place in the fifteenth century. Within a few years, according to the *Relación de Celaya*, the Otomi were joined by four families of Tarascans. There were then three ethnic-linguistic groups at Acambaro; the Chichimec, the Otomi, and the Tarascans. The function of Acambaro was to protect Tarascan lands against Mexica (Aztecs) and other Tarascan enemies.

Wars with the Indians of Jocotitlan (about 100 km. to the southeast in the Aztec frontier zone) and the Aztecs are mentioned, expectedly. Unexpectedly, wars in the west with Jalisco are also noted. The people of Acambaro fought with bows and arrows, clubs, and "swords" of wood slatted along the edges to accommodate sharp obsidian blades. Question 32 asked of the respondents whether there were military structures, that is, fortifications outposts, or impregnable places in the vicinity (Cline with Edwards 1972:236). Vargas Valedes did not answer this question for Acambaro.

Acambaro, as a setting for battle, and the military capabilities of the Chichimec are described in the *Relación de Nicolas de San Luis*.

> A este plan y llano grande, que le dicen del ramadero de agua, es onde se hizo la guerra. ... cada chichimeco bárbaro traia cinco carcaxes de flechas y arcos; estos carcaxes son pellejos de cualesquiera animales fierísimos. En este tiempo estaban los indios chichimecas barbaros danzando encima en los cerros, dando alaridos y tirando sus flechas, volaban las flechas a caer hasta dicho pueblo nuevo para la huelga (Beaumont 1932, vol. 2:299).

The three ethnic-linguistic groups at Acambaro maintained separate identities and social systems. The *Relación de Celaya* reports that the Otomi and Chichimecs had their own customs of worship, of eating, and of prisoner sacrifice which were different from the Tarascan. Each group had its own leader, a Tarascan was responsible for the Tarascans, an Otomi for the Otomi, and a Chichimec for the Chichimecs. Tribute was assessed according to ethnic-linguistic group. The Tarascans of Acambaro, sent maize and other food crops (not named) as well as a small quantity of blankets as tribute to the Cazonci. The considerable assessment for the members of the smallest ethnic-linguistic group undoubtedly reflects their obligations as administrators since they collected the tribute for the district. The Chichimecs and the Otomi, on the other hand, were exempt from this tribute, and were required only to engage the enemy and turn over to the Cazonci the blankets and prisoners that were the spoils of war. (They were not, however, exempt from bringing firewood to Patzcuaro and Tzintzuntzan, the Patzcuaro Basin religious centers. The ritual act of stoking fires at the Tarascan temples and hilltops was a sacred obligation that was required of even the Cazonci himself.) This differentiation of the three ethnic-linguistic groups was so strong that it was sustained in Posthispanic times when it is reported in the *Tributos de Tzintzuntzan o de Tlalpujahua* (1542) that the Tarascans and Otomi were assessed different quantities and periods in the payment of tribute.

> ...don Juan, cacique del Pueblo de vCro. [Acambaro] que renta a su magestad por las minas de Tzintzuntzan, o de Tlalpujahua, que tributan dichos indios tarascos, e otomies de tributo; que por estas rengleras de cabezas de este pueblo de vCro. Francisco, e don Antonio, capitanes, pagan veinte cargas, e Jeronimo, e Francisco, caciques de estos indios tarascos, principales del dicho pueblo, treinta cargas.... tarascos trece cargas y los otomíes dos cargas...los tarascos veinte dias, e los otomíes diez dias de todo. (Beaumont 1932, vol. 3:64-65)

Although there was a tripartite social infra-structure, the Tarascans had full control over the community. *The Relación de Celaya* points out that the Cazonci appointed the Otomi and Chichimec leaders. This insured that the settlement would carry out its functions on behalf of the Tarascan polity rather than act out of group self-interest. The Tarascans had developed this "some are more equal than others" principle in dealing with social groups in the Lake Patzcuaro Basin.

The ethnohistory suggests that these ethnic-linguistic groups were separated spatially in the settlement of Acambaro and that the early settlement centered on the hill of Cerro el Chivo. The *Relación de Celaya*, recording the Prehispanic location of Acambaro, notes that the settlement was first established on a hill and then expanded to the hillslopes. Antonio de Caravajal in his 1528 visitation reported that Acambaro was located on the side of a hill called, in Tarascan, Caparicutero. He appears to have recorded only the hillside part of the settlement since he noted only 25 houses (Warren 1977:403). The *Relación de Nicolas de San Luis* describes the spatial arrangement of

Acambaro at the time of the founding of Spanish Acambaro. The Chichimec population was centered on Chivo (called el pueblo de Meco in the document), and there was a bridge across the Lerma from Chivo to the Spanish settlement of Acambaro. The Tarascans and the Otomi, probably maintaining their Prehispanic spatial division were assigned separate barrios in the newly-founded valley site of San Francisco Acambaro.

> En virtud de este dicho río de Toluca [Lerma], que le llaman, que cruza a la orilla de la fundación del pueblo de San Francisco de Acámbaro Nuevo Pueblo, le dicen en Otomí Maguadan, y en lengua tarasca, Acambaro. Y para pasar el dicho rio se pusieron cinco maderas de sabino largas y gordas.... En estos cerritos le pusimos su pueblo a los indios amigos chichimecos, que ellos lo pidieron; e son diferentes rayas en medio de las caras, que le dicen la nacion de los guamares. Su capitán de estos indios chichimecos se llama el capitán Tariz; y trae este dicho capitán Tariz más de cinco mil indios chichimecos arcos, flechas, flechadores. ...el...pueblo de Mecos, encima de la loma/ que está a la parte del Norte. El puebla de Acambaro queda a la parte del Sur; y el río queda en medio. Desde el dicho rio hasta onde el pueblo de los indios chichimecos hay trescientos pasos. ...por toda la orilla viven los indios chichimecos como arriba onde está la puerta, están viviendo los indios chichimecas, ...guardando el pueblo de San Francisco de Acámbaro (Beaumont 1932, vol. 2:304-305).
>
> Desde la iglesia se les dan a los caciques otomites, con todos sus naturales, la mitad de la fundación del dicho pueblo, a la parte del río hacia el Norte; a la parte del Sur se les dan a los dichos indios caciques tarascos; seis caciques los pusieron en cada esquina de las calles, edad de treinta anos, lo mismo se le dan cincuenta brazadas de solar, onde ha de fabricar sus casas de vivienda y huertas (Beaumont 1932, vol 2:299).

The archaeological investigation (Chapter III) placed the main location of Prehispanic Acambaro on the hill and hillslopes of Cerro el Chivo. A secondary site was in found in the river valley. The present location of Acambaro appears to date from the founding of Spanish Acambaro. The *Suma de visitas de pueblos* records this location for Acambaro in 1547-1550 as does the *Relación de Celaya* in 1580. Fray Ponce visited Acambaro in the 1580s and placed it in the river valley, but he observed the remanent Prehispanic spatial division of ethnic groups. He wrote that the Chichimecs were living north of the river and the Tarascans and Otomi were living south of the river in Posthispanic Acambaro. He also noted that the division had become an uneasy one because the militant Chichimecs often crossed the river to mug people in the streets of San Francisco Acambaro (Ponce 1968:11-12, 136-137).

Acambaro's place in the Early Hispanic administration is a reflection of its Prehispanic role in the Tarascan territorial

administrative system since the Spaniards used already established systems. High-ranked Early Hispanic administrative central places were usually high-ranked in the Prehispanic Tarascan administrative hierarchy.

The *Tasción del Bachillar Juan de Ortega* of 1528 (Warren 1977:411-425) notes that Acambaro had been given as an *encomienda*, and that it had a *principal* as well as a resident translator for the Nahuatl language. Acambaro was assessed 300 *cargas* of maize. The size of its assessment and the importance of settlements with which it was classed suggest that it was considered a major administrative settlement in the "province of Michoacan". The *Relación de Nicolas de San Luis* gives the population at the time of the founding of Spanish Acambaro as 400 Otomi and Tarascans and 5000 Chichimecs. This number may not have reflected the decimation which resulted from the Spanish Conquest. (The Acambaro population is discussed more fully in Chapter IV.)

The *Suma de visitas de pueblos* of 1547-1550 (1905: 32-33) lists Acambaro as a *cabecera principal* with four *cabeceras sujetas*; Yramo, Amocotin, Atacorin, and Emenguaro. Each of these places had from 2 to 4 barrios. At this date Acambaro's district touched Queretaro's on the north, Zinapecuaro's to the south, Maravatio's to the southeast and Yuriria's and Cuiseo's to the west. The settlement of Acambaro is described as having 1,048 persons over 3 years of age living in 13 barrios. (This population seems too small and therefore wrong compared to other figures and trends for the period.) They were engaged in farming, including irrigation farming that permitted the cultivation of cotton. Part of the report notes occupations, crops, and amounts of tribute of food, including salt, and clothing.

> Más dan todos juntos treynta y tres yndios pastores y veynte y seis yndios para los telares, mas hazen vna sementera de trigo de quinze hanegas de sembradura; más dan ocho medidas de yerua; más dan veynte yndios para el seruicio de cassa; más hazen vna sementera de maiz de quarenta y quatro suertes de tierra; más dan cada veynte dias veynte y quatro pares de cutaras, y ocho pares de alparagates; mas dan cada veynte d as veynte y quatro panes de sal (*Suma* 1905:33).

The *Relación de Celaya* of 1580 records an Acambaro population of 2,600 *vecinos* and notes that this is a much smaller population than in Prehispanic times. Four languages were spoken, Chichimeca, Otomi, Mazahua, and Tarascan. The last was the most common. It lists more than 40 *sujetas*, probably settlements and barrios, for Acambaro, the *cabecera*. These were Tarandaqua (Tarandaro), Tepaqua, Chamaquera (Chamacuaro), Menguaro, Puroagua, Chopicuaro, Piritzeo, Yramoco, Vrireo, Chochones, Xarequaro (Jerequaro), Tacanbaro, Laborranca [sic], Agua Calientes, Agustin, Apaseo, San Pedro, San Miguel, Santiago, San Lucas, San Francisco, San Geronimo, San Pedro Vecoreo, Laor de Apaseo el Alto, Acanbaro, Toquaro, Los Pescadors, Nacaztepeque, Contetepeque, Pirhtsio, San Juan Tehpaqua, Vatzaquao, Xanaquao, Sirandaro, Cachadurio, Paraquaro, Santa Maria, La Estancia

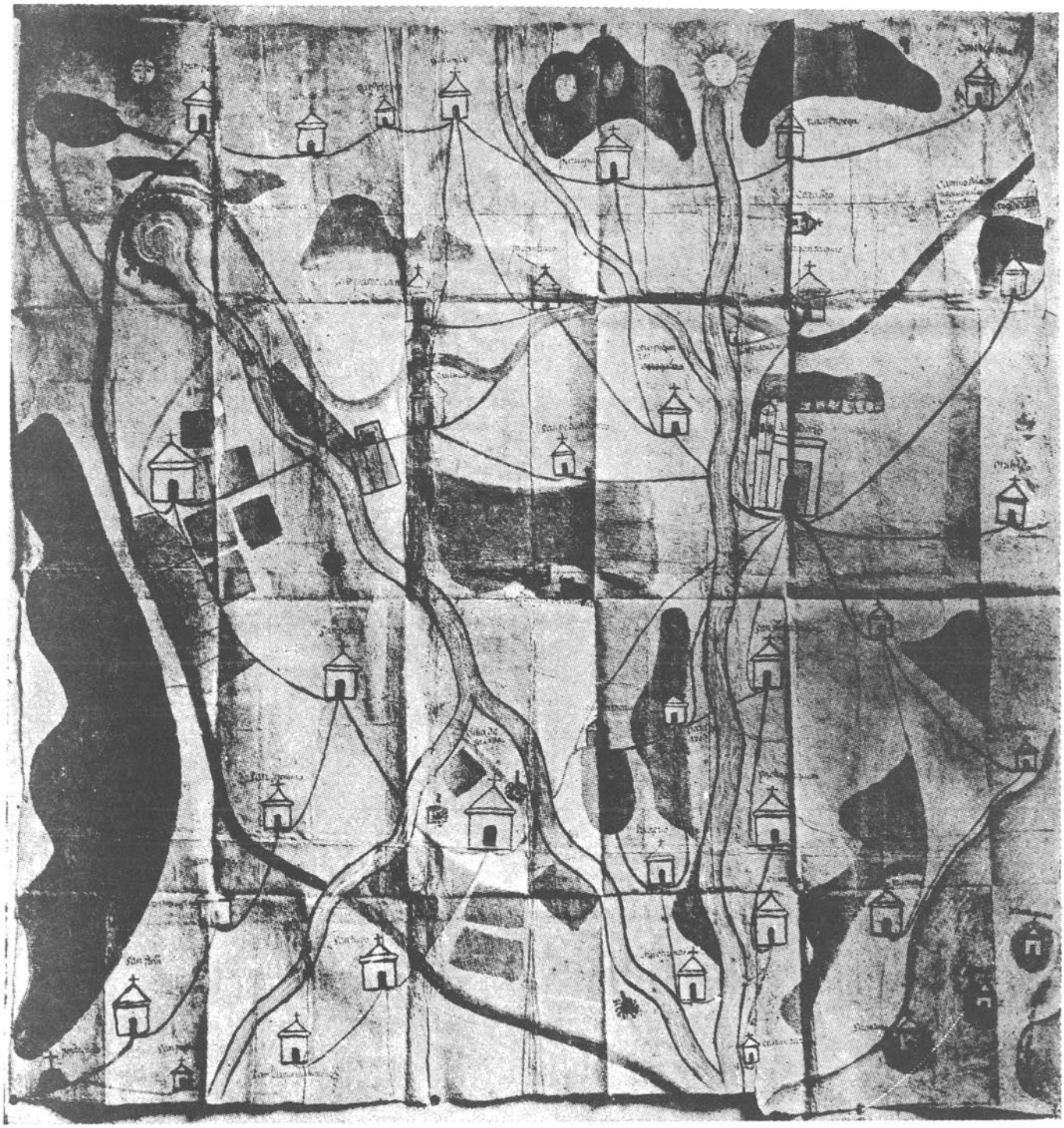
de Tarimoro, Huripitio, Cusinjo [?], Catsirehpeo, San Pedro, Villa de Salaya, Apatsio, Portesuelo, Coroneo. This list may represent an expansion of Acambaro's administrative responsibilities under the Spaniards or it may be a more detailed and exact representation of the administrative region reported on in the *Suma*.

Accompanying this *Relación* is a poorly reproduced map (1945 edition: facing page 115) of the "Region of Celaya and Acambaro" (Figure 4). It shows Acambaro in the river valley, south of the Lerma River and west of Cerro el Toro. Cerro el Chivo is not on the map. Acambaro is shown with connecting routes to many other settlements in the region. It is very likely that these routes were Prehispanic which would indicate that Acambaro was a highly accessible settlement, a characteristic in harmony with a high rank in the Tarascan administrative network.

In summary, the ethnohistorical sources place Prehispanic Acambaro in the eastern frontier zone of the Tarascan territory. It was a Chichimec settlement conquered by the Tarascans in the fifteenth century. Otomi from Jilotepec migrated there after the Tarascan conquest and put themselves into the service of the Cazonci and the Tarascan polity. A small Tarascan population joined the settlement. The three ethnic-linguistic groups, the Chichimecs, the Otomi, and the Tarascans, each maintained its own social system. Politically, however, the settlement was part of the Tarascan state and served its interest. It had administrative functions relating to the territory, such as the collection of tribute from a district; and functions relating to the polity, such as military action that sustained the frontier.

Footnote

1 The Vargas Rea edition of the *Papeles de la Nueva España* (1945) has the title, "Relación de Celaya y su partido, año de 1570." It begins with the observation, "En la cabeza y margen de la la (sic) hoja de la Instrucción impresa, de varias letras. No.101. Villa de la Conceción. Michoacán. Nueva España. Cespedes. Vista. La Conceción de Salaya la poblo un tal de Salaya por mandado del Visorrey don Martin Enriquez, año 1570. Tomo el nonbre de Salaya por Juan de Cuevas, secretario de Audiencia de Mexico." The document itself, however, begins "En la villa de Nuestra Senora de Conseción de Salaya a quinze dias del mes de Junio de mill quinientos e ochenta anos... ."



Mapa de la Región de Celaya y Acámbaro

Figure 4

Chapter III

Archaeology of Acambaro

Investigations in the Vicinity

The archaeology of the Acambaro region before the present investigation was limited to the site of Chupicuaro and so only the relatively early period in Mesoamerican prehistory in the Acambaro region has been known. The site of Chupicuaro (Mena y Aguirre 1927, Estrada Balmori 1949, Porter 1956) had been dated from several centuries before the beginning of the Christian era to shortly thereafter. Chupicuaro ceramics were found at Acambaro-Cerro el Chivo and the description and interpretation of Chupicuaro at Acambaro is found in Appendix III on ceramic analysis.

Two sites within 35 km. of Acambaro have yielded ceramics that have been cross-dated as contemporary with Chupicuaro, at least in part. In 1943 Hugo Moedano excavated at Zinapecuaro. Zinapecuaro is important in Tarascan history for at least two reasons. It is near a major obsidian flow, and it was an important Tarascan religious center (*Relación de Michoacán* 1956:230 ff). Moedano's (1946) analysis of the ceramic collection shows that they have certain similarities to Acambaro ceramics. The earliest ceramic complex at Zinapecuaro, while sharing some attributes with the Chupicuaro Complex, cannot be identified as traditional Chupicuaro. However, the second complex shares attributes of surface finish with the groups of the later Lerma Complex at Acambaro. The last complex at Zinapecuaro shares attributes with the last ceramic complex at Acambaro (Acambaro Phase). Zinapecuaro, like Acambaro and unlike Chupicuaro, was occupied from Preclassic through Postclassic times.

A site about 32 km. northeast of Acambaro in the Jerecuaro vicinity yielded ceramics cross-dated to the Basin of Mexico phases Ticoman III to Teotihuacan I, perhaps to Teotihuacan II (Matos Moctezuma 1966:32). This site like Chupicuaro and Acambaro was occupied in later phases of the of the Preclassic or the First Intermediate, to use Millon's (1976:25) chronology for the Valley of Teotihuacan. Unilike Acambaro it was not occupied after that date.

Beatriz Braniff (1974) in a survey of archaeological sites in Guanajuato has noted the presence of Preclassic sites in the vicinity of Salvatierra and Coroneo. Sites that have not been dated but have been identified as Prehispanic have been located at La Quemada (Cerro de Culiacan), Apaseo de Alto, Pueblito, La Madelena, Cuecillo de Abajo, Cuecillo de Arriba, and a number were located in the Laja River Valley.

An important reconnaissance was conducted in 1976 and 1977 by Charles Florance (1982) who did a 100% survey along the Lerma River Valley from the easternmost end of the Solis Dam to a point just north of Puerta del Sauz. He located 45 "scatter areas." The ceramics were, for the most part, those identified as the groups of the Chupicuaro Complex at Acambaro. No groups identified at Acambaro as the later Mixtlan, Mixtlan/Lerma, Lerma, and Acambaro Complexes were found.

In other words the "scatter areas" of the Florance survey all appear to be contemporary with the Chupicuaro Complex, and none appear later.

Landscape

A preliminary survey of the Acambaro area revealed Prehispanic archaeological sites were located on Cerro el Chivo, its hillslopes, Cerro la Campana (a small hillock less than one kilometer to the southeast), and in the Lerma River valley (Figures 5 and 6). Cerro el Toro was also surveyed and there was no surface indication of Prehispanic habitation. Informants reported no archaeological remains nor had artifacts been known to exist or to have been collected at Cerro el Toro. The city of Acambaro with a resident population of 23,000 is a developed market center with well-connected railroad and road routes. No archaeological remains were found in a survey of the town, but, clearly, Prehispanic remains within the present-day city of Acambaro, if they did exist, could be revealed only by excavation.

The Acambaro-Cerro el Chivo archaeological zone lies in the Acambaro Valley between 100°42' and 100°44' longitude and 20°02' and 20°04' latitude. The valley lies within the tropical highlands in the Mesa Central in an area of volcanic tablelands and ranges and in what has been called the transverse neovolcanic axis biotic province. Cerro el Chivo, the main archaeological site, is a low hill on a flat-floored valley with elevations ranging from 1846 m. to 1853 m. Chivo's maximum elevation is 2000 m., placing its summit 150 m. above the valley floor. The volcanic rocks of the Acambaro Valley are andesite, rhyolite, and basalt. Two major sources of obsidian close to Cerro el Chivo are at Ucareo, about 10 km. to the south, and Zinapecuaro, less that 20 km. to the southwest.

The Lerma River, a major landscape feature of the archaeological zone flows through the valley south of Cerro el Chivo. The Lerma, part of the great Lerma-Santiago river system, heads in the Toluca Valley in spring-fed marshes and lakes. Many small tributaries flow into it downstream in a northwest direction toward Acambaro and beyond. Its course is through the hills that in Prehispanic times separated the Acambaro Valley from the Aztecs on the east and from the ethnic groups on the north. Below Acambaro the Lerma flows through an extensive area of interconnected basins called the Bajio and enters the eastern end of Lake Chapala. This 313 km. long reach, from Acambaro to Lake Chapala, traverses the entire northern section of the Prehispanic Tarascan territory. Tamayo with West (1964:105) describe the Lerma as a "sluggish stream with slight gradient and many meanders along its course."

Other influential hydrological features of the Acambaro region were seven major arroyos (Nacional, Tarandacuao, La Luna, San Jose, Cahuaro, San Antonio, and Ranchoviejo) and 32 alkaline springs, recorded in 1940. Hydrographic behavior of the Acambaro valley changed in the 1940s when the Solis Dam was built on the Lerma River, seven kilometers east of Cerro el Chivo.

The Acambaro Valley lies between areas of two climatic types, Cwa and Cwb of the Koeppen system. The valley climate is humid and temperate with a distinct dry winter (November to May) season and a summer rainy (June to October) season. Temperature is variable with the average warmest summer month in some years of over 22° C. and in others years below 22° C. The mean annual precipitation is between 1000 mm. and 2000 mm., and the mean monthly precipitation for September, a rainy season month, is between 100 mm. and 200 mm. Rainfall of the summer season is sufficient for one annual crop. A second crop would have been possible with irrigation. The *Suma de visitas de pueblos* of 1547-1550 reports that Acambaro had irrigated lands in the valley. There is some indication that at least some of these were used to grow cotton. By 1580 the author of the *Relación de Celaya* reported that even though the valley was well-suited to irrigation, it was not practiced. He noted that irrigation was being used with good success to the north in the Laja River valley in the regions of Apaseo and Celaya.

Among the most important fauna available for food were probably the fish. There are fourteen genera of the family Goodeidae found in the Lerma. Ten of these are found throughout Central Mexico and four are endemic to the Lerma. The excavations at Cerro el Chivo revealed remains of fish and snails and clams (*Unionidae*). Among amphibians known to be indigenous to the region are ambystomid and plethodontid salamanders (*Bathysiredon, Siredon, Ryachosiredon,* and *Thorius*). Excavations uncovered remains of frogs and toads (*Salentia*). Also uncovered through excavation were snakes (*Serpentes*) turtles (*Chelonia*), and lizards (*Lacertilia*). Although many bird groups are known to this region, excavation revealed only turkeys (*Melegris gallopavo*) and parrots (*Ara militaris*). Among the mammalian fauna uncovered were deer (*Odocoileus* sp?) jackrabbits (*Lepus* sp?), cottontails (*Sylvilagus* sp?), squirrels (*Sciurus* sp?), mice/rats (*Cricetidae*), gophers (*Pappogeomys* sp?) and armadillos (*Dasypus novemcinctus*). There were also remains of *Canis* that were not able to be identified further as to dog, wolf or coyote species. (For a full discussion of faunal remains excavated at Cerro el Chivo see Appendix I). The *Relación de Celaya* (1580) lists the fauna at that time as mountain lion, coyote, wolf, deer, hare, rabbit, turkey and quail.

The *Relación de Celaya* (1580) records the presence of juniper (*Juniperus flaccida* and other species) along the shore of the Lerma River and pine (*Pinus montezumae* and *P. pseudostrobus* and other species) and oak (*Quercus urbanii* among other species) at higher altitudes. The *Relación* also reports the preponderant number of mesquite shrubs (*Prosopis fuliflora*) and the cultivation of nopal cactus (*Opuntia ficusindica, pare*), cotton (*Gossypium* sp?), chile peppers (*Capsicum frutescens, cahuas*) maize (*Zea mays, tsiri*), and beans (*Phaseolus vulgaris, thatsini*). Tribute from Acambaro included maize, chile peppers, cotton, bananas, and salt (*Relación de Celaya 1580, Suma de visitas de pueblos 1547-1550,* and "Tributos de Tzintzuntzan, o de Tlalpujahua" in Beaumont 1932, vol. 3:64-67). (This description is based on field study, CETENAL 1976-1979 topographic map series 1:50,000, CETENAL aerial photograph series 1:25,000, Compañia mexicana aerofoto series B Qro. and Z. Mor. 1:20,000, Vargas 1940,

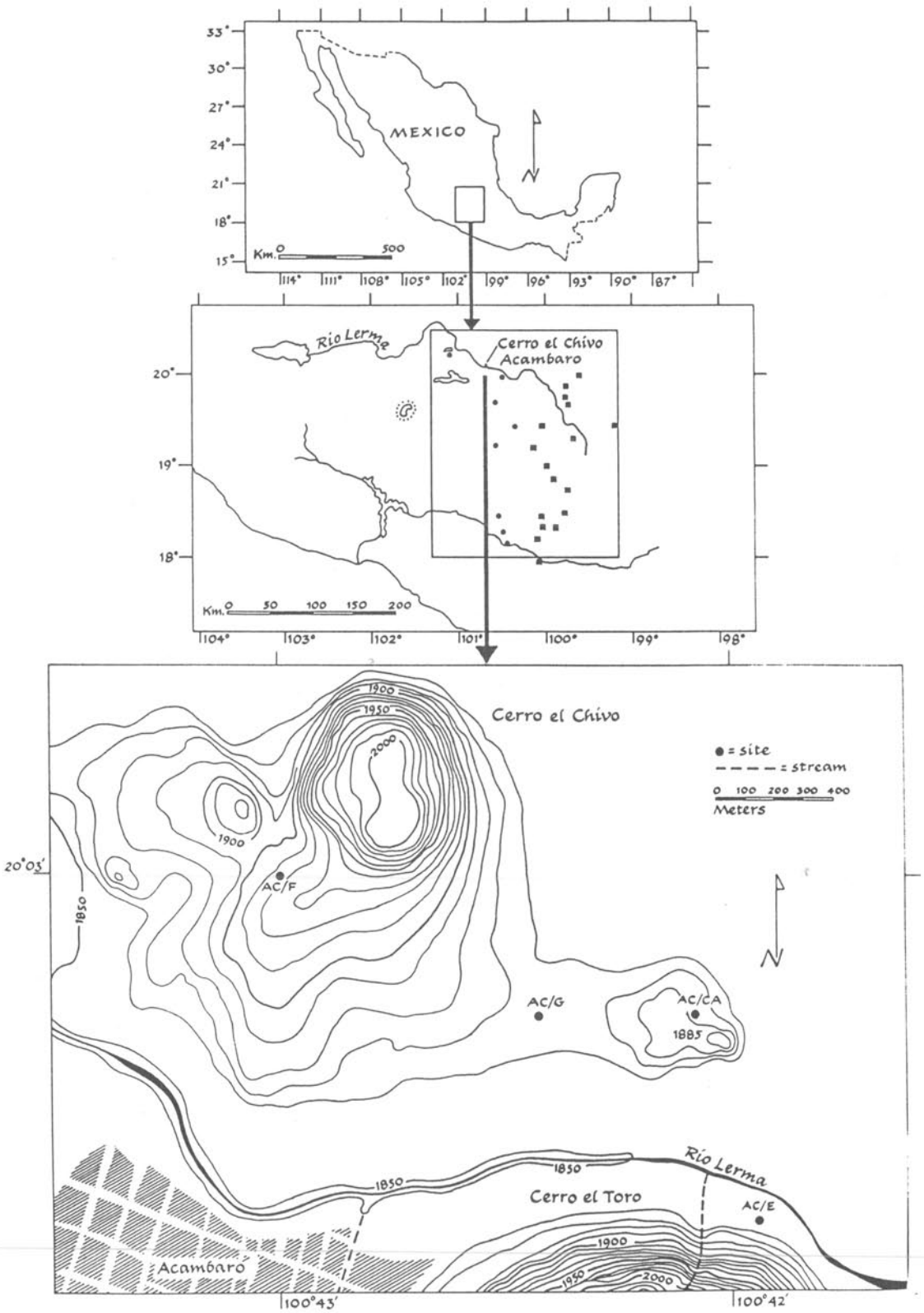

MEXICO
Km. 0 500
Río Lerma
Cerro el Chivo
Acambaro
Km. 0 50 100 150 200
Cerro el Chivo
● = site
– – – – = stream
0 100 200 300 400
Meters
AC/F
AC/G
AC/CA
1885
Río Lerma
Cerro el Toro
AC/E
Acambaro
20°03'
100°43'
100°42'

Figure 5

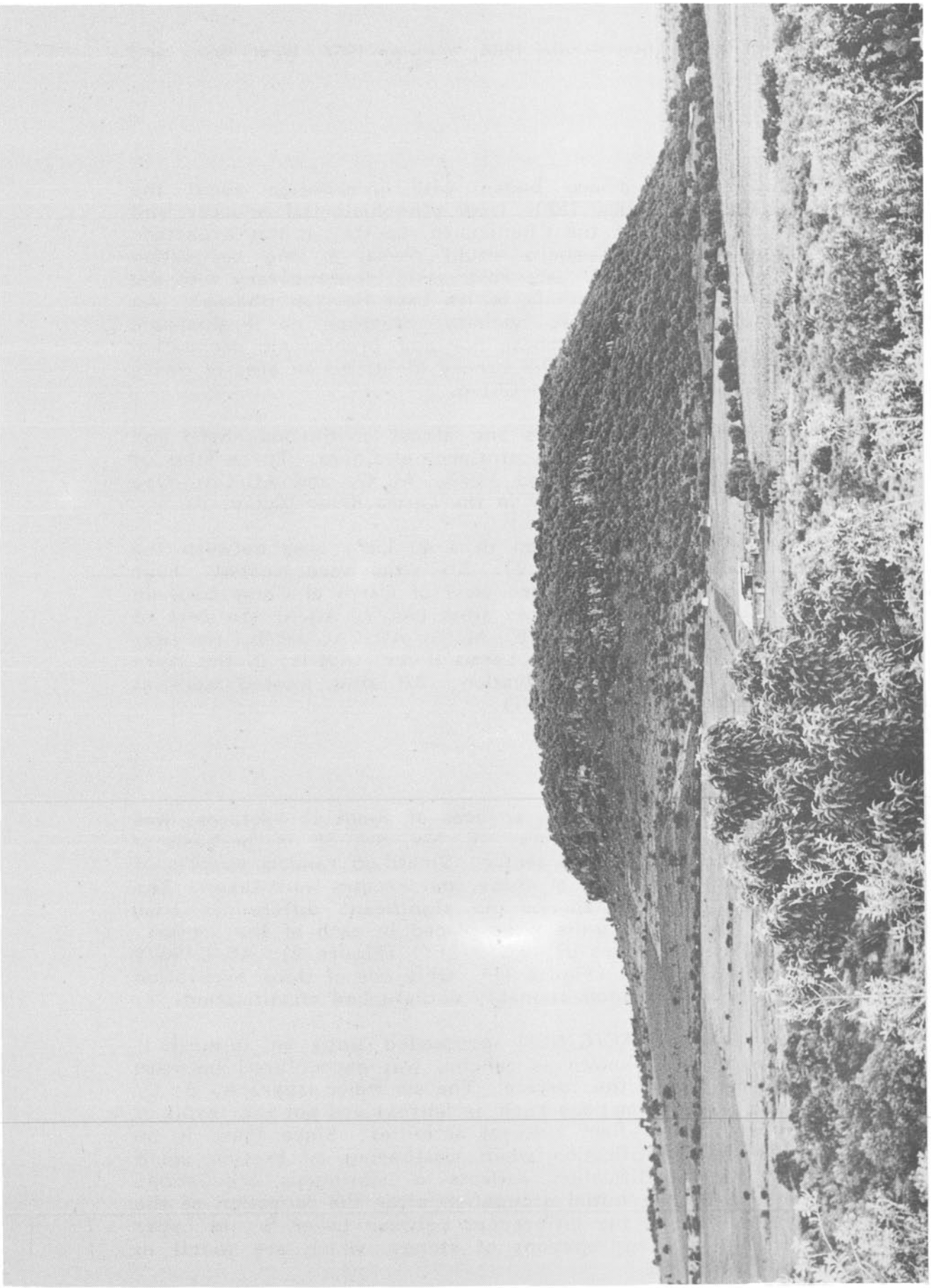


Figure 6

Tamayo with West 1964, Vivó Escoto 1964, Wagner 1964, West 1964a and 1964b.)

Surveys

This study of Acambaro began with information about the Protohistoric period (A.D.1450-1520) from ethnohistorical sources and with archaeological data from the Chupicuaro reports. It was expected, then, that excavation at Acambaro would reveal a long occupation ranging from Late Preclassic to Late Postclassic (contemporary with the Basin of Mexico's First Intermediate to its Late Horizon phases). An initial survey of the Acambaro vicinity revealed no Prehispanic occupation within the city of Acambaro nor any Prehispanic occupation on the summit of Cerro el Toro. The survey identified an area of dense occupation on the summit of Cerro el Chivo.

Later surveys revealed sparse and almost continuous sherd and lithic surface cover on the hillslopes of Cerro el Chivo. Three sites of dense artifact cover were designated AC/F, AC/G, and AC/CA. One site was located in the Chivo vicinity in the Lerma River Valley, AC/E.

A 100% survey was undertaken in a 40 km². area between the Solis Dam and Chamacuaro (Figure 7). Six sites were located. Four sites (AC/2, AC/3, AC/4, AC/5) are west of Cerro el Chivo between Chamacuaro and Inchamacuaro and two sites (AC/7, AC/8) are east of Cerro Chivo and adjacent sites AC/F, AC/G, AC/CA, AC/E. No sites were located in the flood plain of the Lerma River, that is, in the river valley area below the 1850 m. elevation. All sites located were at elevations above 1850 m. (Appendix II).

Excavations

The summit of Cerro el Chivo, an area of about 15 hectares, was divided or stratified into four sectors, NE, NW, SW, SE on the basis of the presence of structures in each sector. Stratified random samples of artifacts on the surface of each of these four sectors were taken. The ceramics and lithic artifacts showed no significant differences from sector to sector. Excavation units were placed in each of the sectors. These were AC/C/NE/1 (Figure 8), AC/C/SE/1 (Figure 9), AC/C/SW/1 (Figure 10), and AC/C/NW/1 (Figure 11). Only one of these excavation units, AC/C/NE/1, yielded unquestionably undisturbed stratification.

The excavation of AC/C/NE/1 proceeded until an indurated, laminar carbonate horizon, known as caliche, was encountered betweem 165 cm. amd 185 cm. below the surface. The six major layers A, B, C, D, E, and F (and other formations such as lenses) are not the result of natural occurrences and reflect cultural activities. Since there is no important gap in the stratification when weathering or erosion could have occurred, the stratification reflects a continuous occupation. Layer A appears to be the initial occupation after the formation of the carbonate horizon. One of the differences between Layer B and Layer A is the introduction of aggregations of stones, which are found in

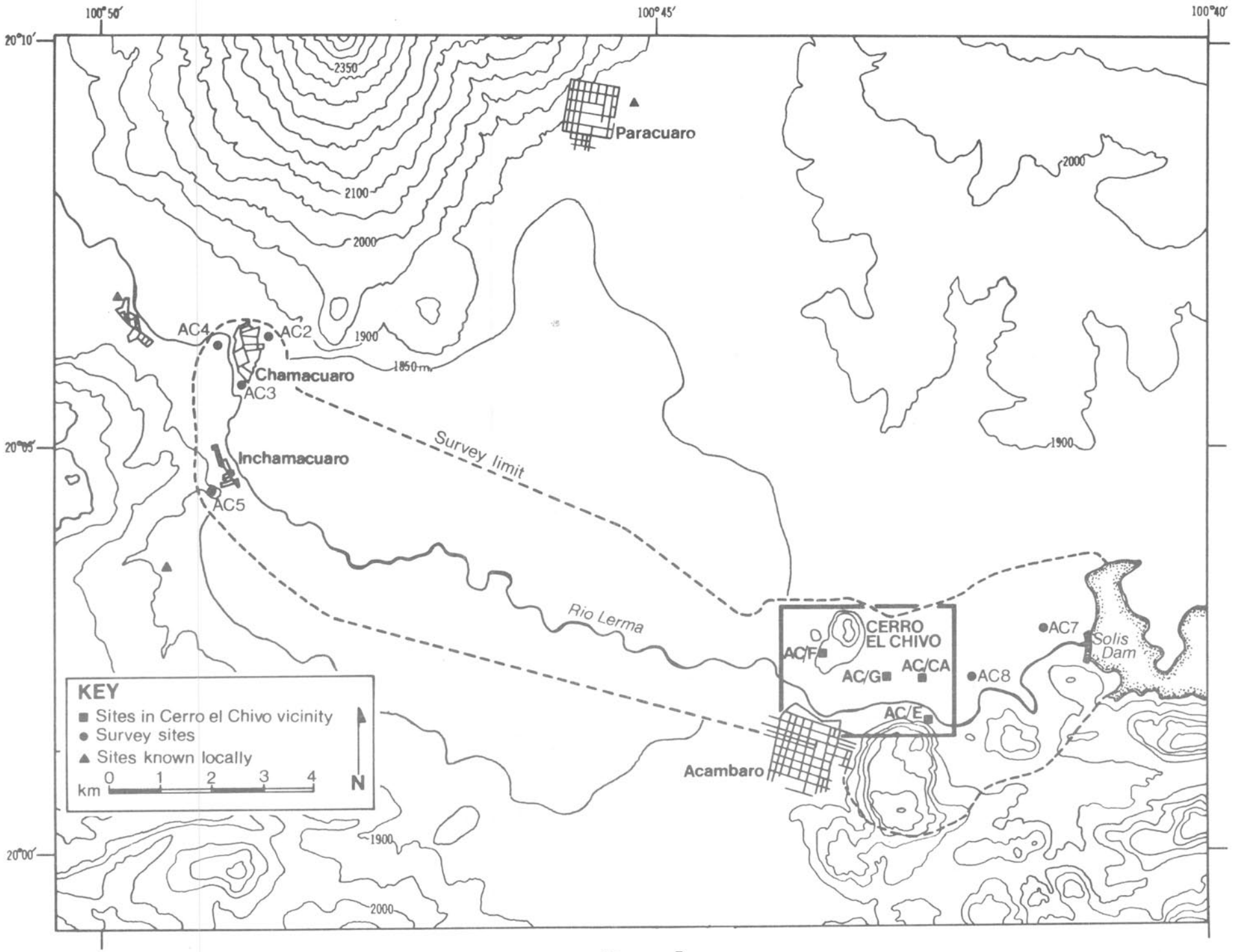
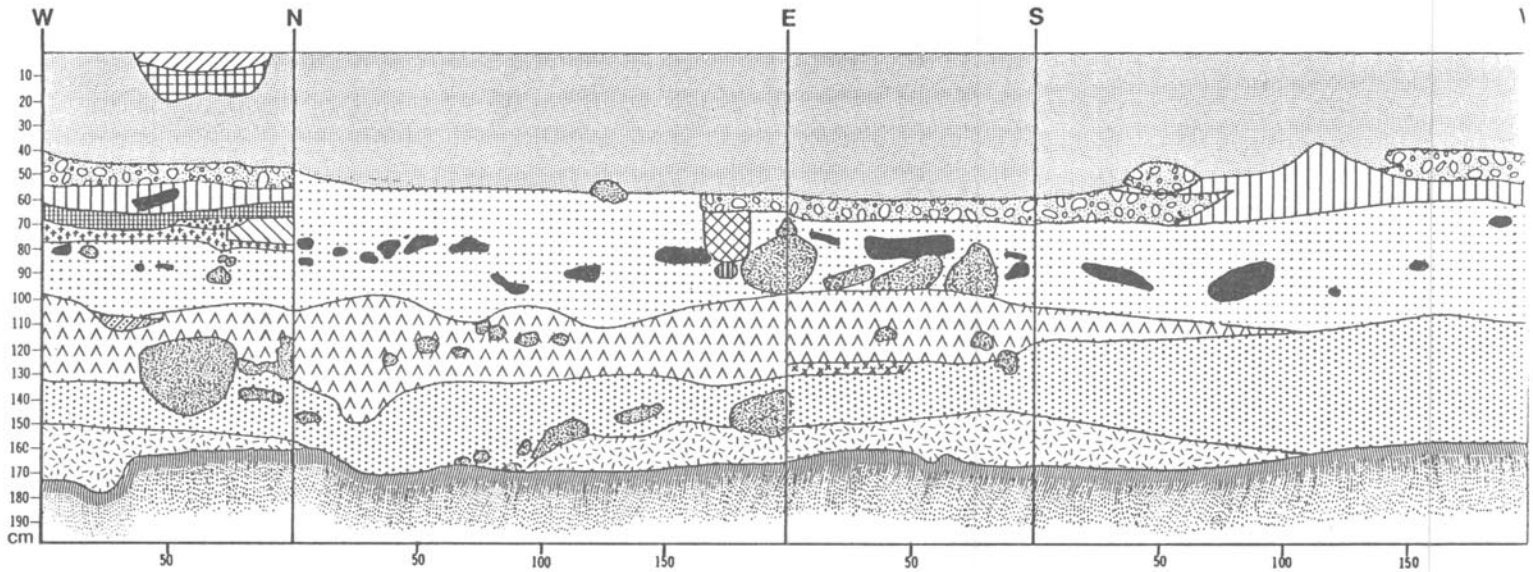

100°50′
100°45′
100°40′
20°10′
20°05′
20°00′
2350
2100
2000
1900
1850 m
Paracuaro
AC4
AC2
Chamacuaro
AC3
Inchamacuaro
AC5
Survey limit
Rio Lerma
CERRO
EL CHIVO
AC/F
AC/G
AC/CA
AC/E
AC7
AC8
Solis
Dam
Acambaro
KEY
Sites in Cerro el Chivo vicinity
Survey sites
Sites known locally
km 0 1 2 3 4
N

Figure 7

Excavation Unit AC/C/NE/1

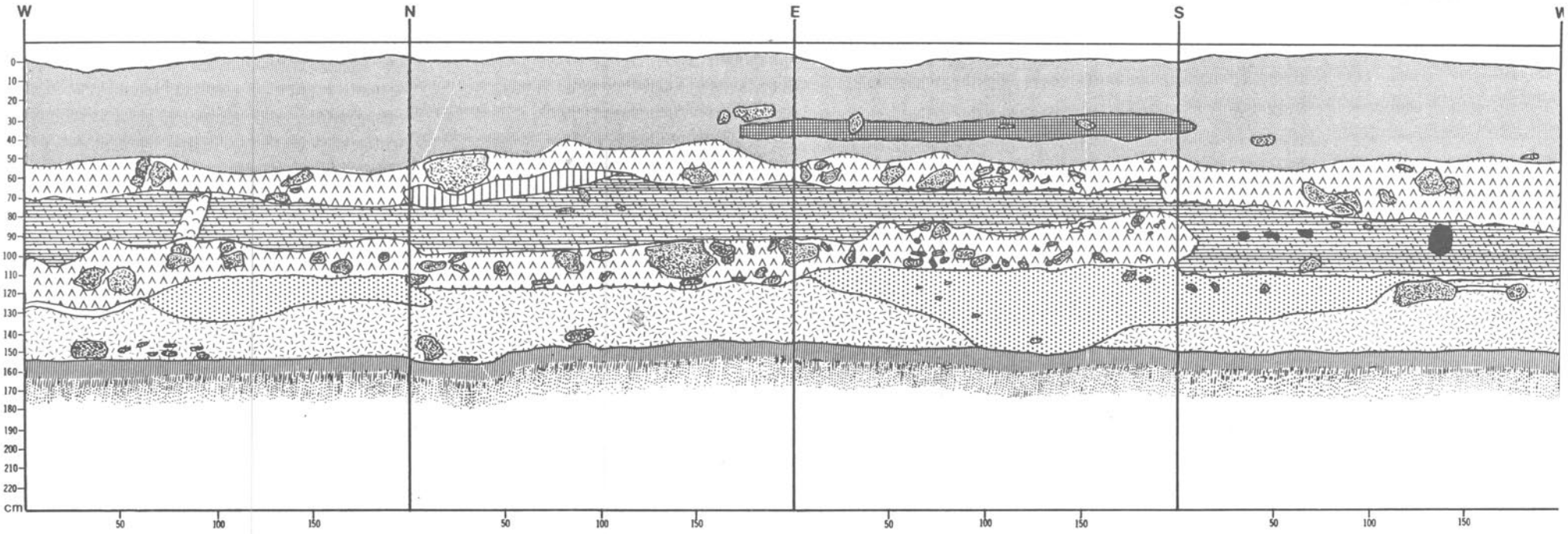


KEY:

- Light gray (10 YR 7/1) earth
- Silty white (10 YR 8/2) earth
- F — Brown (7.5 YR 5/4) earth
- Caliche fragments
- E — Brown (7.5 YR 5/4) compact earth
- Dark grayish brown (10 YR 4/2) earth within a pit defined by carbon enriched earth
- Stones
- Bone
- Carbon enriched earth
- Clayey brown (7.5 YR 5/4) earth with few inclusions
- Light yellowish-brown (10 YR 6/4) earth with crystalline rock at top contact
- Hard dark reddish-brown (5 YR 3/3) earth with inclusions
- Burnt and compacted clasts of dark grayish brown (10 YR 4/2) earth
- D — Silty pale brown (10 YR 6/3) earth with fine inclusions
- Soft dark gray (7.5 YR 4/0) earth
- C — Silty pale brown (10 YR 6/3) earth with stones
- Silty gray (5 YR 6/1) earth
- B — Silty dark grayish brown (10 YR 4/2) earth
- A — Hard very pale brown (10 YR 7/3) earth
- Caliche horizon

Figure 8

Excavation Unit AC/C/SW/1

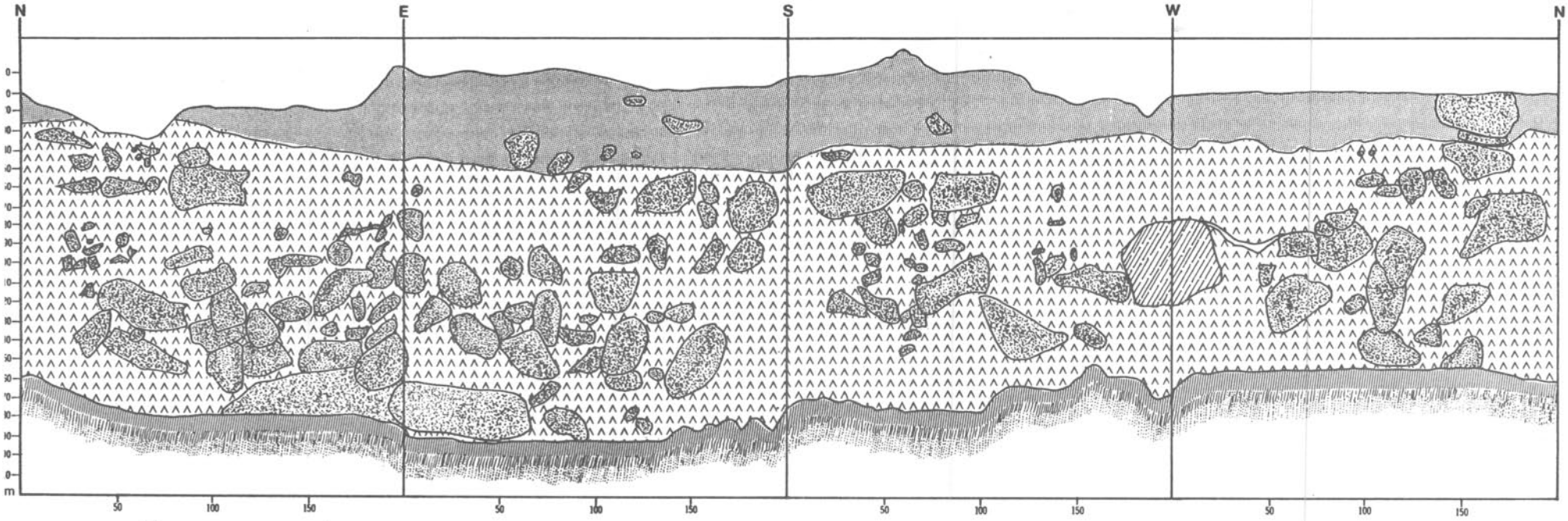


KEY:

- Brown (7.5 YR 5/4) earth
- Clayey brown (7.5 YR 5/4) earth with few inclusions
- Stones
- Silty pale brown (10 YR 6/3) earth with stones
- Brown (7.5 YR 5/4) compact earth
- Wood
- Yellowish red (5 YR 5/8) earth
- Carbon enriched earth
- Ash
- Silty dark grayish brown (10 YR 4/2) earth
- Hard very pale brown (10 YR 7/3) earth
- Caliche horizon

Figure 9

Excavation Unit AC/C/SE/1

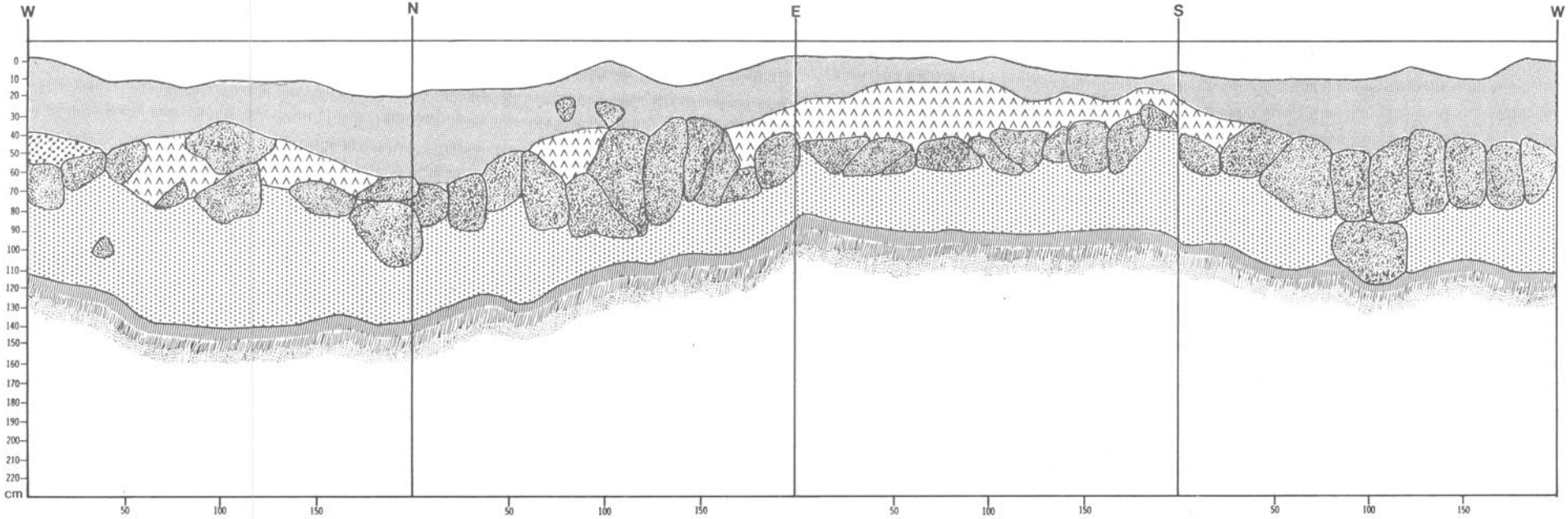


KEY:

- Brown (7.5 YR 5/4) earth
- Stones
- Silty pale brown (10 YR 6/3) earth with stones
- Ash
- Earth tube
- Caliche horizon

Figure 10

Excavation Unit AC/C/NW



KEY:

- Brown (7.5 YR 5/4) earth
- Stones
- Silty pale brown (10 YR 6/3) earth with stones
- Silty gray (5 YR 6/1) earth
- Silty dark grayish brown (10 YR 4/2) earth
- Caliche horizon

Figure 11

Layer C and Layer D as well. Layer D is characterized by the presence of clumps of carbon enriched earth, the residue of a series of fires. Layer E appears irregularly. At the base of Layer F are concentrations of fragments of caliche. These fragments appear to be by-products of the shaping of larger pieces of caliche. The aggregation of caliche fragments are spatially related to the feature on the NE face of the excavation unit at 65 cm. to 85 cm. below surface. This feature appears to be a small pit and its association with the caliche fragments suggest that it may have held a wooden support which served as the vertical axis for a hoisting device used in the manufacture of building blocks for architectural structures. Layer F shows no particular features except for a 10 cm. deep pit in the NW face which appears to be the result of recent activities.

The excavation procedure was to dig levels no greater than 15 cm. in depth within these layers. In other words, no level violated a layer and layers were dug in units of 15 cm. or less if their boundaries occurred before the completion of a 15 cm. level. A total of 16 levels within these layers were dug. The relationship between levels and layers is as follows:

Layer F	Level 1
	Level 2
	Level 3
	Level 4
Layer E	Level 5
Layer D	Level 6
	Level 7
	Level 8
Layer C	Level 9
	Level 10
Layer B	Level 11
	Level 12

Level 13

Layer A Level 14

Level 15

Level 16

Test excavation units were also placed at survey sites AC/E and AC/F (Figure 12). The results of these excavations appear in appropriate sections.

Ceramic Analysis (Appendix III)

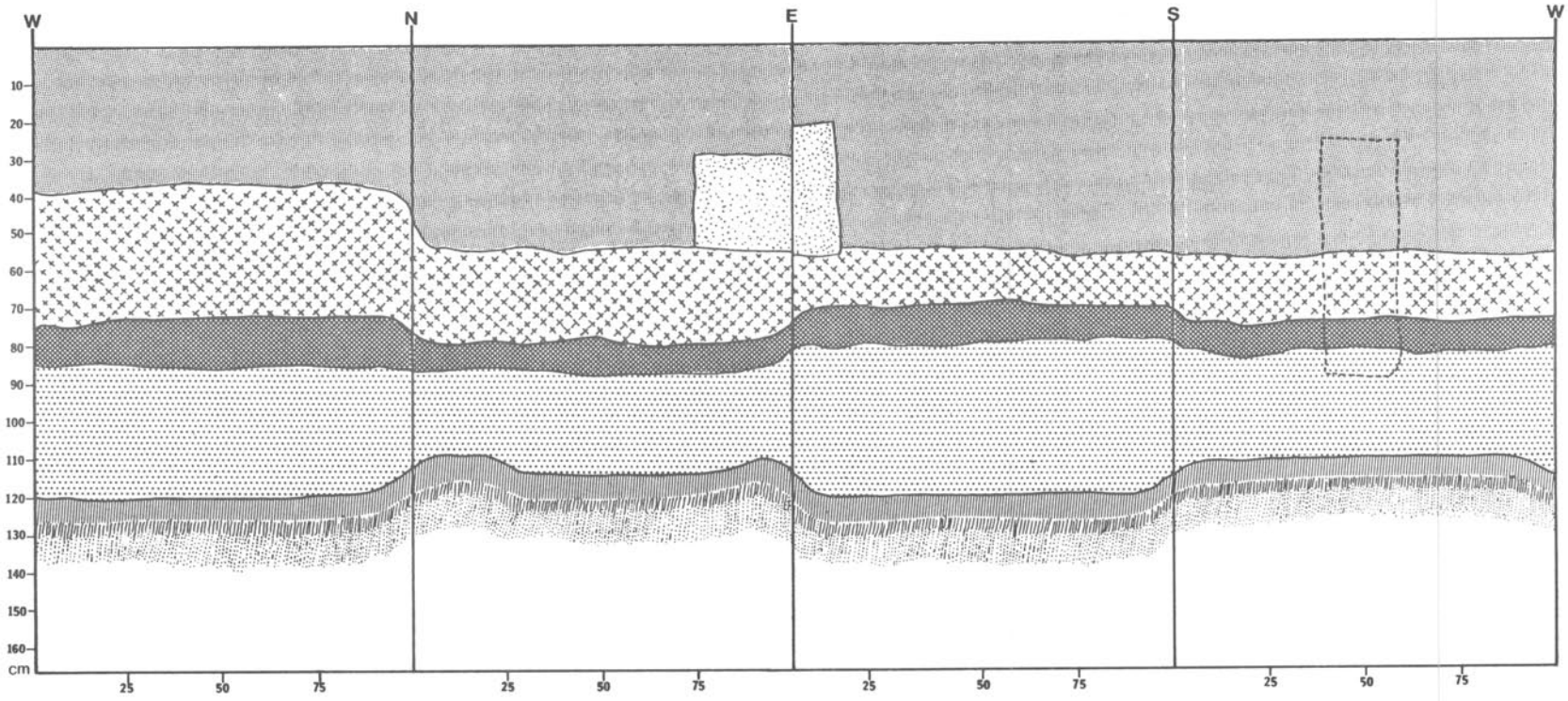
The ceramic artifacts consist of vessel sherds collected in the surface survey and excavation units. The ceramic analysis used the stratigraphy in excavation unit AC/C/NE/1 for inferring chronological relationships, and all sherds were employed in the classification. A total of 97,000 ceramic artifacts was used for the analysis. A ten per cent sample, that is about 10,000, was chosen for intensive study. Three criteria were used in choosing the sample; variation, number, and provenience. The sample represents the full range of variation of attributes and an attempt was made to obtain a number of sherds sufficient to successfully describe attributes and clusters of attributes. The third criterion required that the sample include sherds found in undisturbed stratified deposits. Thus, 4,834 of the 10,000 were found in stratified layers in AC/C/NE/1.

The ceramic analysis was based on the type-variety system using the taxa of ware, type, and variety to classify sherds. The concept of group was used as an early step in the process of classification. Ware, type, and variety are ideational concepts, and group is a phenomenological concept. Groups result from the laboratory examination of actual sherds and are based particularly on attributes of form and color. Groups are the basis for types on the next level of analysis. In an initial study of a ceramic collection that is both small and has little comparative information, group provides some initial results without establishing a full-blown classification that would have to be amended when larger collections and comparative data are ultimately obtained.

Groups together with stratigraphy were used to yield chronological information. The following groups were defined:

Group 1	Chipicuaro Painted
Group 2	Chipicuaro Monochrome
Group 3	Tarandacuao Dark Slipped
Group 4	Iramuco Polychrome
Group 5	Ario Black on Red

Excavation Unit AC/F



Brown (7.5 YR 5/4) earth

Dressed stone

Excavation for dressed stone

Silty gray (5 YR 6/1) earth

Black (10 YR 2/1) earth

Silty dark grayish brown (10 YR 4/2) earth

Caliche horizon

Figure 12

Group 6	Acuitzio Red on Black
Group 7	Nancho Orange Polychrome
Group 8	Salitre Polychrome
Group 9	La Merced Waxy-Slipped
Group 10	Truchas Applique
Group 11	Paso Ancho Red Rim
Group 12	Garita Black-Brown
Group 13	Cantinas Red-Orange
Group 14	Encarnacion Red Zoned
Group 15	Blanco Eroded
Group 16	Ojo de Agua
Group 17	Buena Vista Orange
Group 18	Iglesias Eroded
Group 19	Copandero Excised

The plot of groups against the levels in which they were found (Chart 1) gives information on provenience but not on which groups were contemporaneous. Mere presence of groups in the same level is not enough to demonstrate contemporaneity. It is strength of association that marks contemporaneity. A measure of association is needed. A clustering algorithm is such a measure. It determines which groups are "close" to one another and provides the basis for an assessment of contemporaneity. The groups were clustered by a K-means algorithm. The K-means algorithm was used on a matrix of frequencies of the groups in the stratigraphic levels. The algorithm started with a random distribution of groups into clusters. Then each group was tested to see if it was "closer" to another cluster. The measure of closeness used was the Euclidean distance from the center of gravity of the cluster, using the rows of the matrix of frequencies as vectors. If a group was closer to another cluster, it was transferred to that cluster; otherwise it was left in its current cluster. A pass was made testing all groups for relocation. The algorithm terminated when no relocations were made during a pass through all the groups. The results were as follows:

Cluster 1	Group 1
Cluster 2	Group 2
Cluster 3	Groups 3 and 4
Cluster 4	Groups 5 through 10, 14 and 19
Cluster 5	Groups 15 through 18
Cluster 6	Groups 11 through 13

Ceramic Analysis, Stratigraphy, and Ceramic Complexes

Groups 1 and 2, Chupicuaro Painted and Chupicuaro Monochrome, comprised almost all of the sherds in Layer A, levels 14 through 16, and represents the earliest complex at the site. It is called the Chupicuaro Complex. Group 2, Chupicuaro Monochrome, clustered separately, and this appears to be a result of the types on which the group is based continuing strongly into level 6, but Chupicuaro Painted does not. It would have clustered the same as Group 1 except that it appears importantly in Layer D, level 6. Therefore, Chupicuaro

Chart 1

LEVELS

Groups	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	12	4	1	2	7	10	12	52	144	80	97	195	88	161	90	1
2	0	1	1	2	2	336	23	38	50	59	38	118	113	109	92	39
3	0	0	0	0	0	0	3	0	8	6	1	120	1	3	9	0
4	1	2	5	2	2	3	3	8	6	14	14	49	16	19	1	0
5	0	4	1	0	0	2	4	2	1	7	5	27	17	9	1	0
6	0	0	2	0	0	0	0	2	4	1	15	5	3	1	0	0
7	0	0	0	0	0	0	0	0	4	0	2	4	1	0	0	0
8	0	0	0	0	0	0	1	1	3	0	0	1	1	0	0	0
9	0	0	0	0	1	0	2	2	9	0	3	1	1	0	0	0
10	0	0	0	0	1	0	0	1	2	3	4	3	0	3	0	0
11	1	2	11	2	85	45	66	44	20	3	4	44	3	0	1	0
12	17	6	13	14	111	104	140	115	49	2	4	4	3	2	0	0
13	2	0	0	1	17	36	87	84	16	1	0	1	0	0	0	0
14	0	0	0	0	25	39	17	25	13	1	0	1	0	2	0	0
15	81	47	45	37	8	2	3	3	0	0	0	0	0	0	0	0
16	16	20	27	72	9	25	4	4	1	0	0	0	0	0	0	0
17	67	44	47	48	1	2	0	0	1	0	0	0	0	0	0	0
18	90	34	48	32	0	0	0	0	0	0	0	0	0	0	0	0
19	8	4	12	2	0	0	0	0	0	0	0	0	0	0	0	0

CLUSTERING MATRIX

Monochrome is considered representative of a subcomplex contemporary with the Chupicuaro Complex but continuing after it. This subcomplex is called Chupicuaro/Solis. Florance (1982) in his surface survey of Lerma Valley sites did not find Chupicuaro Monochrome distributed differently from Chupicuaro Painted and therefore, concluded it was not later. Without further data it is difficult to determine whether the differences in distribution at Chivo and the Florance survey sites are the result of chronological or settlement differences or perhaps a result of different interpretations of the stratification at Cerro el Chivo. Most of the sherds in Groups 5 through 10 were found in Layer B and levels 11 through 13. These groups are chronologically Mixtlan Complex. It is difficult to understand why Group 14 and Group 19 have clustered with Groups 5 through 10. This clustering may be a result of lack of sufficient data for Group 14 and Group 19. The attributes of Group 14 seem to indicate that it should be placed among the groups of the Lerma complex. Attributes of Group 19 place it among the groups of the later Acambaro Complex.

Groups 11 through 13 provide the majority in Layers C, D, and E (levels 5 through 10) and constitute the Lerma Complex. Group 3 and Group 4 in Layer B (levels 11 through 13) and Layer C (levels 9 and 10) are considered Mixtlan/Lerma Subcomplex. Groups 15 through 18 constitute the Acambaro Complex. They were found in Layer F (levels 1 through 4).

In summary, the ceramic complexes from earliest to latest are:

Chupicuaro
    Chupicuaro/Solis (subcomplex)
Mixtlan
    Mixtlan/Lerma (subcomplex)
Lerma
Acambaro

The Chupicuaro complex appears to have a Lerma River Valley distribution. The later complexes may have an eastern frontier zone distribution. One or more of the ceramics of the Lerma and Acambaro Complexes were found at Zirizicuaro, Taximaroa, Zitacuaro, and Tuzantla (Snarskis 1974).

An analysis of the ceramics of the survey sites collected from the surface (AC/G, CA, AC/2, AC/3, AC/4, AC/5, AC/7, and AC/8) and in excavation (AC/E, AC/F) yielded the following results (Chart 2). The Chupicuaro Ceramic Complex is represented at all sites except AC/F, AC/G, AC/CA and possibly AC/7. Only one group of the Mixtlan Complex, Ario Black on Red, is represented and only at AC/E and possibly AC/2 and AC/3. Since that group is found stratigraphically among groups of the Chupicuaro Complex as well, its presence on the surface may be reflecting a Chupicuaro rather than Mixtlan occupation. The groups of the Lerma Complex are at all sites but AC/F, AC/G, and AC/CA. The groups of the Acambaro phase are found at all sites. In addition ceramics of the Yaguarato Complex which characterized the Late

Chart 2

SURVEY SITES AND CERAMIC GROUPS

Complex	Group	Sites	E	F	G	CA	2	3	4	5	7	8
Chupicuaro	C. painted		29				27	1	3	1		8
Chupicuaro/ Solis	C. Monochrome		5				1		2	4	1	2
Mixtlan	Ario Black/Red		15				2	2				
Mixtlan/ Lerma	Iramuco						6	1		2		
Lerma	Paso Ancho						5	1		1		
	Garita						5	2	4	5		
	Cantinas						1		4	9		1
	Fresno*								1			
	Prieto						1					
	El Maguey						8	2				
	Jaral						1					
	La Vega								1			
	Inchamacuaro									1		
	San Ramon						9					1
	Encarnacion		21				13	3	6	4	9	8
Acambaro	Blanco Eroded						2		1	2		
	Ojo de Agua						12	4	6	16		3
	Buena Vista		67	25	14	23	2		11	3	42	1
	Iglesias		22	13	14		4		12	5	15	8
	Copandero		14	12	8	2	3		1	6	12	2
	X,AA,BB,Y,Z											
	La Jicamas						1					
	El Verdin						1	1	1	1		
	Tortuga						1			4		
	Paracuaro								9			
	Pelon							1	2			
	Los Organos						7		1	5		
	Providencia						5		1			
	San Felipe									1		
	Moreno						1		2	2		
	El Refugio						1		1			
	San Augustin									4	1	
	San Nicolas											1
	Jaripeo											1
	Cebadilla										2	7
Yaguarato Complex			17		3			2	1	8		1

* Group not in Cerro el Chivo collection.

Postclassic period (Protohistoric) at the Tarascan capital of Tzintzuntzan (Pollard 1972) were found at AC/3, AC/4, AC/5, AC/8, AC/G, and AC/E. Ojo de Agua group found at AC/2, AC/3, AC/4, AC/5, AC/8, and AC/E was found at Tzintzuntzan but, unlike the ceramics of the Tzintzuntzan Yaguarato Complex, this group was found only in one isolated locality in the northeastern outskirts of the city. The Yaguarato Ceramic Complex does not have antecedents at Acambaro. In contrast, the Ojo de Agua group does have antecedents in the Lerma Complex at Acambaro. Ceramic groups identified at sites located in the Lerma River Basin survey and not found at Cerro el Chivo are described in Appendix III.

Chronology of Ceramic Complexes

Several methods were used to obtain relative and absolute dates for these complexes. Muriel Porter Weaver (1969) cross-dated Chupicuaro with the Basin of Mexico sequences finding it contemporary with what she describes as Cuanalan/Tezoyuca/Patlachique/Tzacualli (Teotihuacan I) in the Valley of Teotihuacan and Ticoman I-IV/Cuicuilco IV/Chimalhuacan in the southern Basin of Mexico. The cross-dating places Chupicuaro contemporary with the First Intermediate Phase Two, Three, and Four of the Basin of Mexico which are dated from 650 B.C. to A.D. 100 in the chronology given by Sanders, Parsons, and Santley (1980) and with Tolstoy's (1978) First Intermediate Phases 5 through 11 of approximately the same dates.

In the Cerro el Chivo excavations Chupicuaro Groups 1 and 2 were predominately in Layer A and B and the groups of the Mixtlan complex were predominately in Layer B. Solid-carbon was obtained from the top of Layer B and the age in years (based on Libby half life of 5568 yrs.- I-7923) is 1635 ± 220 B.P. The date in years is A.D. 315, R.T. (radiocarbon time); adjusted (following Tolstoy 1978) to A.D. 380, S.T. (sidereal time). Thus, the Chupicuaro Complex at Cerro el Chivo is, expectably, important in the last centuries before the Christian Era.

The groups constituting the Mixtlan Complex dominate the next three hundred years at Cerro el Chivo. Solid-carbon from the bottom of Layer C (I-7924) yielded an age in years of 1530 ± 170 B.P. and a date in years of A.D. 415 R.T. which is adjusted to A.D. 475 S.T. (ibid.). The groups of the Mixtlan/Lerma Subcomplex were predominately in Layers B and C. They are transitional to the groups of the Lerma Complex. The Lerma Complex predominates in Layers C, D, E, and the Acambaro Complex is predominately in Layer F and cross-dates to the Lake Patzcuaro Basin Protohistoric, A.D. 1450-1520.

Chronology at Acambaro

Dates	*Phases*
A.D. 1520	
1450	Acambaro
A.D 1450	
475	Lerma
A.D. 475	
100	Mixtlan
A.D. 100	
B.C. 650	Chupicuaro

Lithic Artifacts

The total number of lithic artifacts collected was 11,419. These artifacts were obtained from the surface and excavation units on Cerro el Chivo, AC/NE, AC/NW, AC/SW, and AC/SE (Charts 3,4,5, and 6), from the sites in the Cerro el Chivo vicinity, AC/E, AC/F, AC/G, AC/CA and from the surface of the sites in the Lerma River Valley, AC/2, AC/3, AC/4, AC/5, AC/7, AC/8 (Charts 7 and 8). A sample, chosen to represent material, form, and technique of manufacture, was studied.

The chronological distribution of lithic artifacts at Cerro el Chivo was determined using the stratigraphy of AC/C/NE/1. Excavation units AC/C/NW, AC/C/SW, and AC/C/SE were not used for primary chronological data. The lithic artifacts in these excavation units fall within the range known from AC/C/NE and do not show any strong differential distribution or differential material, form, or technique of manufacture that would immediately suggest the direction of statistical analysis of the larger sample.

The materials used in the manufacture of these artifacts were primarily obsidian and basalt. A small number of artifacts were of chert, quartz, and vesicular lava. Obsidian of the black and gray variety (except for 13 flakes of red obsidian), is the predominant material. There were two well-known major sources of obsidian within 20 km. of Acambaro, Zinapecuaro and Ucareo. In a continuing project the Department of Chemistry at Rensselaer Polytechnic Institute has been subjecting nodules from Zinapecuaro and artifacts from Acambaro,

Chart 3

LITHIC ARTIFACTS

AC/C/NE/1 - Levels:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
CORPUS:	177	35	31	122	60	49	120	72	193	401	220	312	326	154	114	14
MATERIAL: OBSIDIAN																
FLAKES (Total):	53	19	11	73	53	23	62	68	111	324	129	139	175	122	101	11
Unretouched (Total)	51	17	10	65	50	22	58	61	102	296	119	129	158	111	92	7
Cortex	3	2	0	10	0	0	7	6	10	27	9	9	11	12	4	0
Inner	48	15	10	54	50	22	51	55	92	269	110	120	147	99	88	
Retouched (Total):	2	2	1	8	3	1	4	7	9	28	10	10	17	11	9	4
Side	2	1	1	1	2	1	0	1	4	12	4	5	12	3	5	1
End	0	1	0	1	1	0	2	1	5	16	3	0	3	8	4	1
Side & End	0	0	0	6	0	0	2	5	0	0	3	5	2	1	0	2
BLADES (Total):	121	13	18	25	4	24	52	0	80	70	81	164	110	34	10	5
Fine (Total):	80	10	9	15	4	22	40	0	80	64	71	157	59	34	10	5
Unretouched/Complete (Total):	0	0	0	0	0	1	0	0	0	2	0	1	1	0	0	0
Unretouched Snapped (Total):	68	10	8	18	2	18	28	3	42	51	35	114	57	34	10	5
Bulbar end left	19	5	3	13	1	10	10	1	7	23	15	45	41	27	2	2
Terminal end left	7	1	1	0	0	2	6	0	2	10	7	15	13	0	2	1
Medial	42	4	4	5	1	6	12	2	33	18	13	54	3	7	6	2
Retouched (Total):	20	0	1	7	2	3	12	0	35	11	31	42	1	0	0	0
Side	8	0	0	3	1	2	5	0	12	6	14	18	1	0	0	0
End	12	0	0	2	1	1	4	0	13	3	2	6	0	0	0	0
Side & End	0	0	1	1	0	0	3	0	13	2	20	18	0	0	0	0
Crude (Total):	39	3	9	0	0	0	2	12	0	6	10	7	41	0	0	0
Unretouched/Complete (Total):	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
Unretouched/Snapped (Total):	33	3	9	0	0	2	12	0	0	6	10	7	38	0	0	0
Bulbar end left	2	0	0	0	0	0	4	0	0	1	0	1	22	0	0	0
Terminal end left	11	1	4	0	0	2	1	0	0	1	0	0	4	0	0	0
Medial	20	2	5	0	0	0	7	0	0	4	10	6	12	0	0	0
Retouched (Total):	2	2	1	19	3	1	0	0	0	3	7	5	18	0	0	0
Side	1	0	1	5	1	0	0	0	0	1	3	3	4	0	0	0
End	1	1	0	10	2	0	0	0	0	1	3	2	4	0	0	0
Side & End	0	1	0	4	0	1	0	0	0	1	1	0	10	0	0	0
CORES (Total):	1	1	1	2	1	1	2	0	1	4	0	4	6	2	0	0
Crude	1	1	0	1	0	1	1	0	1	1	0	2	3	2	0	0
Fluted blade	0	0	1	1	1	0	1	0	0	3	0	2	3	0	0	0
POINTS (Total):	1	0	0	1	1	0	0	1	1	0	0	0	0	1	0	0
Expanding-stem	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Contracting-stem	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
Broad-stem	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stemless	1	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0

Chart 4

LITHIC ARTIFACTS

AC/C/NE/1 - Levels:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
CORPUS:	4	0	0	3	1	1	3	1	3	22	5	6	6	15	14	14
MATERIAL: BASALT																
FLAKES (Total):																
Unretouched (Total)	4	0	0	3	1	1	3	1	3	22	5	6	6	15	14	14
Cortex	0	0	0	0	0	0	0	0	0	5	0	0	0	2	1	1
Inner	4	0	0	3	1	1	3	1	3	17	5	0	0	13	13	13
Retouched (Total):																
Side																
End																
Side & End																
BLADES (Total):																
Fine (Total):																
Unretouched/Complete (Total):																
Unretouched Snapped (Total):																
Bulbar end left																
Terminal end left																
Medial																
Retouched (Total):																
Side																
End																
Side & End																
Crude (Total):																
Unretouched/Complete (Total):																
Unretouched/Snapped (Total):																
Bulbar end left																
Terminal end left																
Medial																
Retouched (Total):																
Side																
End																
Side & End																
CORES (Total):																
Crude																
Fluted blade																
POINTS (Total):																
Expanding-stem																
Contracting-stem																
Broad-stem																
Stemless																

Chart 5

LITHIC ARTIFACTS

	AC/ (Surface)									
	E	F	G	CA	2	3	4	5	7	8
CORPUS:	1633	86	23	108	47	70	26	117	30	32
MATERIAL: OBSIDIAN										
FLAKES (Total):	1591	37	15	69	32	51	8	46	13	22
Unretouched (Total)	1543	32	10	69	32	51	8	46	13	20
Cortex	15	0	0	0	0	0	0	0	0	0
Inner	1428	32	10	69	32	51	8	46	13	20
Retouched (Total):	48	5	5	0	0	0	0	0	0	2
Side	21	5	5	0	0	0	0	0	0	1
End	19	0	0	0	0	0	0	0	0	1
Side & End	8	0	0	0	0	0	0	0	0	0
BLADES (Total):	33	31	6	7	10	6	5	70	17	7
Fine (Total):	19	23	5	3	0	3	4	65	5	5
Unretouched/Complete (Total):	3	0	0	0	0	0	0	0	0	0
Unretouched Snapped (Total):	19	23	4	3	9	3	3	65	5	3
Bulbar end left	4	3	0	0	0	0	0	0	0	1
Terminal end left	5	8	1	0	0	0	0	0	0	0
Medial	10	12	4	3	9	3	3	65	5	2
Retouched (Total):	0	0	1	0	1	0	1	0	10	2
Side	0		1	0	0	0	1	0	10	2
End	10		0	0	1	0	0	0	0	0
Side & End	0		0		0	0	0	0	0	0
Crude (Total):	14	8	1	4	0	3	1	5	2	2
Unretouched/Complete (Total):	3	1	0	0	0	2	0	0	0	1
Unretouched/Snapped (Total):	11	7	1	4	0	0	0	0	2	1
Bulbar end left	4	4	1	0	0	0	0	0	0	0
Terminal end left	7	0	0	2	0	0	0	0	0	0
Medial	0	3	0	2	0	0	0	0	2	1
Retouched (Total):	0	0	1	0	0	1	1	5	0	0
Side	0	0	0	0	0	0	1	0	0	0
End	0	0	1	0	0	1	0	5	0	0
Side & End	0	0	0	0	0	0	0	0	0	0
CORES (Total):	0	0	1	0	4	13	0	1	0	3
Crude	0	0	1	0	0	0	0	0	0	0
Fluted blade	0	0	0	0	4	13	0	1	0	3
POINTS (Total):	9	2	1	1	1	0	1	0	0	0
Expanding-stem	0	0	0	0	0	0	0	0	0	0
Contracting-stem	0	0	0	0	0	0	0	0	0	0
Broad-stem	5	0	0	0	0	0	0	0	0	0
Stemless	4	2	0	1	1	0	1	0	0	0

Chart 6

LITHIC ARTIFACTS

	AC/ (Surface)									
	E	F	G	CA	2	3	4	5	7	8
CORPUS:	61	39	4	5	7	8	1	5	7	6
MATERIAL: BASALT										
FLAKES (Total):	61	39	4	5	7	8	1	5	7	6
Unretouched (Total)	61	39	4	5	4	8	1	5	7	5
Cortex	0	0	0	0	0	0	0	0	0	0
Inner	61	39	4	5	4	8	1	5	7	5
Retouched (Total):					3					
Side					3					
End					0					
Side & End					0					
BLADES (Total):										
Fine (Total):										
Unretouched/Complete (Total):										
Unretouched Snapped (Total):										
Bulbar end left										
Terminal end left										
Medial										
Retouched (Total):										
Side										
End										
Side & End										
Crude (Total):										
Unretouched/Complete (Total):										
Unretouched/Snapped (Total):										
Bulbar end left										
Terminal end left										
Medial										
Retouched (Total):										
Side										
End										
Side & End										
CORES (Total):										
Crude										
Fluted blade										
POINTS (Total):										
Expanding-stem										
Contracting-stem										
Broad-stem										
Stemless										

Chart 7

LITHIC ARTIFACTS

	AC/C			
	NE/Surface	NW/1	SW/1	SE/1
CORPUS:	562	925	136	89
MATERIAL: OBSIDIAN				
FLAKES (Total):	441	766	97	68
Unretouched (Total)	398	717	64	68
Cortex	46	54	16	0
Inner	352	663	48	68
Retouched (Total):	34	49	33	6
Side	23	32	16	2
End	11	12	13	4
Side & End	0	5	4	4
BLADES (Total):	99	144	35	13
Fine (Total):	70	129	29	11
Unretouched/Complete (Total):	0	3	3	0
Unretouched Snapped (Total):	61	126	31	9
Bulbar end left	19	8	6	4
Terminal end left	7	27	6	1
Medial	37	91	29	4
Retouched (Total):	9	0	1	0
Side	0	0	0	0
End	1	0	0	0
Side & End	8	0	1	0
Crude (Total):	29	15	6	2
Unretouched/Complete (Total):	7	1	3	0
Unretouched/Snapped (Total):	17	11	3	2
Bulbar end left	2	5	0	0
Terminal end left	10	2	2	1
Medial	5	4	1	1
Retouched (Total):	5	3	0	0
Side	5	1	0	0
End	0	1	0	0
Side & End	0	1	0	0
CORES (Total):	13	3	1	0
Crude	6	3	0	0
Fluted blade	7	0	1	0
POINTS (Total):	7	12	3	0
Expanding-stem	0	9	3	0
Contracting-stem	3	0	0	0
Broad-stem	0	0	0	0
Stemless	4	3	3	0

Chart 8

LITHIC ARTIFACTS

AC/C (Surface and disturbed trenches)

	NE	NW	SW	SE
CORPUS:	34	175	6	7
MATERIAL: BASALT				
FLAKES (Total):	34	173	5	6
Unretouched (Total)	33	173	5	6
Cortex	2	10	0	0
Inner	31	163	5	6
Retouched (Total):	1			
Side	1			
End	0			
Side & End	0			
BLADES (Total):				
Fine (Total):				
Unretouched/Complete (Total):				
Unretouched Snapped (Total):				
Bulbar end left				
Terminal end left				
Medial				
Retouched (Total):				
Side				
End				
Side & End				
Crude (Total):				
Unretouched/Complete (Total):				
Unretouched/Snapped (Total):				
Bulbar end left				
Terminal end left				
Medial				
Retouched (Total):				
Side				
End				
Side & End				
CORES (Total):		3	1	1
Crude		3	1	1
Fluted blade				
POINTS (Total):				
Expanding-stem				
Contracting-stem				
Broad-stem				
Stemless				

Zitacuaro, Zirizicuaro, Taximaroa, Tuzantla, and Tzintzuntzan (the last from Pollard 1972) to trace element analysis. The results have been compared with those reported from Zinapecuaro, Altotonga (Veracruz), Zaragoza (Puebla). Preliminary results of the RPI project show that some of the black obsidian artifacts from Taximaroa and Tzintzuntzan correspond to obsidian from the Altotongo source (Type B). Some of the black obsidian artifacts from Tzintzuntzan correspond to obsidian from Zaragoza (Type D). Surprisingly, the trace element profile of Type F, the type attributed to the Zinapecuaro source as well as to artifacts from Villa Morelos (about 75 km. southwest of Tuzantla) and Tzintzuntzan by Hester, Jack, and Benfer (1973) is different from the trace element determined by the RPI study of its Zinapecuaro sample. In addition, the RPI Zinapecuaro nodules plotted differently from the artifacts from the Tarascan frontier sites as well as differently from the RPI Tzintzuntzan sample. To determine the reasons for these differences new methods are being instituted in the RPI trace element analysis of the artifacts from Acambaro and other frontier sites as well as from the source at Ucareo.

The four major morphological categories of lithic artifacts are flake, core, blade, and point. Tools were examined by stereoscopic microscopy with magnification at 40 x.

A. Flakes

Total number: 6838 obsidian, 454 basalt, 15 chert, 12 quartz. Dimensions (no significant differences based on material): largest dimension range is from 1 cm. to 6 cm., mean is 1.5 cm.; thickness range is less that 1 cm. to 3 cm., mean is 1 cm.

Flakes are spalls, both cortex and inner, not manufactured from a preformed core. They are classified as to whether they were unretouched cortex or inner flakes or retouched cortex or inner flakes. Unretouched describes a lack of the characteristics described below under retouched, namely a lack of deliberate secondary chipping to change the form of the artifact. The ratio of cortex to inner flakes is about 1:15. This ratio is consistent with manufacturing of flakes from nodules at the sites. The exception is AC/E where the ratio was 1:100 indicating that a large proportion of the flakes were not manufactured at the site. Most unretouched flakes have indications of use-wear. Striations, edge-rounding, abrasive polishing/dulling, and fracturing were considered indicators of use-wear. Most flakes did not have indications of use-wear. Most that did had patterns described by Lewenstein (1981:181) for cutting and scraping. "There is almost identically sized (mean of .62-.63 mm) scar damage on each side of the cutting tools. ... All striae are parallel to the tool edge, and most are distributed bilaterally." Scraping produced shorter scar lengths and a lower incidence of non-feather terminations than cutting and left "...considerable difference in the size of microflaking between the two opposing sides of the scrapers. This asymmetry in edge damage can be a useful criterion for distinguishing scraping from cutting tools".

Whittling tools had heavy ventral microflaking with feather terminations and a very rounded edge (ibid.:185). Tringham *et al.* (1974:188) have found that the scar and abrasion distribution and morphological characteristics are the same for cutting, a one-way movement, as they are for sawing, a two-way movement, at least for flint.

Lewenstein (1981) also experimented with contact materials. She found that cutting bone resulted in a bilateral row of continuous large microflake scars. Cutting jute left little microflaking, an abraded dull zone, and bifacial striations parallel to the cutting edge. Sawing and whittling wood (fir, ironwood, and pine) produced moderate to heavy edge abrasion with feather terminations. On the other hand, cutting hide and scraping fish left little use-wear patterns.

On the basis of these experimental results, obsidian flakes in this collection are identified as having been used for cutting and sawing wood and for cutting bone. Worked bone was found at the site (see Appendix I). A small number of flakes can be identified as used for whittling.

Retouch, meaning deliberate retouch, follows Tringham *et al.'s* (1974:181) definition. "...the morphological modification of a flake by the removal of small flakes on the edges and/or surfaces of the flake in order to blunt an edge for hafting or handling, compensate for [surface curvature and edge protrusions] ...or other irregularities in order to make an edge usable...." The distinction between use-wear and retouch is made on the basis of both size of scars and patterning. Retouching on flakes were recorded according to the loci of the retouch. These loci are the side, the end, or the side and end. Retouch that produced a steep bevelled edge were found on the ends, sides, and sides and ends of flakes larger than 5 cm. in one dimension. Such retouch has identified scrapers in Mesoamerican studies (Cf. Benfer 1974, Pollard 1972, Tolstoy 1971). In addition, flakes have been unifacially retouched to form a notch, and angle retouched producing burin edges.

B. Cores

Total number crude: 24 obsidian, 5 basalt, 2 chert, 2 quartz. Total number fluted: 37 obsidian, 0 basalt, 0 chert, 0 quartz. Dimensions of crude: largest dimension range is 3.5 cm.to 6 cm., diameter range 3 cm. to 6 cm. Dimensions of fluted (all fragments): largest dimension range 2 cm. to 5 cm., diameter range is 1.3 cm. to 2.5 cm.

Cores are nodules from which flakes have been manufactured, and they may be crude or preformed. The only preform found in this collection is the fluted blade core. Tolstoy (1971:273) has noted that crude cores are "rather rare" in central Mexico. The presence of crude cores at Acambaro suggests a major lithic technological difference between the Basin of Mexico and this area. The crude core/flake technology does not seem to be Tarascan since Pollard (1972) records only six crude cores from her surface survey of Tzintzuntzan. It is

likely they are a product of Chichimec/Otomi lithic technology.

In this collection all fluted cores are fine, not crude. The fragments with platforms show that surface to have a dull, finely granular finish, produced by grinding, but possibly natural according to Tolstoy (1971:274). Central Mexican cores have this kind of platform as well as flat mirror-like platforms (ibid.). The latter are absent from this collection, suggesting another technological difference between this area and Central Mexico.

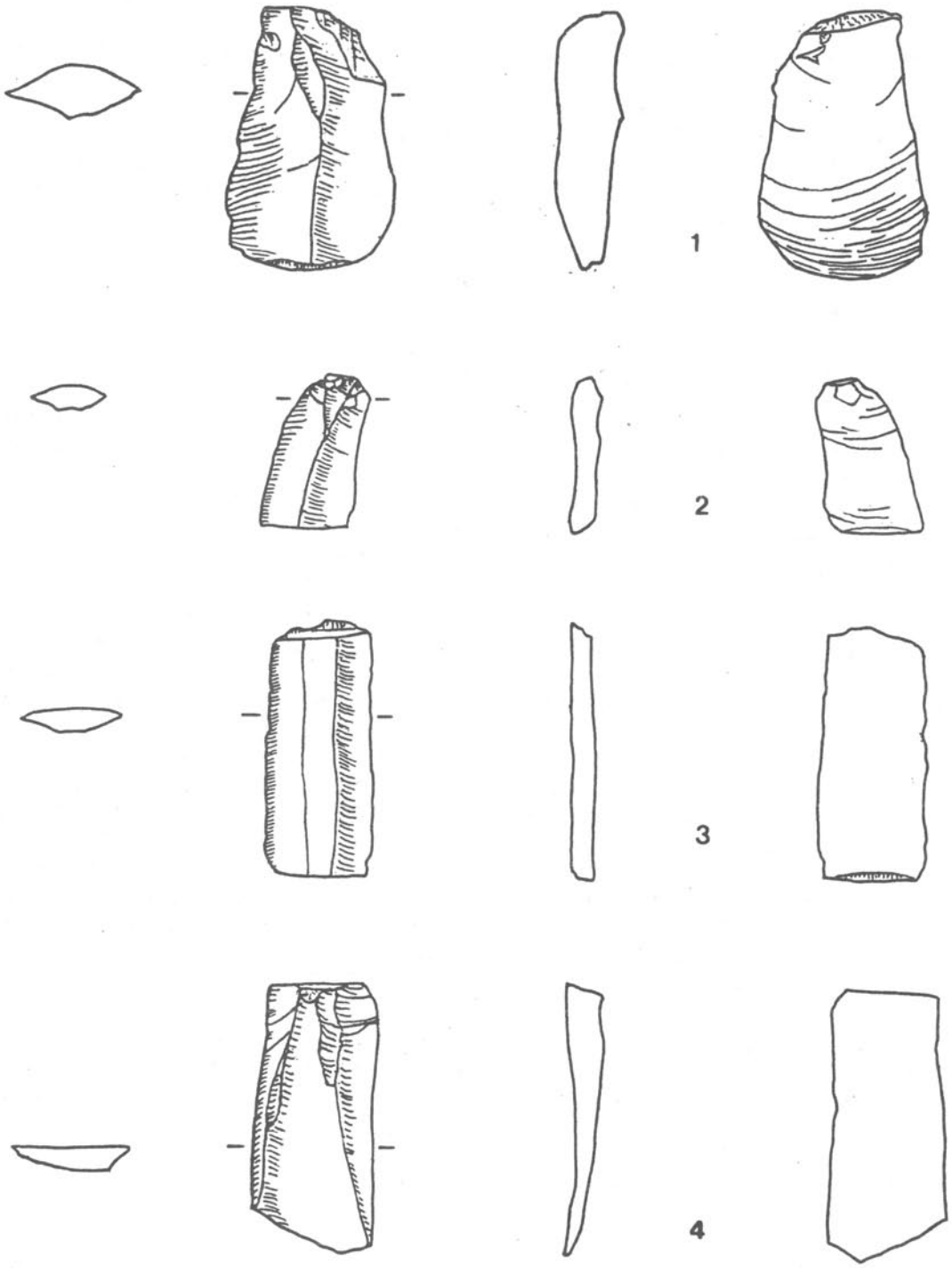
C. Blades

Total number of fine: 1021 obsidian, 0 basalt, 0 chert, 0 quartz. Dimensions: whole blades length range is 5 cm. to 7 cm., width range is 0.8 cm. to 2.0 cm., mean is 1.2 cm.; thickness range is 0.2 cm.to 0.5 cm., mean is 0.4. Total number of crude: 215 obsidian, 0 basalt, 0 chert, 0 quartz. Dimensions: whole blades length range is from 1.7 cm. to 6.0 cm., mean is 5.0 cm.; width range is 1.0 cm. to 3.0 cm., mean is 2.2 cm.; thickness range is 0.5 cm. to 1.4 cm., mean is 0.6 cm.

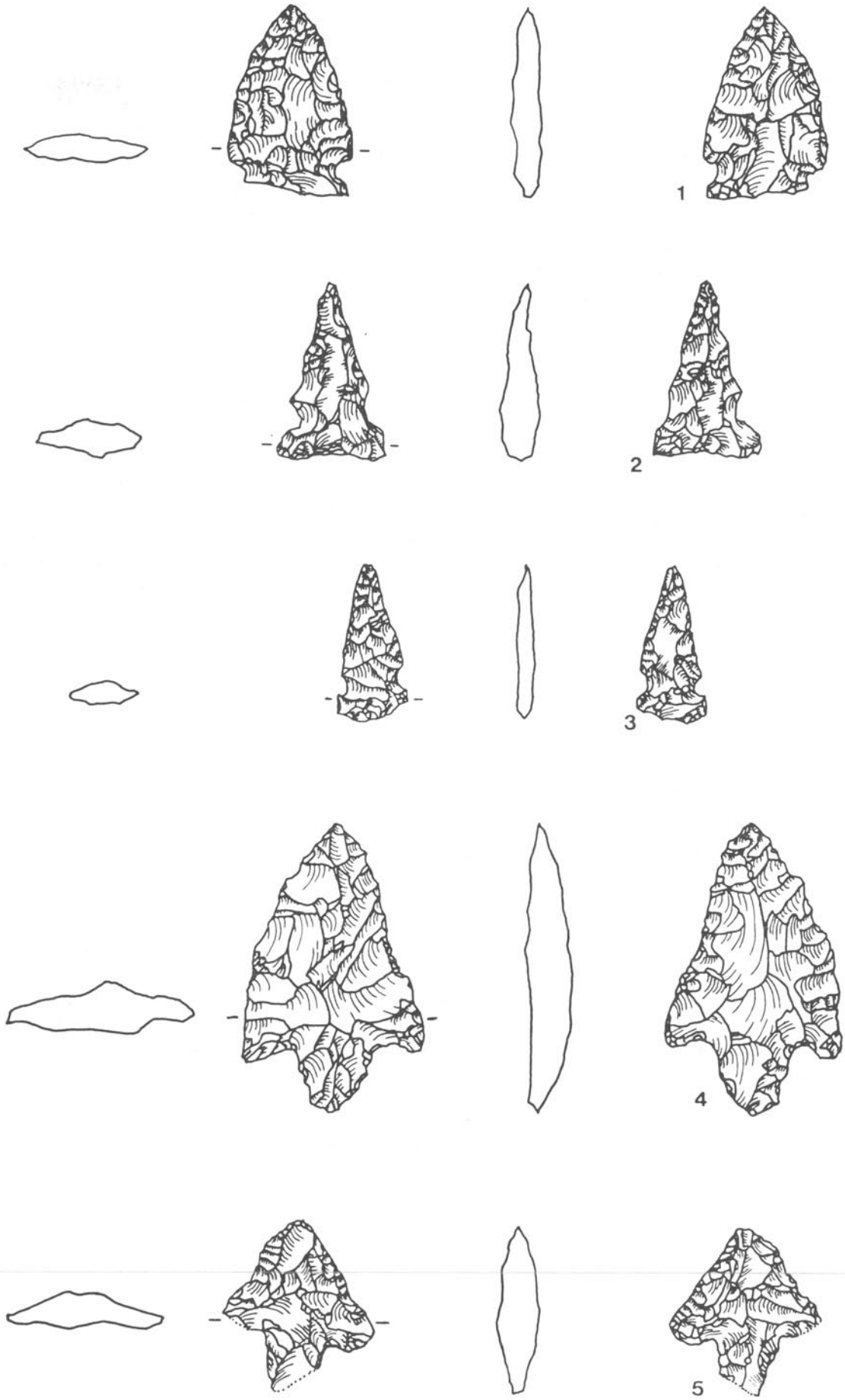
Fine blades are characterized by parallel sides, a single dorsal medial ridge or double parallel dorsal medial ridges, an almost straight ventral face, and are prismatic in cross-section. The blades at the Acambaro sites are characterized by small proximal-end platforms and low, flattened bulbs. They are different from the typical Aztec blade which are characterized by relatively large platforms and prominent bulbs (Tolstoy 1971:274). Of the 1021 fine blades recovered only 14 were whole, the remaining were fractured and exhibited either the bulbar end, the terminal end, or the medial section. Although there has been studies of fracturing, there has been no experimental work on the technology of obsidian blade fracturing comparable to what Purdy (1975) has done on chert fracturing, and so fracture scars cannot be compared to those produced experimentally.

Crude blades are larger than fine blades, although the ranges overlap. The sides of a crude blade are generally not parallel and the medial ridge undulates (Figure 13.1). The ventral face is commonly concave, and the bulb of percussion is prominent. Like the fine blades in this collection, there were few whole crude blades. Only 21 of the 215 crude blades were whole. The rest were fractured into bulbar end, terminal end, and medial section fragments.

Ethnohistoric data show that blades were hafted. At 40x magnification the blades show no consistent wear pattern which could be attributed to hafting, nor were there visible traces of glue or other residues. No chemical test were performed to determine the presence of residues. Haft wear appears to be more discernible on non-obsidian artifacts (Ahler 1979:320-321) than on obsidian artifacts. Those blades with the bulbar end remaining were able to be hafted because of the technique of manufacture which always produced a small proximal-end platform and a low, flattened bulb (Figures 13.2). Medial blades, with



Figures 13.1 - 13.4



Figures 14.1 - 14.5

both ends snapped off (Figure 13.3), were easily hafted. Terminal end fragments (13.4) and whole blades were not able to be hafted because of the curvature of the terminal ends. Such blades cannot be aligned in a wooden slotted shaft and therefore cannot be used to create a long straight cutting edge. Most blades in this collection are either the bulbar end or medial fragments and capable of being hafted.

The Tarascan government had blade knappers in its service. The *Relación de Michoacán* (1956:172 Lamina XXIX) shows them making blades by a pressure method in which the knapper is seated holding the core between his feet and exerting pressure with a long handled implement. The end-product depicted, however, is not a complete blade, but a medial blade. Since medial blades, although used unhafted, are the best form of blade for hafting, their manufacture suggests that many, if not most, of the Tarascan government-manufactured blades were destined for hafting. The collection of lithic artifacts from Tzintzuntzun shows a considerable predominance of medial blades over complete, terminal (distal), or bulbar (proximal) end blades (Pollard 1972 :338 and Pollard Tzintzuntzan collection at RPI archaeology laboratory). Although there are few whole or bulbar-end blades in this Tzintzuntzan collection, those blades have the same low, flattened bulbs found in the Acambaro collection.

One use of the hafted blade fragments is the macana, which was used at Acambaro (*Relación de Celaya* 1945:136). The macana is not a sword, as it has been called, because it has no point and cannot be used to thrust. Its shape is the same as one kind of club used by the Otomi (Carrasco 1950:122-138), and it may be that the macana is such a club modified to accommodate the blades. Its form suggests that it was used with a downward cutting blow and that it was entirely an offensive weapon. Unlike the sword, which can parry, the macana had little defensive capability. The macana is often associated with the Otomi (Carrasco 1950:122), and the Otomi at Acambaro may have specialized in this weapon just as the Chichimecs specialized in the bow and arrow.

The macana is not a Tarascan weapon. It is not shown in the *Relación de Michoacán* drawings depicting warfare. The Tarascans used the medial blade at the end of a short handle as a thrusting tool. It is shown in the *Relación de Michoacán* as an implement used to administer the final death stroke in battle and to thrust to the heart in sacrificial ceremonies. It is also shown at the end of long handles ("pikes") in scenes of war and sacrifice (*Relación de Michoacán* 1956:59 Lam.VII,179 Lam.XXX,190 Lam.XXXII,237 Lam.XLII). The thrusting weapon is generally considered to be a more effective shock weapon than those that slash only. The Tarascan thrusting weapons would have been more effective than the macana in shock action. (This general evaluation of thrusting vs. slashing/cutting weapons was expressed in its ultimate form by Sir Frederick Pollock in 1910 who wrote in the Encyclopedia Britannica "... we find that uncivilized people use only the edge and that the effective use of the point is a mark of advanced skill and superior civilization" [vol.26:270]).

The medial and haftable bulbar-end blades were very likely manufactured at Acambaro for macanas and for long and short handled thrusting tools of Tarascan design.

Blades, whether hafted or unhafted, were also used for other tasks. Use-wear examination of blades shows cutting and sawing and scraping. Retouch on blades produced bevelled edges on ends and sides effective for scraping. Some blades with side retouch are deeply notched.

Points

Total number: 43 obsidian, 0 basalt, 0 chert, 0 quartz. Dimensions: blade length range is 1.9 cm. to 5.0 cm., blade width range is 1.0 cm. to 3.7 cm., blade thickness range is 0.4 cm. to 0.9 cm.; stem length range is 0.0 to 1.3 cm., stem width range is 0.9 cm. to 1.9 cm., stem thickness range is 0.4 cm. to 0.9 cm.; base (stemless) width range is 0.9 cm. to 2.8 cm.; weight range is 15 grams to 25 grams.

Points are defined by shape not function. They have been deliberately shaped into a triangular form and worked bifacially. Those called unifaces have some bifacial flaking but are notable for the lack of completely flaked ventral face.

Figures 14.1 through 14.23 illustrate all the different types of points in this collection. There are several examples of the different types. The groups used in this discussion of types are based on Tolstoy's 1971 description of Central Mexican points. The first three points illustrated in Figures 14.1, 14.2, and 14.3 are of the expanding-stem group. This group is described as consistently distributed in the middle phases of the First Intermediate. The points from Acambaro were found in a stratigraphically disturbed excavation unit. However, they were in association with sherds of the Chupicuaro Ceramic Complex. Figures 14.4 through 14.6 illustrate points of the contracting-stem group. The first (Figure 14.4) is like Gary Large which Tolstoy (1971:278) considers rare. He attributes one example to the Aztec period. The second (Figure 14.5) is not like any other type in the group. The third, shown in Figure 14.6, falls within the range of the Gary Typical type which Tolstoy (1971: 278-279) finds important in the Classic period in the Valley of Mexico and also abundant at Tlatilco. These three contracting-stem group points were found at the AC/E site. These points were not found in a chronological context. The point illustrated in Figure 14.7 was also found at AC/E and is put in the broad-stem group. It is like the Shumla types in its barbs, but is not classified with them because the Shumla types are characterized by tapering or parallel vertical stem edges. The point in Figure 14.9 is also of the broad-stem group and is like the Short Uniface type dated as Teotihuacan III (Tolstoy 1971:280 3,n). Figures 14.8 and 14.10 illustrate two points of the contracting-stem group that were found in Layers D and C respectively in association with sherds of the Lerma Ceramic Complex. The examples in Figures 14.11 through 14.15 are classified as broad-stem. The stem edges are parallel. Three have been

made on blades and are like those called Uniface Stemmed which have a chronological range from Late Preclassic to Aztec times (Tolstoy 1971:Table 2). These five points were found at Cerro el Chivo and at the hillslope site of AC/CA. The last eight points (Figures 14.16 through 14.23) are classified in the stemless group. Several of them are ovate like the Chiconautla point of the Aztec period (Tolstoy 1971:278 and Figure 2,j). At Acambaro these stemless points were found at Cerro el Chivo and at AC/E. At Chivo they were found stratigraphically in the earliest through the latest layers. The example in Figure 14.21 was found in Layer A in association with the Chupicuaro Ceramic Complex. The point illustrated in Figure 14.6 was found in Layer E in association with sherds of the Lerma Ceramic Complex, and the points in Figures 14.22 and 14.23 were found in Layer F in association with Acambaro Ceramic Complex sherds.

The points from Acambaro fall into four groups, expanding-stem, contracting-stem, broad-stem, and stemless. The expanding-stem group points are associated with the Chupicuaro Ceramic Complex. The contracting-stem group points are in association with the Lerma Ceramic Complex. Different types of stemless group points were found in association with the Chupicuaro Ceramic Complex, the Lerma Ceramic Complex, and the Acambaro Ceramic Complex. There is no chronological information for broad-stem group points.

Points from Tzintzuntzan that are like those found at Acambaro are of the contracting-stem group, particularly the Gary Typical, Figure 14.11 (Pollard 1972:330,a), the broad-stem group (ibid.:330 b,f,g), and the stemless group (ibid.:330,d). There were no basal-notched or side-notched points recovered at Acambaro. They were found at Tzintzuntzan (ibid.:330,g,j and k). Side-notched points are considered typically Aztec (Tolstoy:277).

These points are presumed to have functioned as arrowheads. Projectile points can be interpreted as arrowheads on the basis of their size, weight, and thickness. The Acambaro points are all under 6 cm.long, under 30 grams in weight and under .9 cm. thick, and fall within the criteria for arrowheads compatible with ethnohistorically known bows. Arrowheads as projectile points cannot be fully evaluated without information on the bow, the wood from which it was made, and its dimensions; on the bowstrings, the material from which they were made, and the techniques used to increase their tensile strength, such as waxing; and on the arrow, the wood from which it was made, its dimensions, its feathers and techniques used for feathering. Also, the arm's length and strength of the archer must be considered (Pope 1962).

Archery was a strong tradition among the Tarascans whose government oversaw the manufacture and storing of bows and arrows (*Relación de Michoacán* 1956:171,Lam. XXIX,177). It was also important among the Otomi (Carrasco 1950:121). But it was the Chichimecs who were the most famous archers. Sixteenth century Spanish witnesses to Chichimec archery said that the Chichimecs were faster, more accurate, and better trained than the Spaniards. Chichimec arrows were reported to have penetrated buckskin armor and coats of mail, and passed clean

through horses' heads that had been sheathed in crownpieces of leather and metal (Ponce 1968:137-138 and Powell 1952:47-49). Since the arrowheads recovered at Acambaro are not extraordinary in Mesoamerican arrowhead technology, it may be that the effectiveness of Chichimec archery lay in the construction of the bow and arrow shaft and in the training and development of the body of the Chichimec archer.

Two artifacts of vesicular lava are illustrated in Figures 14.24 and 14.25. The were not found in a context that yielded chronological information. Both objects could function as stamps and they share a triangular geometric motif. The cruciform motif in the second artifact is like the cruciform motifs on stamps illustrated by Enciso (1953, p.33) and noted only as Prehispanic and "from Mexico City." A cruciform motif, but one stylistically different, was used on clay stamps as well as on ear plugs in Chupicuaro times (Frierman 1969:77, no. 519 and Porter 1956: 625 m and n).

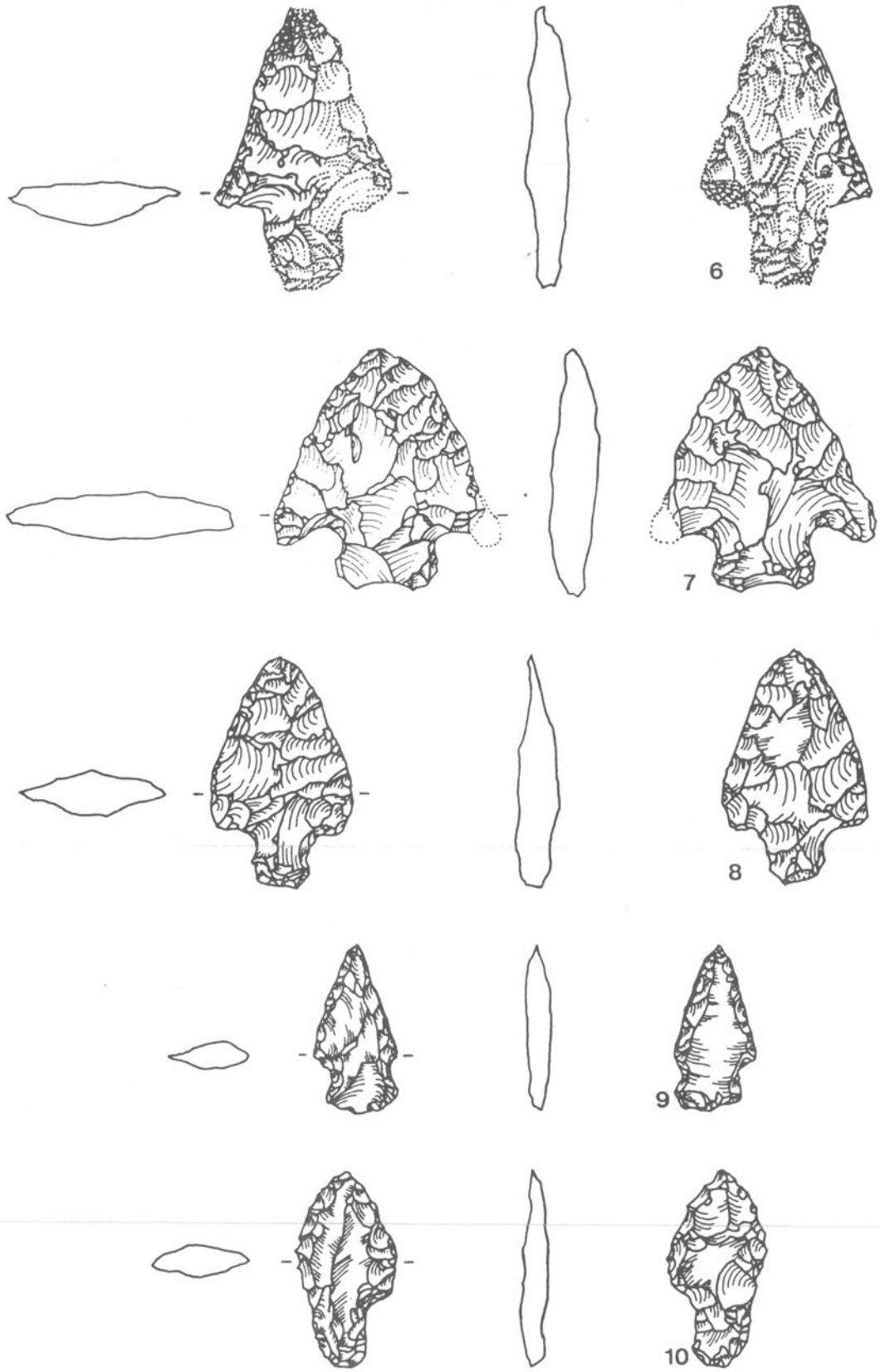
The lithic artifacts from Acambaro appear to be the products of techniques of manufacture which come from a general Mesoamerican tradition. However, there are some indications of a local lithic technology. Certainly there is a great reliance on obsidian which was available from two major sources, Zinapecuaro and Ucareo which were both within 25 km. of Acambaro. Compared to the Aztec area and even the Tarascan heartland, there is a large number of crude cores of obsidian. This suggests that since obsidian was easily obtainable, it was used in the production of tools that elsewhere were made of chert and other materials. Otomi and Chichimecs, instead of adopting fluted core technology completely maintained the crude core technology in the lithic medium of obsidian. In addition, blades were produced from fluted cores with dulled, finely-granular platforms, probably ground. Although such platforms are found in Aztec and Tzintzuntzan-Tarascans blade cores, the Aztecs also prepared fluted cores with flat mirror-like platforms, and the Tarascans struck blades from cores with unprepared platforms. The use of prepared granular platforms *exclusively* differentiates Acambaro blade technology both from Aztec and Tarascan. Points reflect the same differentiation. At Acambaro there are no points with basal-notching as there are in the Tzintzuntzan-Tarascan collection or with side-notching as there are in both Tarascan and Aztec points.

Since style, unlike function, carries information about the social system, lithic artifacts, like the ceramic artifacts at Acambaro, can be said to be the product of local traditions, namely, an Otomi and/or Chichimec or a Tarascan/Otomi/Chichimec amalgam that is particular to Acambaro or to the eastern frontier.

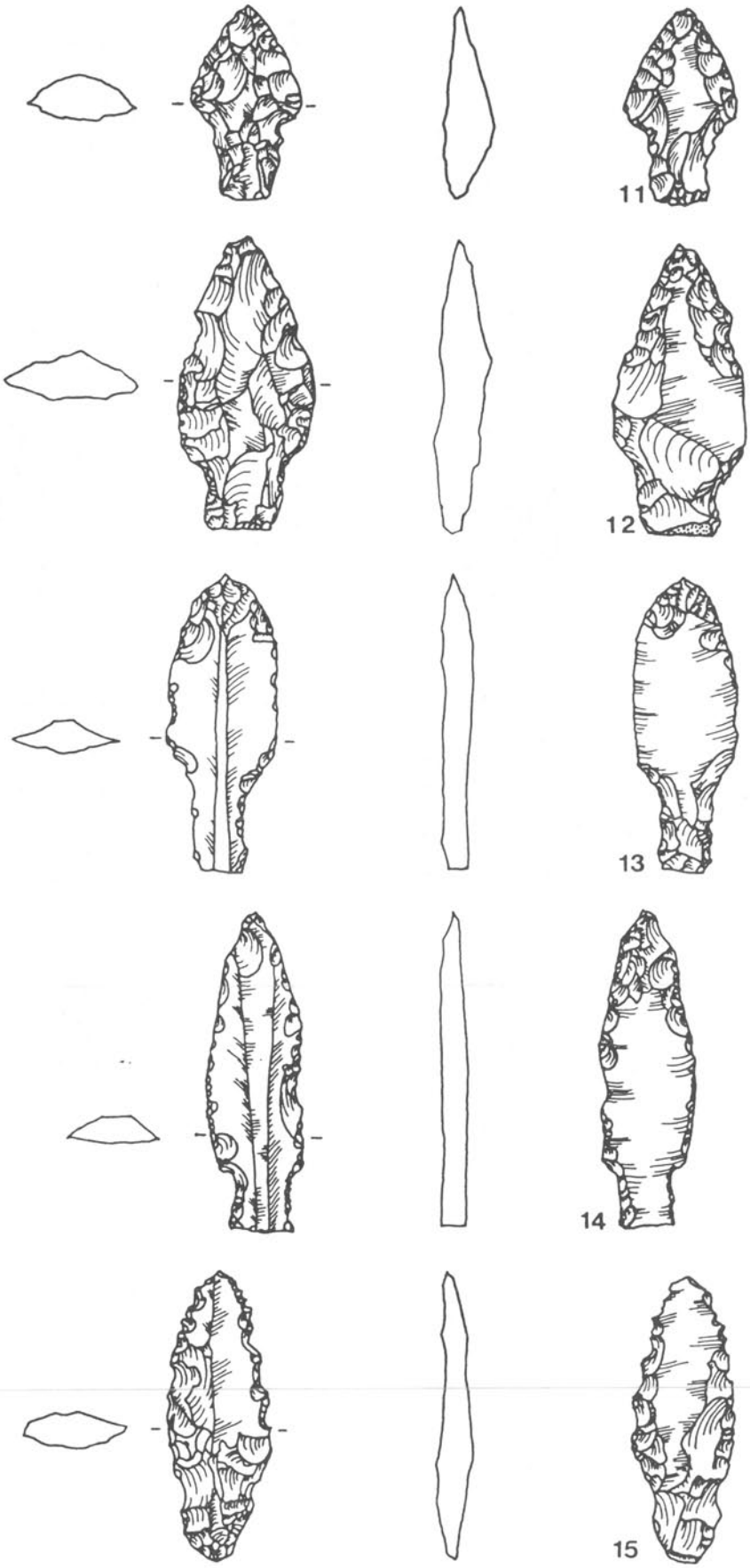
Structural Remains

The remains of eight structures were found on the summit of Cerro el Chivo (Figure 15). They were cleared but not excavated.

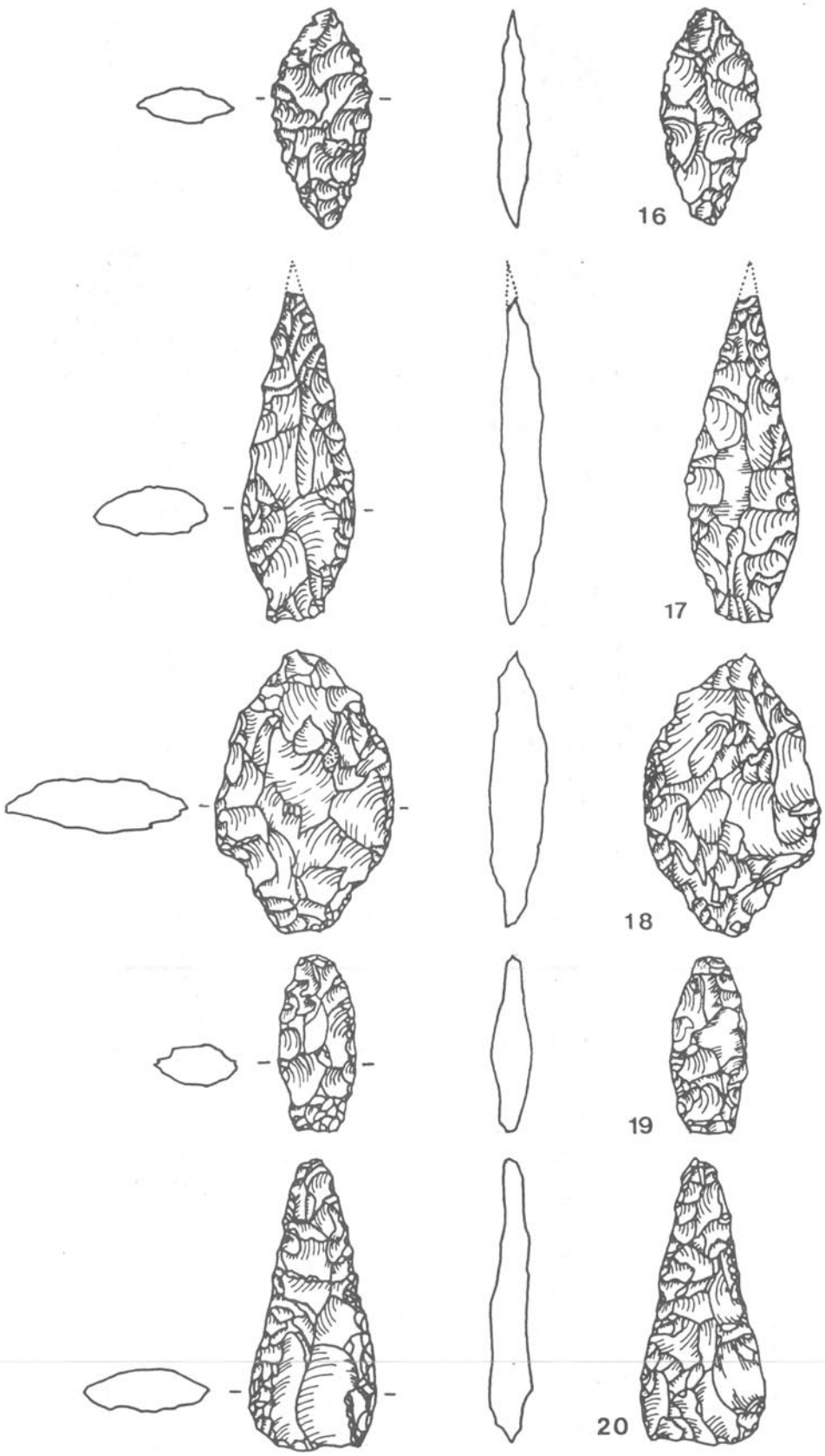
A. AC/C/NE/S1 (Figure 16 and 17)



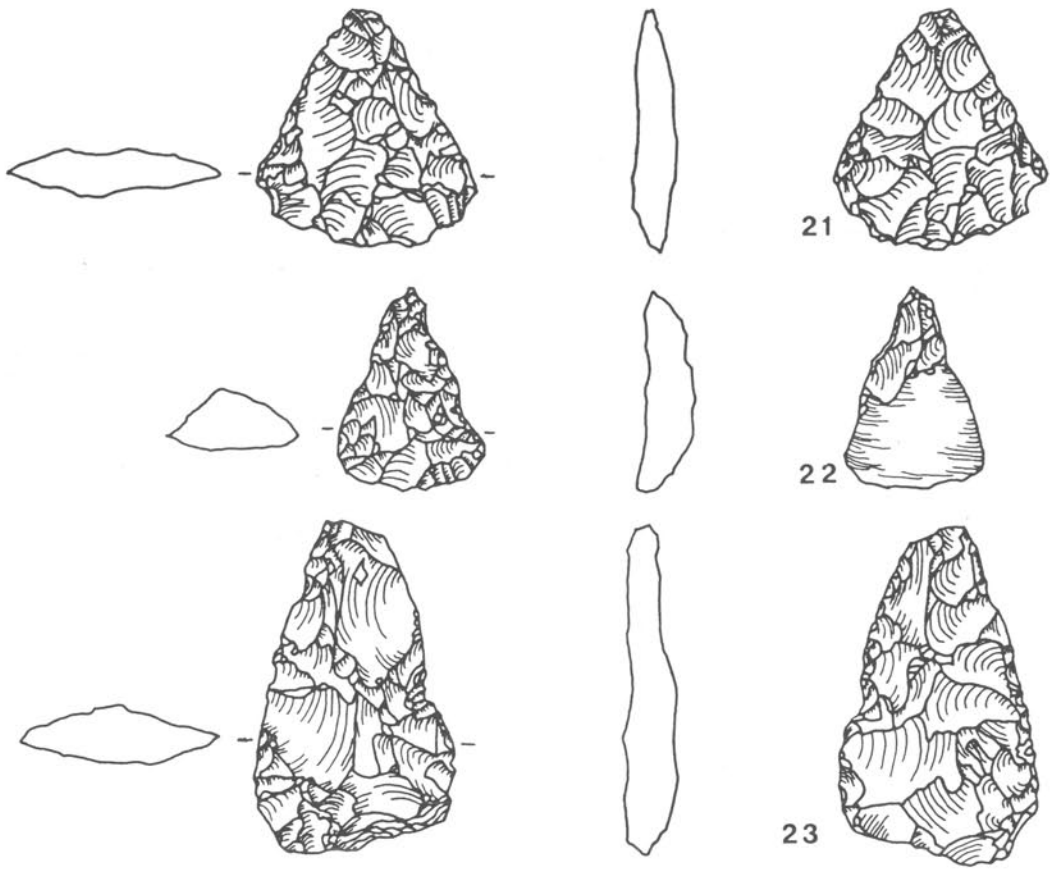
Figures 14.6 - 14.10

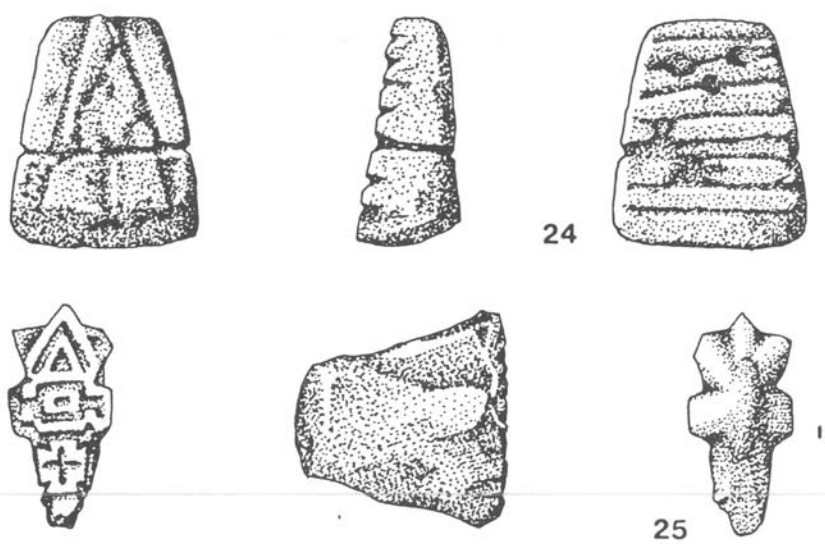


Figures 14.11 - 14.15



Figures 14.16 - 14.20





Figures 14.21 - 14.25

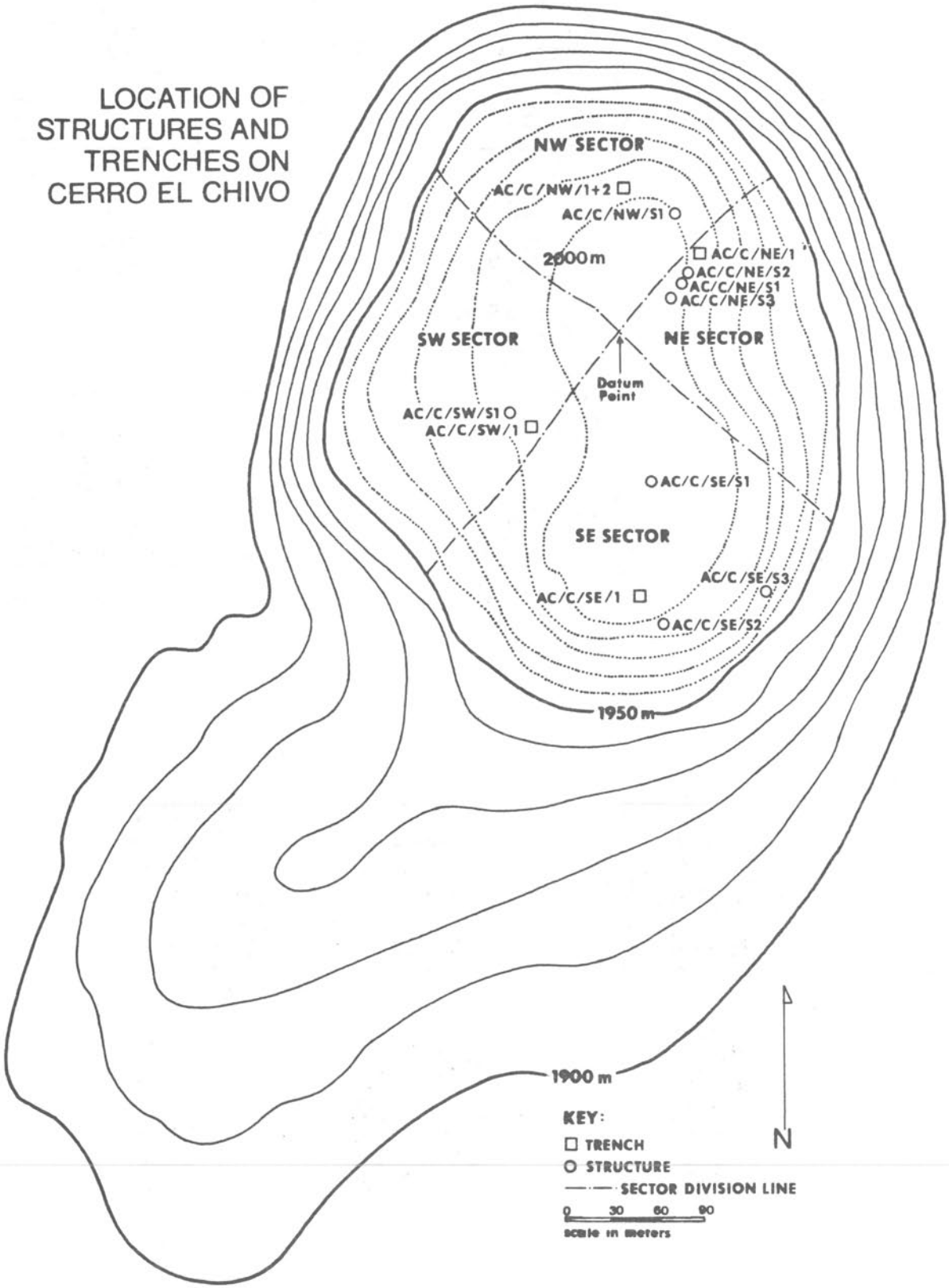
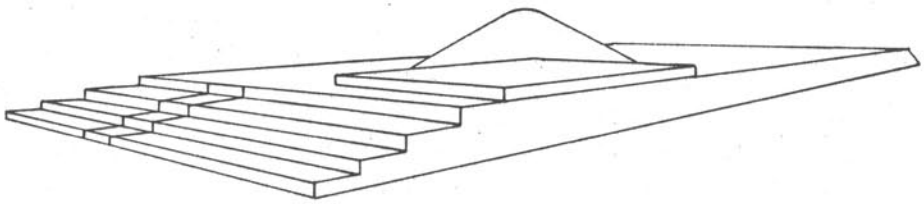
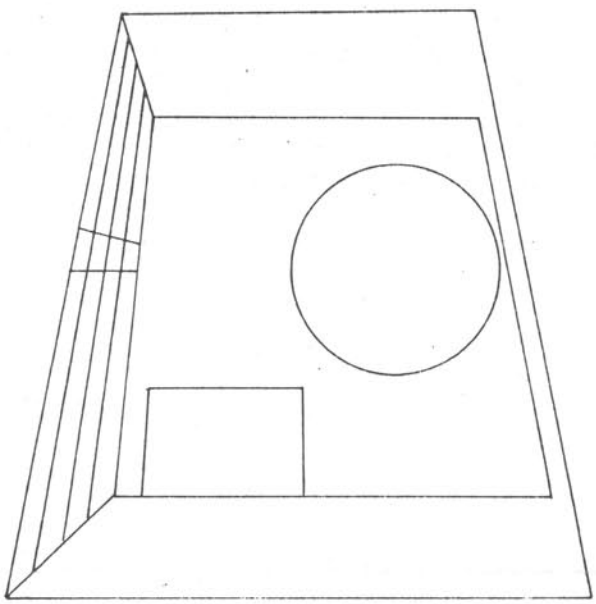

LOCATION OF STRUCTURES AND TRENCHES ON CERRO EL CHIVO
NW SECTOR
AC/C/NW/1+2
AC/C/NW/S1
2000m
AC/C/NE/1
AC/C/NE/S2
AC/C/NE/S1
AC/C/NE/S3
SW SECTOR
NE SECTOR
Datum Point
AC/C/SW/S1
AC/C/SW/1
AC/C/SE/S1
SE SECTOR
AC/C/SE/S3
AC/C/SE/1
AC/C/SE/S2
1950 m
1900 m
KEY:
TRENCH
STRUCTURE
SECTOR DIVISION LINE
0 30 60 90
scale in meters
N

Figure 15

ACICINE STRUCTURE 1

(ACICINE/S1)





PLAN

This structure along with AC/C/NE/S2 and S3 form a group which constitutes the architectural focal center of the Cerro el Chivo site and very likely of the Acambaro vicinity sites. Its outer dimensions are approximately 40 m. E-W by 25 m. N-S and remnants of the structure indicate that its height may have been 8 m. It appears to be four stepped platforms. On the summit of the fourth platform is a small rectangular superstructure, and a small round superstructure. A stairway, consisting of a series of single dressed blocks is immediately to the west of the center of the south face, transversing the length of the four levels and the platform on which the rectangular and round superstructures stand. The width of the stairway is the width of the single blocks, in no case above 40 cm.

B. AC/C/NE/S2 (Figure 18)

This structure stands a few meters to the northeast of AC/C/NE/1. It consists of a low platform 50 m.E-W and 20 m. N-S. It is 1 m. high. Centered on this low platform base is another rectangular platform also almost 20 m. N-S, but 34 m. E-W. This structure is badly potted and so it is not possible to determine if AC/C/NE/S2 like AC/C/NE/S/1 had additional platforms, whether there was a stairway, or whether there were superstructures.

C. AC/C/NE/S3 (Figure 19)

This construction appears to be a large plaza area approximately 65 m. by 50 m. Within this plaza stands a low platform approximately 50 m. by 35 m. and now less than 1 m. in height. On the south end of this low platform is the fragment of what appears to have been a circular construction.

D. AC/C/SW/S1 (Figures 20 and 21)

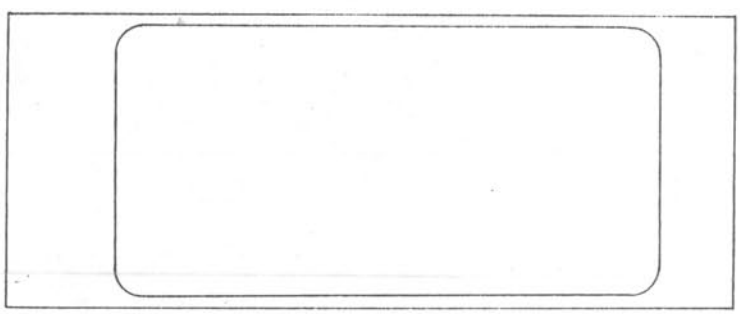
This structure is probably the most distinctive at the site. Its dimensions are less monumental than those structures in NE sector, but this is not apparent since it takes advantage of the hillslope to the southeast. Three broad terraces have been set into the hillslope. The structure itself consists of only one level, a rectangular platform and a round superstructure. The length and width dimensions of the platform are 40 m. by 40 m. The illusion of monumentality is transmitted not simply by the cumulative heights of the the platform and superstructure, but by the natural terraces of the hillslope as well. The eye calculates the height of the edifice from the base of the lowest terrace to the summit of the superstructure, a vertical distance of about 50 m. The trompe l'oeil character of this structure is revealed by the height of the constructed platform and superstructure. That dimension is only 3 m.

E. AC/C/SE/S1, AC/C/SE/S2, AC/C/SE/S3 (Figure 22)

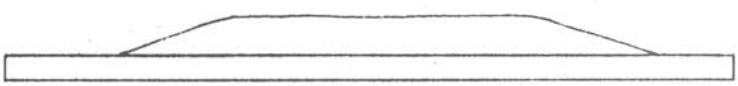
The three structures in the SE sector are simple platforms. AC/C/SE/S1 is 20 m. by 10 m. and has a maximum height of 2 m. It has an oval ground plan with a flat top whose dimensions are the same as the base. AC/C/SE/S2 is also a platform. It is square in ground

Figure 17

AC/C/NE STRUCTURE 2
[AC/C/NE/S2]



PLAN



PROFILE

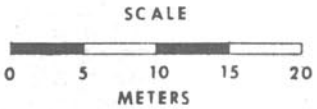
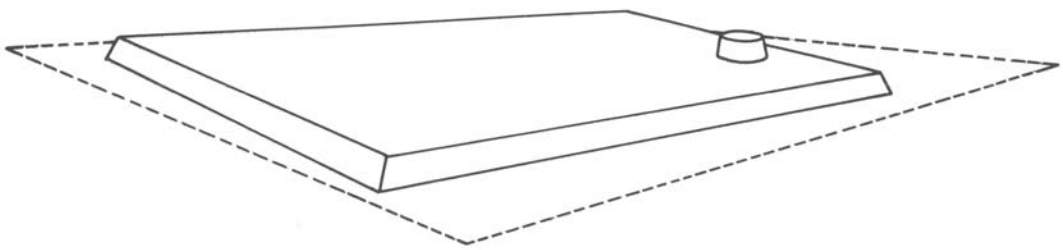
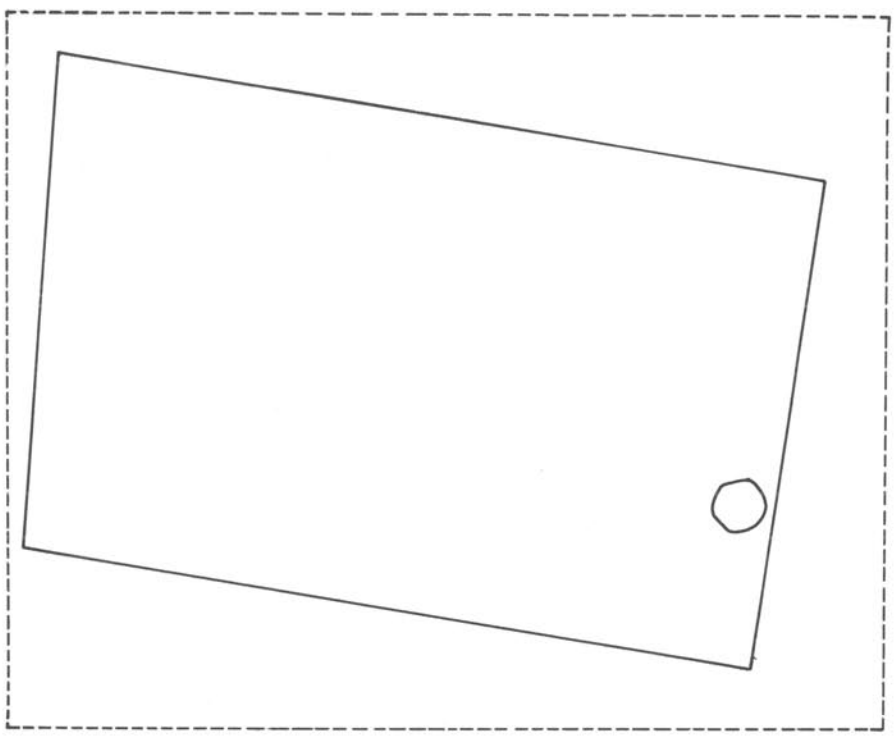


Figure 18

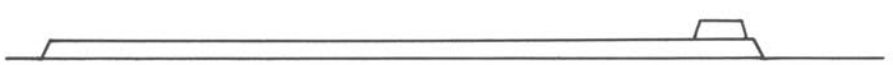
AC/C/NE STRUCTURE 3
(AC/C/NE/S3)



OBLIQUE



PLAN



PROFILE

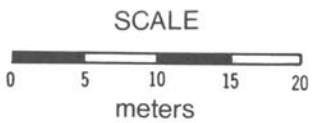
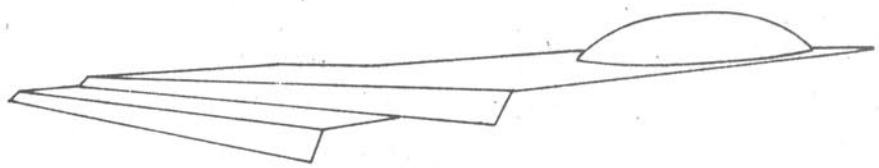
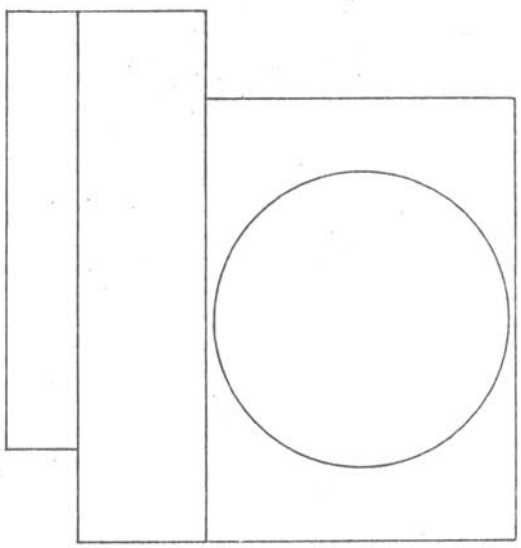


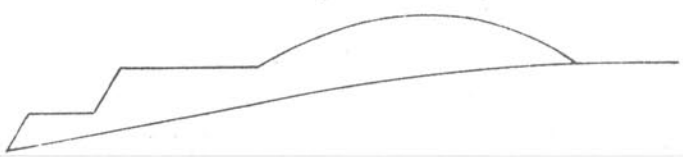
Figure 19

AC/C/SW STRUCTURE 1
[AC/C/SW/S1]





PLAN



PROFILE

SCALE

0 5 10 15 20
METERS

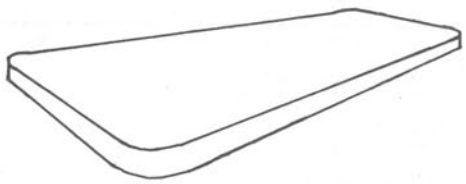
N

Figure 20

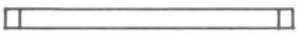
Figure 21

AC/C/SE STRUCTURE 1-3
CERRO EL CHIVO

AC/C/SE/S1

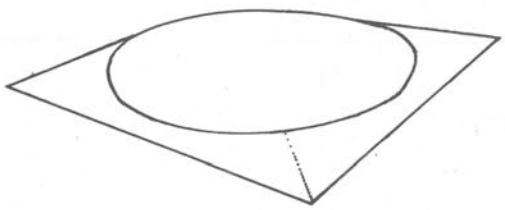


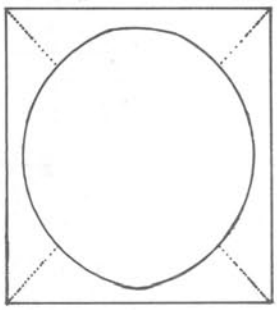
PLAN



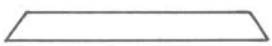
PROFILE

AC/C/SE/S2



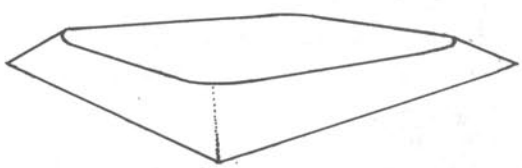


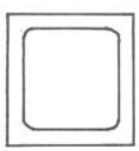
PLAN



PROFILE

AC/C/SE/S3





PLAN

PROFILE

N

scale

0 5 10 15 20

meters

Figure 22

plan; its top is round and is proportionately smaller than the base. The base of the structure measures 20 m. by 20 m., and the diameter of the top measures 15 m. The height of the platform is 2 m. AC/C/SE/S3 has a truncated pyramid shape with the top surface rounded. Its base dimensions are 8 m. by 8 m., the surface is 7 m. in diameter, and its maximum height is 3 m., one meter higher than the other structures in this sector.

F. AC/C/NW/S1 (Figure 23.1)

This structure is badly potted. It has a basal platform and a superstructure. The platform has an approximately square ground plan which measures 15 m. by 15 m. The superstructure was probably also square and may have been about 10 m. by 10 m. the height of the entire structure is about 2 m.

G. Structural Remains at Acambaro Vicinity Sites

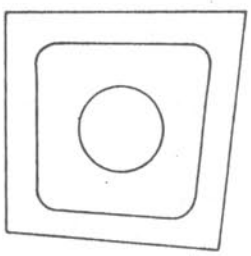
In the center of AC/F, a site measuring approximately 190 m. N-S by 220 m. E-W, is a rectangular platform approximately 8 m. N-S by 4 m. E-W and 1 m. in height. This is the only structure in the foothills of Cerro el Chivo. A test excavation unit yielded at 25 cm. depth, a carved block (Figure 23.2) It measures 66 cm. long and tapers from 31 cm. wide to 10 cm. wide. It is 7 cm. deep at the wide end and 6.5 cm. deep at the tapered end. The motif has a year sign and the signs for fire and smoke, Cf. Xochicalco (P. Garge: pers. comm.). There is no carving on the reverse.

In the Lerma River Valley one artificial mound, about 6 m. or 7 m. in height was located at AC/4, and two artificial mounds, about 5 m. high were located at AC/5. All three had been potted extensively and only remnants of their rubble cores were readily visible.

H. Discussion of Structural Remains

In general the style of construction of all these structures is the same. The inner core is of rubble, and there is a block facing. The structures on Cerro el Chivo, however, constitute the major architectural effort. Four of the Chivo structures are monumental and are skillfully and finely constructed. The bases of these structures range from 1000 m^2. to 1600 m^2. making them comparable in size to the pyramdial platform structures at Ihuatzio in the Lake Patzcuaro Basin. They are stylistically compatible with structures in the Lake Patzcuaro Basin, particularly in the use of round superstructural elements. They are also very like the Zitacuaro structure that Gendorp (1972) recorded. The Acambaro and Zitacuaro structures share the pyramdal platform, the several levels, the central stairway and have circular elements. Also common is the treatment of the façade. The façade blocks are smoothly finished on at least one face, sometimes on all four faces. Incised blocks were found, although not *in situ*, and they are reported to have been common at the site. Most have simple geometric motifs; one had a more complicated symbolic design which is discussed above. Since none of the decorated blocks have been found *in situ*, their effect on the façade cannot be assessed fully, but the number of

AC/C/NW STRUCTURE 1
(AC/C/NW/S1)



PLAN

PROFILE

Figure 23.1

Figure 23.2

undecorated *in situ* and the simplicity of the decorated façade blocks suggest that the architectural emphasis was on form, not decorative elements.

The stratigraphy in AC/C/NE/1 revealed that immediately below Layer F were fragments resulting from the manufacture of large caliche blocks (the fragments constituting caliche brickbats, as it were) and a pit that appears to have held an implement which functioned as a hoist for large blocks. If these features are a result of the construction of the structures in the NE sector, then the date for their construction would be coeval with the Acambaro Ceramic Complex and the Acambaro Phase.

Functionally, the four monumental structures, at least, were public buildings; they served community purposes. They are situated in two focal places in the settlement. AC/C/SW/1 is on the easiest (and present-day) approach to the summit. The slope of the hill is gentlest below it. If this approach were used in Prehispanic times, then this structure would constitute the entry-way to the summit. It faces outward toward the hillslope, and its superstructure is visible about 150 meters downslope where the elevation of the hill appears to add 40 meters to its height. It has an insignificant appearance from the summit where its superstructure measures 3 m.

The three AC/C/NE structures were built not only at the highest elevation of the hill but also in a place where the vista is not obstructed by the gradual slope of the hill. In this sector the hill rises sharply from the valley floor, and the line of sight from the AC/C/NE complex of structures is an unobstructed 360° view of the surrounding area. From the summit of this building complex the Lerma River can be seen from the Solis Dam about five kilometers to the east, and its course can be followed through the flood plain constricted between Cerro el Chivo and Cerro el Toro in the south, to Chamacuaro ten kilometers to the northwest. In turn, the summit of Chivo is highly visible from Chamacuaro in the northwest, from past Paracuaro in the north, and from the stretch up to the Solis Dam in the east. It is not, however, visible to the south, a disadvantage to the population living to the south, but an advantage to Acambaro's military function of overseeing the river passage.

Acambaro is distinguished by these structures and their setting. Their monumentality suggests that they were built by plan and direction and their location and design that they served public functions. They make Acambaro a settlement qualitatively different from the other settlements in the Lerma River Valley and from the Acambaro *sujetas* beyond the Valley (the settlements identified in the ethnohistoric sources as abutting on those of Cuiseo, Yuriria, Maravatio/Zirizicuaro, and Zinapecuaro.) Since it is administrative centers that have functions not duplicated in other settlements within its network, the exclusivity, among regional settlements, of monumental structures of this design at Acambaro points to Acambaro as a central place with administrative functions.

Petroglyphs (with John Hyslop)

About seventy petroglyphs were located on Cerro el Chivo (Figure 24). The survey is complete for the summit of the hill, i.e. above 1975 m. but not for the slopes, which were only partly investigated). Techniques of carving and pecking/abrading were used in their production. Carving is commonly in low relief. The petroglyphs range in size from 3 cm. to 100 cm. in one dimension. They are not facing cardinal directions in any pattern. They are placed on surfaces that were sometimes prepared by pecking and abrading to make them flat. In other cases the irregularities of the rock were left and incorporated into the design. An analysis of these seventy petroglyphs classified them on the basis of design motif (Chart 9).

A. Spiral (Figure 25)

Approximately 25 of the petroglyphed rocks have flat surfaces on which there are spirals. Many of the spirals lead into one another forming a mass of interrelated curved lines. The spirals are usually not found associated with other designs, although there are some exceptions and these are noted in the description of other types. The sets of spirals range in size from 15 cm. to 100 cm.

B. Bar/crosspiece or Stairway (Figure 27)

About 20 rock outcrops have long carved vertical bars with short carved horizontal crosspieces between them (Figure 26). At first this motif was not recognized as a stairway. However, when the bar/crosspiece motif was discovered in three dimensional pyramidal platforms carved into the rock outcrops, it was clear that it represented the stairways of those miniature pyramidal platforms. The stairways lead to the top of the rock outcrop on which they are inscribed. In some examples they terminate in a niche or a small hole. Some stairways are interrupted by a landing before they reach the top of the rock outcrop. The bar/crosspiece motifs or stairways appear in a number of forms. In one form they are bracketed between two vertical lines. In another form they are incorporated into the carved pyramidal platform. There are two examples of carved pyramidal platforms. In a third form they represent the profile of the pyramidal platform. (The whole pyramidal platform is not represented.) This motif ranges in size from 3 cm. to 7 cm. wide and 8 cm. to 90 cm. long (high).

C. Droodle or amoeboid (Figure 28)

At least 11 of the petroglyphs have motifs consisting of wandering lines that form geometric or free-form patterns. Some are associated with highly irregular surfaces of rock outcrops. They usually occur alone but occasionally with other types. The area of design ranges from 25 $cm.^2$ to 100 $cm.^2$.

D. Faces (Figure 29)

Two petroglyphs represent a face with one open and one closed eye. The faces are composed of scrolls outlined on the inner contour. One of the faces is more curvilinear than the other and has ear-spools. The forehead appears cleft. The other is more rectilinear, and is

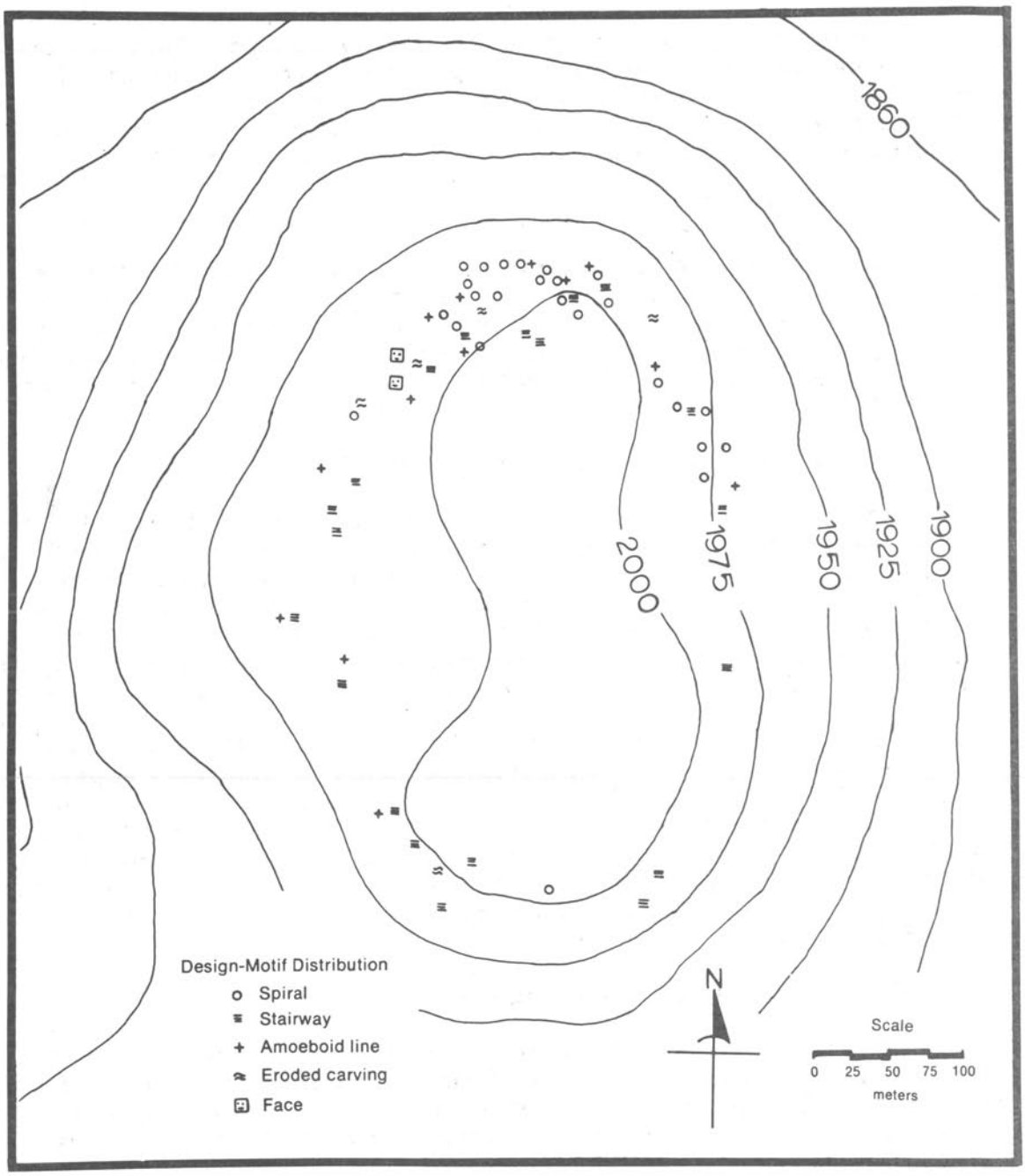

1860
1900
1925
1950
1975
2000
Design-Motif Distribution
Spiral
Stairway
Amoeboid line
Eroded carving
Face
N
Scale
0 25 50 75 100
meters

Figure 24

Figure 25

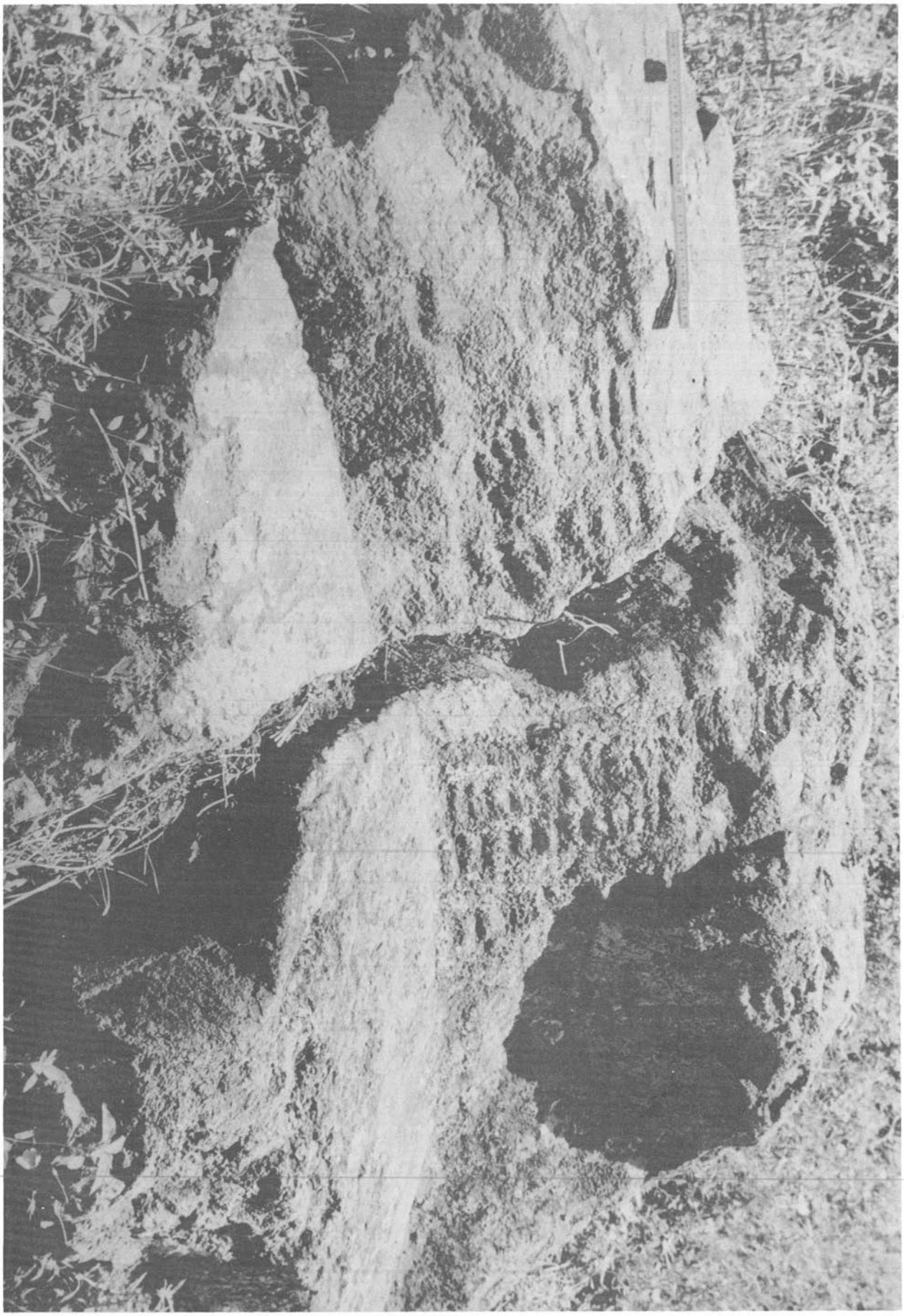


Figure 26

Figure 27

Figure 28

Figure 29

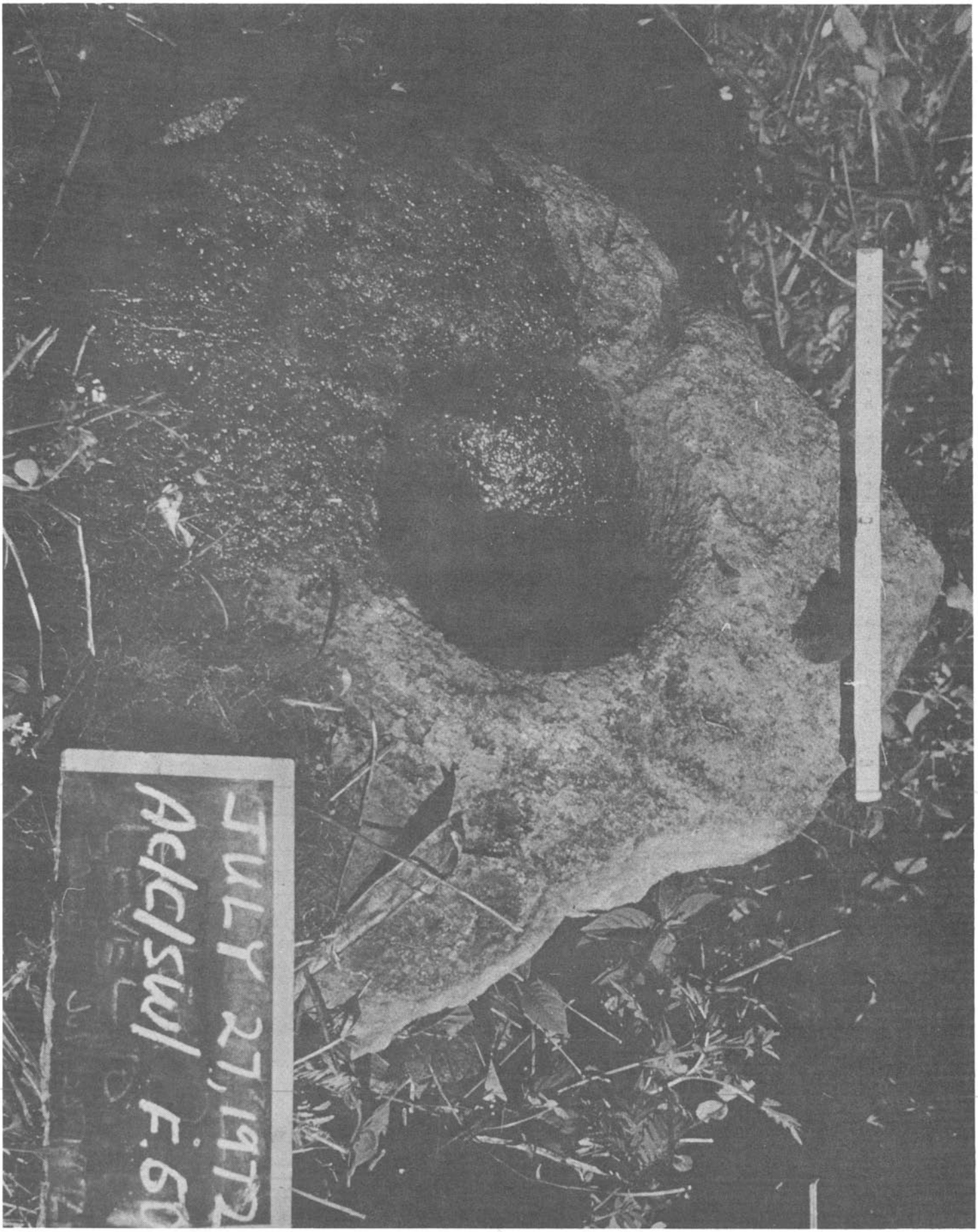


Figure 30

spalled badly on the lower left side.

E. Hole (Figure 30)

Six rock outcrops have holes like the holes associated with the stairway and the pyramidal platform. They are about 20 cm. wide and 6 cm. to 26 cm. deep and are shaped conically.

F. Geometric

Two rock outcrops have simple geometric designs enclosed in circles.

There are at least five rock outcrops that are badly eroded or broken, and the petroglyphs on them, although slightly visible, are not clear enough to be classified.

The spiral and stairway motifs are found at many Prehispanic Mesoamerican sites. They have been located in western Mexico from Sinaloa to Jalisco and in Michoacan, Guanajuato, San Luis Potosi, and the Basin of Mexico. But the spiral is a pan-cultural motif and has been reported in diverse places including the American Southwest, Colombia, and the Canary Islands. The stairway motif, on the other hand, has a limited distribution. There are stairway petroglyphs at Cerro del Cuailama (Acalpixcan), Texcoco and Chalcatzingo in Central Mexico (Noguera 1971, Cook de Leonard 1955, Gay 1971), in Michoacan (Gali 1946), and as far north as Xilitla in San Luis Potosi (Palacios 1945). The petroglyphs at Chalcatzingo, in Michoacan, and at Xilitla are in the two dimensional form of bar/crosspieces, and for this reason probably have not been identified as stairways.

The amoeboid motif, along with the spiral, has been found on a large petroglyph, 6 m^2., near Paracuaro about 15 km. north of Acambaro. Schondube B. (1965) dates the Paracuaro petroglyph as contemporary with Tarascan Tzintzuntzan because of its association with ceramics with negative decoration, a trait also found in ceramics at Tzintzuntzan. Petroglyphs with spiral, stairway, and amoeboid motifs have been found at Tzintzuntzan (Gali 1946, Acosta 1939, Mountjoy 1974). Some iconographic interpretations have been made of the spiral, holes, and stairway motifs. Mountjoy (1971) has noted that spirals are important in Huichol symbolism where they appear associated with many things such as, rain, corn and beans, serpents, and fire. Cook de Leonard (1955) notes that the seventeenth century chronicler Hernando Ruiz de Alarcon reported stone holes were used for blood sacrifice. She suggests that the niches on top of the stairways were used for the blood from self-inflicted wounds.

At Cerro el Chivo not all rock outcrops were used for petroglyphs. The petroglyphed outcrops are concentrated around the summit of the hill, with few on the summit itself or on the slopes. They are associated with the areas of structural remains and high density of artifacts. This distribution points to a their use in public functions. There is a pattern to the spatial distribution of the motifs. Spirals are concentrated in the north although there is one example in the south.

Chart 9

CHART OF ALL ROCK CARVINGS FOUND AT CERRO EL CHIVO

#	Motif Type	Orientation of Carved Rock Surface	Technique of Carving	Dimensions	Remarks - Descriptions
1	VI	nearly horizontal	-	20 cm. in diameter, 25 cm. deep	conical bottom; 9.5 m. from #2
2	VI	horizontal	-	20 cm. in diameter, 23 cm. deep	concial bottom; 9.5 m. from #1
3	I	nearly horizontal	low	11 cm. in diameter	single spiral
4	V	vertical	low	70 cm. by 63 cm.	eroded parallel and perpendicular lines; possible scroll outlined on inner countour
5	I, IV	30° off horizontal	deep, possible relief	100 cm. by 96 cm.	6 m. from #67 (IV)
6	II	nearly vertical	deep	210 cm. by 100 cm.	complex of carved step pyramids with stairways
7	-	-	-	-	same as #6 and #69
8	I	nearly horizontal	deep	17 cm. in diameter	single spiral
9	I,III	"	"	44 cm. by 25 cm.	single spiral and amoeboid line
10	II	nearly vertical	" "	35 cm. by 15 cm.	single stairway
11	I, II	30° off horizontal	"	100 cm. by 50 cm.	spirals and amoeboid lines
12	II	45° off vertical	"	57 cm. by 250 cm.	multiple stairways - spread out
13	II	vertical	"	190 cm. by 90 cm.	mulitple stairways
14	V	nearly vertical	low	30 cm. by 30 cm.	eroded geometric lines
15	I	horizontal	deep	35 cm. by 75 cm.	connected spirals
16	I, V	nearly horizontal	low	90 cm. by 80 cm.	spirals separated by line
17	I, III	horizontal	"	60 cm. by 50 cm.	spirals and amoeboid lines
18	I	"	deep	100 cm. by 80 cm.	connected spirals; associated with 19, 20, and 21
19	I	"	"	100 cm. by 70 cm.	connected spirals; associated with 18, 20, and 21
20	I, V	"	"	130 cm by 90 cm.	connected spirals; associated with 18, 20, and 21
21	I	"	"	120 cm. by 60 cm.	connected spirals; associated with 18, 19, and 20
22	V	"	low	90 cm. by 70 cm.	parallel and amoeboid lines
23	I	"	deep	51 cm. by 23 cm.	connected spirals
24	-	-	-	-	wall-like stone; not a petroglyph
25	I, V	horizontal	low	60 cm. by 30 cm.	square spiral and geometric lines
26	V	nearly horizontal	deep	40 cm. by 25 cm.	amoeboid lines
27	I, III V	30° off horizontal	low	90 cm. by 70 cm.	single stariway; spirals separated by straight line; possible square spiral
28	I	nearly horizontal	"	45 cm. by 30 cm.	single square spiral
29	I	"	"	75 cm. by 60 cm.	connected spirals
30	I	"	"	100 cm. by 50 cm.	connected spirals
31	I	_	deep	30 cm. by 25 cm.	nearly square spiral on portable block
32	I	nearly horizontal	"	90 cm. by 80 cm.	connected spirals
33	I, III V	30 off horizontal	low	175 cm. by 90 cm.	connected spirals, stairway, and a circle (?); associated with #34 one meter away
34	V	"	"	25 cm. in diameter	probably a circle with curved lines in the center: one meter from #33
35	III	vertical	deep	80 cm. by 60 cm.	amoeboid lines

36	V	nearly horizontal	low	50 cm. by 50 cm.	badly eroded
37	I	"	"	150 cm. by 75 cm.	connected spirals
38	II	nearly vertical	"	15 cm. by 17 cm.	squat stairway design
39	III	horizontal and vertical	deep	50 cm. by 50 cm.	amoeboid line
40	I	nearly horizontal	"	40 cm. by 30 cm.	connected spirals
41	I	nearly horizontal	"	30 cm. by 30 cm.	connected spirals
42	I	"	"	15 cm. by 20 cm.	connected spirals
43	V	"	"	40 cm. by 40 cm.	eroded amoeboid lines
44	II	nearly vertical	"	50 cm. by 35 cm.	multiple stairways
45	II	vertical	"	25 cm. by 30 cm.	multiple stairways
46	VI	nearly vertical	"	16 cm. in diameter, 18 cm. deep	hole with conical bottom
47	V, VI	hole: nearly horizontal; circles: vertical	"	hole: 18 cm. in diameter, 17 cm. deep; circles: 30 cm. by 18 cm.	hole with conical bottom; three circles in line on vertical rockface
48	II	nearly vertical	"	100 cm. by 60 cm.	boulders shaped to form pyramids with steps
49	II	"	"	45 cm. by 38 cm.	multiple stairways
50	II	-	"	40 cm. by 20 cm.	connected spirals on portable rock
51	VI	-	-	25 cm. in diameter, 23 cm. deep	hole carved in building block, conical bottom
52	-	-	-	-	rock with lines - not a petroglyph
53	II	vertical	low	12 cm. by 15 cm.	pecked profile of pyramid with steps
54	VI	horizontal	-	18 cm. in diameter, 16 cm. deep	hole with rounded bottom
55	II,III	vertical and horizontal	relief and deep incising	80 cm. and 60 cm.	stepped pyramid in relief; amoeboid incised line
56	II	horizontal	low	25 cm. by 8 cm.	single stairway
57	V	vertical	"	30 cm. by 30 cm.	badly eroded
58	II	nearly vertical	deep	25 cm. by 15 cm.	rock shaped to form single pyramid with steps
59	II,III	-	"	40 cm. by 30 cm.	stairway and amoeboid design on portable rock
60	VI	horizontal	"	20 cm. in diameter, 15 cm. deep	hole with rounded bottom
61	II	-	"	30 cm. by 10 cm.	stairway on building block
62	III	nearly horizontal	"	30 cm. by 30 cm.	amoeboid line
63	II	nearly vertical	"	90 cm. by 70 cm.	multiple stairways on shaped boulder
64	II	"	"	130 cm. by 70 cm.	multiple stairways; rockface possibly polished
65	II	"	"	130 cm. by 70 cm.	mulitple stairways
66	III	nearly horizontal	"	90 cm. by 70 cm.	amoeboid lines
67	IV	30° off horizontal	relief carving	65 cm. by 50 cm.	6 m. from #5 (face)
68	III	nearly horizontal	deep	50 cm. by 35 cm.	amoeboid line
69	II	-	-	-	same as #6 and #7
70	II	nearly vertical	deep	110 cm. by 25 cm.	two boulders shaped to form pyramids with steps
71	V	"	relief (?)	80 cm. by 80 cm.	badly eroded

The two carvings of faces are located together on the northwest slopes. Stairways and amoeboids, however, are found in all directions.

It is difficult to assign dates to the petroglyphs at Cerro el Chivo. There is, however, indication that they are dated to the Late Classic/Postclassic. A floral style of spiral motif on the rock outcrops duplicates spiral motifs found in Groups of the Lerma Ceramic Complex. A right-angle spiral motif on the outcrops is the same as that on dressed stones found near AC/C/NE/S1,2 and 3, an indication of an Acambaro Phase date. Cross-dating with similar petroglyphs reported at Tzintzuntzan places some Cerro el Chivo spirals, stairways, and amoeboids in the Acambaro phase as well.

Figurines (with Lee Anne Wilson)

The figurine analysis is based on ninety fragments of figurines found in excavation units and on the surface of sites in the Acambaro vicinity (Appendix IV). No complete figurines were located. Because only fragments of figurines were uncovered, attributes rather than types were used as the basis for interpretation. Because of the small number of fragments and because these fragments were found in diverse locations, reliable statistical interpretations cannot be made. Interpretations have been based on presence or absence of attributes. The results of this analysis have contributed to the chronology of the site and to cultural characterization of the locality. They were also used along with other data to determine aspects of the settlement pattern.

Twenty five figurine fragments came from excavation unit AC/C/NE/1 (Figure 8), and the figurine analysis is based on these fragments as well as the figurine fragments found at AC/E, AC/C/NW/1-2 and AC/C/SW/1. The figurine fragments from AC/C/SW/1 are different from those found elsewhere in the Acambaro vicinity. This difference may be a function of the small number of figurine fragments in the collection or a reflection of intra-site activity areas.

The analysis of the figurine fragments from AC/C/NE/1 is a result of two procedures: first, the attributes were determined (Chart 10). Second, each attribute was plotted against the levels in which the figurine fragments with those attributes were found in the excavations unit (Chart 11).

Figurine fragments in AC/C/NE/1 were found in all layers. Those in Layers A and B (levels 11 through 15) have attributes closely related to the attributes that define the Chupicuaro figurine tradition. These are undecorated earspool, pinched nose, mouth 4, eye 5, absence of genitals, eye 7, Chupicuaro nose, mouth 5, double belly, bead pendant, central-depression earspool, male genitals, choker and armlet. Those in Layers C and D (levels 8 through 11) show Chupicuaro attributes executed incompetently, producing figurines that look different from those of the established Chupicuaro tradition. Layer D (levels 6 through 8) contained two new types of figurines that are characterized by shared manufacturing attributes of roundness of

shape, smooth and lustrous surface, and high degree of hardness. Style attributes are slit genitals, eye 9, eye 11, and triangular nose. These new types accompany the Lerma Ceramic Complex and may indicate a new figurine tradition, called here the Lerma figurine tradition. Figurine fragments from Layer F (levels 1 through 4) were mold-made from the same paste used in the Purva Orange Ware of the Acambaro Ceramic Complex. A characteristic style attribute is eye 14. These fragments may constitute an Acambaro figurine tradition.

Thus, the figurine analysis from Cerro el Chivo affirms the chronology established through the ceramic analysis. It suggests three major figurine traditions: the Chupicuaro, the Lerma, and the Acambaro. Attributes of Acambaro figurines not found in figurines recovered elswhere are dash-decorated earspool, eye 1, mouth 1, bangs, long hair, female genitals with separated Pabia, collar, eye 2, mouth 2, E-2 nose, nostrils, eye 3, mouth 3, and eye 4.

Chupicuaro figurines from the type site of Chupicuaro, which was less than 10 kilometers from Acambaro, have been studied by Muriel Porter Weaver (1956 and 1969), Bennyhoff, (1966), and McBride (1969). The work at Acambaro has affirmed that the Choker variety, once thought to be later, was earlier than the Slant-eye variety. None of the large, hollow, red-on-buff figurines tradition were found at Acambaro, and only one of these was found in the Chupicuaro type site burials. It may that these are coeval with, but not part of, the Chupicuaro tradition as defined by the figurines of the type site.

Collections of figurines in the Museo Nacional de Antropología e Historia in Mexico City from Jerecuaro, Salvatierra, and Yuriria, all in the state of Guanajuato; and from Zinapecuaro and Querendaro in the state of Michoacan were examined (Figure 31). The eyes, nose, mouth, and prognathism of a figurine from Michoacan are like those features in the Choker variety found both at Acambaro and Chupicuaro. The execution of the feet is slightly different in the Michoacan example, but the fish-tail depiction is the same. Also similar is the fluid, rather rubbery way of making the legs. An important difference is that the Michoacan example lacks a choker collar, the distinctive trait of the variety in the Chupicuaro tradition. In spite of this difference, there seem to be enough shared attributes as well as stylistic similarities to postulate a relationship. Other examples from Michoacan also show shared attributes and stylistic similarities. Figurines from Querendaro commonly have eye type 3 and earspool. Other similarities among the figurines from Zinapecuaro, Querendaro, and Acambaro are four incisions to form the eye with no applique fillet, circular earspools with a central depression, and treatment of the nose/mouth and headdress. Two groups of figurines from Cuitzeo, Michoacan (Frierman 1969: pls. 3 and 4) have in common with the Acambaro figurines eye 3, quadrant earspool or cruciform earspool combination. Eye 3 (called the diamond eye) is a trait of the Chupicuaro Slant-eye figurines and of some of the hollow red-on-buff figurines. A figurine with bird or animal instead of a human head from the Guanajuato/Michoacan area is like one with that head depiction from AC/E. However, the one from Acambaro lacks the cockscomb head ornament that appears in the former. Both of these figurines are like the G-2 type from the Basin of Mexico.

Chart 10

FIGURINE ATTRIBUTES

Eye Form

eye 1 - 

eye 2 - 

eye 3 - 

eye 3a - 

eye 4 - 

eye 5 - 

eye 6 - 

eye 7 -  Chupicuaro slant eye

eye 8 - 

eye 9 - 

eye 10 -

eye 11 - 

eye 12 - 

eye 13 - 

eye 14 - 

eye 15 -  - probably not applique

eye 16 -  AC/C/SW/1

Mouth Form

mouth 1 -  AC/E/2

mouth 2 - slit

mouth 3 - 

mouth 4 - 

mouth 5 -  Chupicuaro mouth

mouth 6 - 

mouth 7 - 

mouth 8 - 

mouth 9 -

Nose Form

Pinched nose - Characteristic of Porter's Choker figures

Chupicuaro nose - Characteristic of Chupicuaro slant-eye figures

 nose - Basically triangular in shape

Slit nose - AC/C/NE/1-10 - not applique

Eyebrows - Characteristic of Chupicuaro slant-eye

Genital Form

 Genitals - Female genitals found on choker variety
AC/E/2

 Genitals - Male genitals found on choker variety
AC/E/2

Slit Genitals - Female genitalia represented as slit

Lack of Genitalia - Most Chupicuaro flat bodies lack genitals as do later transitional figures

Surface Finish

Polished - Characteristic of Porter's Choker vairety

Wiped - Characteristic of Chupicuaro slant-eye - can generally see wipe marks of cloth or other on what appears to be slip. Surface techniques too difficult to determine from information at hand.

Earspool Form

earspools - 

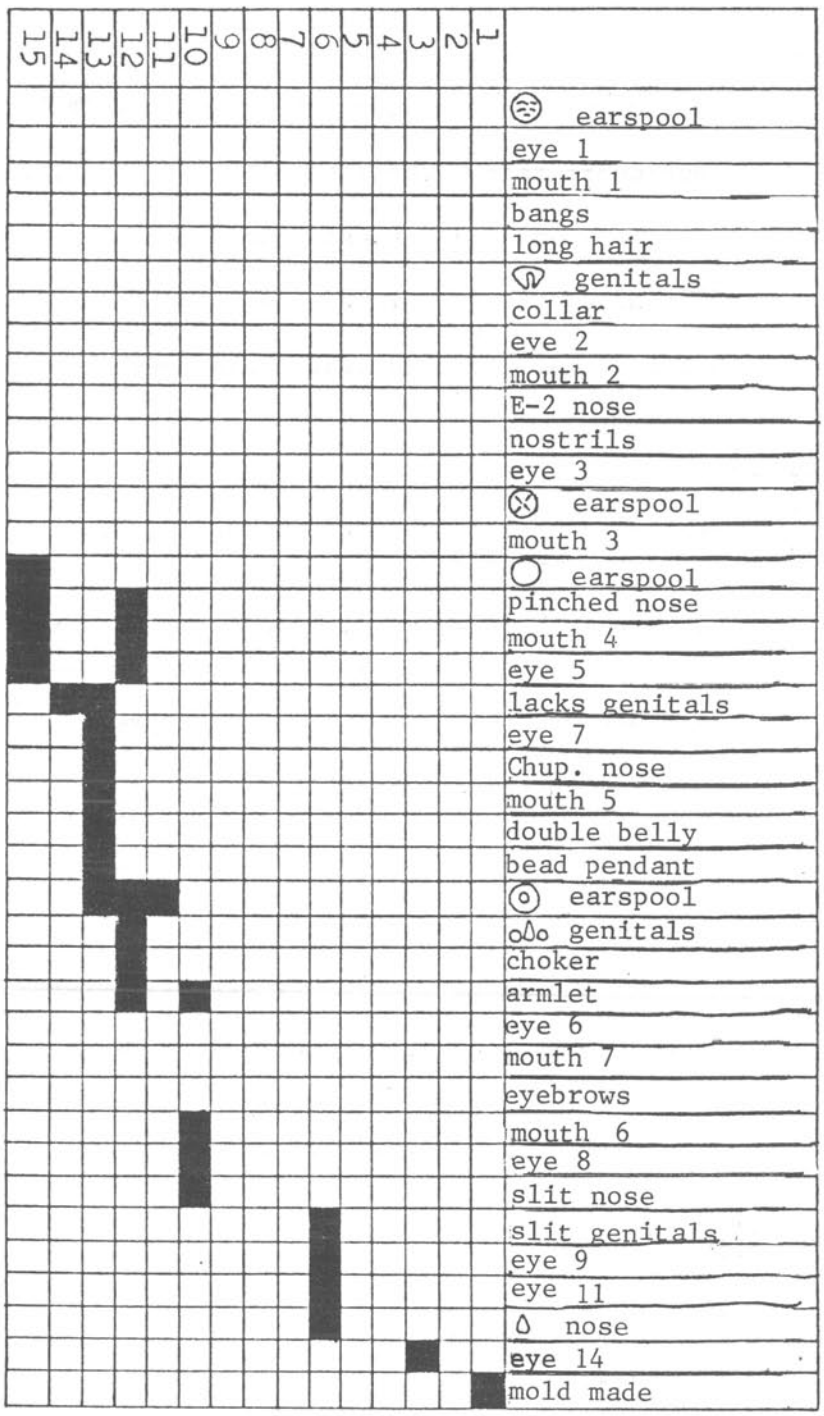
earspools - 

earspools - 

earspools - 

hair or pendant earspools - 

Chart 11



Figurine Attributes - AC/C/NE/1

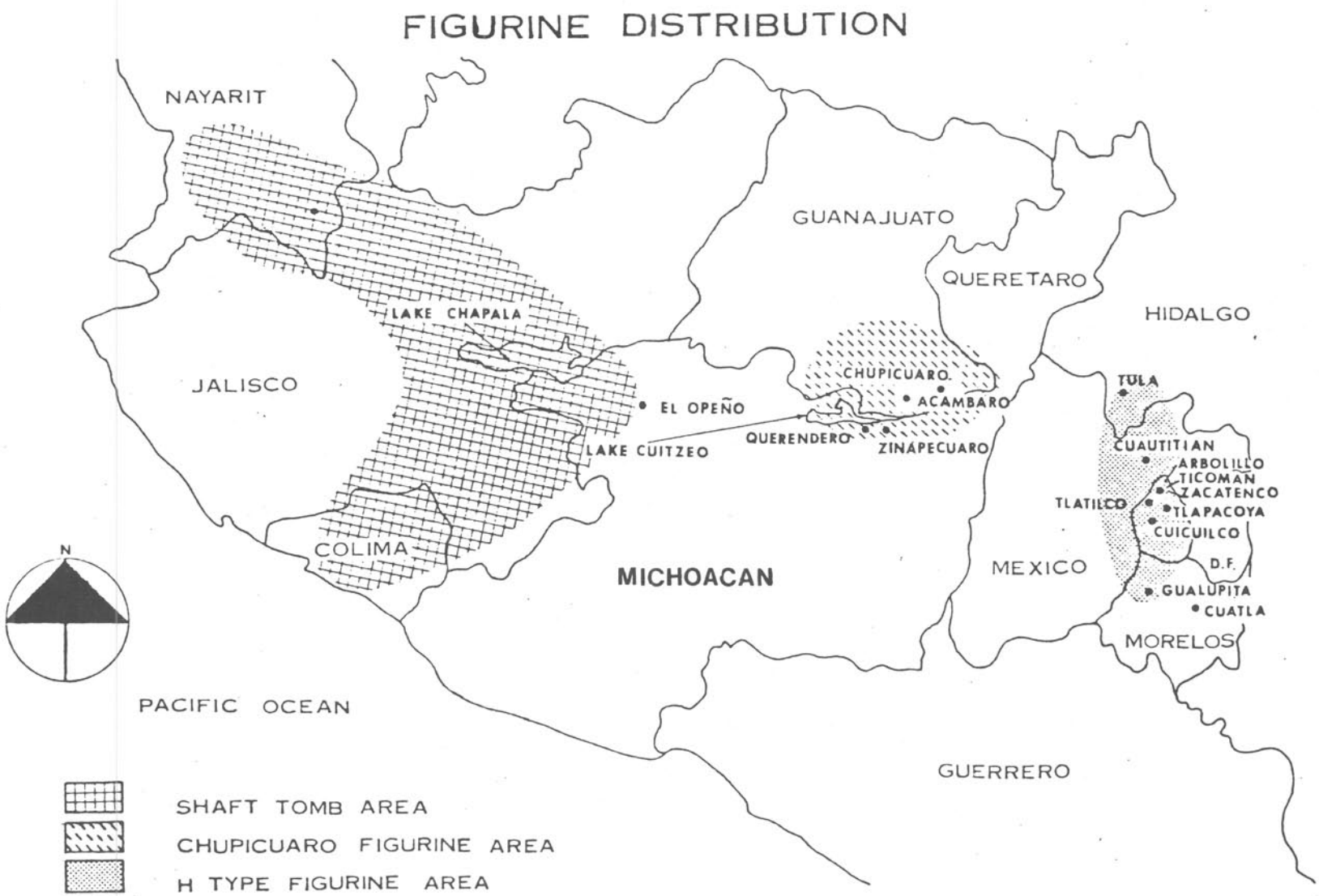

FIGURINE DISTRIBUTION
NAYARIT
GUANAJUATO
QUERETARO
HIDALGO
LAKE CHAPALA
JALISCO
CHUPICUARO
ACAMBARO
EL OPEÑO
TULA
QUERENDERO
ZINAPECUARO
LAKE CUITZEO
CUAUTITLAN
ARBOLILLO
TICOMAN
ZACATENCO
TLATILCO
TLAPACOYA
CUICUILCO
COLIMA
MICHOACAN
MEXICO
D.F.
GUALUPITA
CUATLA
MORELOS
N
PACIFIC OCEAN
GUERRERO
SHAFT TOMB AREA
CHUPICUARO FIGURINE AREA
H TYPE FIGURINE AREA

Figure 31

Piña Chan (1971:171) characterizes the Late Preclassic as a time in which the figurines of the "Chupicuaro-Guanajuato" tradition intrude into western Mexico (H4, H3, H2, H1). Certainly figurine fragments from Acambaro share a number of attributes with figurines from Colima, Nayarit, and Jalisco. Among West Mexican figurines the eye is formed as a round appliqued pellet with a circular central depression and so are the eyes of some figurines from Acambaro. This eye form is also found in figurines of the Chupicuaro tradition. A head fragment from AC/C/SW/1 shares a number of traits with the head of a figure from Jalisco. Both heads have hairdos that are parted in the middle and swept off to both sides, eyes that are appliqued pellets with deep impressions at either end, and earspools. The Jalisco figure, however, has eyebrows, down-turned mouth, and a more elongated head. Two complete figurines, with almost identical heads as the Acambaro heads, found in the Guanajuato - Michoacan area share with Jalisco, Nayarit, and Colima figurines a distinctive wrapped headdress with a long tail hanging down the back of the figure which is clothed in a loin cloth. The Acambaro figurines lend support to Piña Chan's suggestion that the "Chupicuaro Guanajuato" tradition is connected to traditions to the west, namely those of Michoacan and West Mexico.

Initially Chupicuaro figurines were evaluated according to the Basin of Mexico figurine classification system. The Slant-eye variety had been put in the Basin H-4 classification. In 1969 McBride (1969:42) wrote that although the Chupicuaro Slant-eye variety figurines could possibly be classified as H-4d or H-4a, "their plastic tradition is distinctive enough that they deserve to be separated." Bennyhoff (1966:23) had already concluded that the Chupicuaro figurines did not belong in the H group of figurines since the latter are slipped and polished. He suggested that Chupicuaro figurines were intrusive in the Basin of Mexico and "merely influenced the local and contemporary H-3 type which Vaillant proposed as the ancestor of H-4." Bennyhoff proposed a Chupicuaro figurine sequence -- E-2, Choker, Slant-eye. The work at Acambaro affirms the conclusions of McBride and Bennyhoff and indicates that the Chupicuaro figurine tradition is a regional one that contributed to and received ideas, noted as attributes in the analysis, from the Basin of Mexico. There is no indication, however, of shared types and this lack may suggest the limits of communication or information exchange between the two regions in the Preclassic.

Summary and Interpretation

The archaeology of Acambaro reveals a long and continuous occupation in which there was constancy of early established patterns followed by a disjunctive change. Cerro el Chivo itself was occupied from Chupicuaro times to the Conquest. The settlements in the vicinity of Chivo and in the Lerma River Basin were differentially occupied reflecting variant settlement patterns over approximately two millennia.

During the time of the Chupicuaro Phase, dated as 650 B.C to A.D. 100, Cerro el Chivo, the low hills, and some valley locations were occupied by small communities that appear almost indistinguishable from each other in location characteristics and in artifactual remains. These

settlements were above the flood plain and included the resources of forest, river, and hillslope agricultural land within their catchments. Although the faunal analysis does not permit any statistical conclusions, the presence of mammal bones, especially of deer, in the Chupicuaro levels indicates the use of forest resources. The ceramic analysis does not reveal any important differences with the type site of Chupicuaro, nor does the figurine analysis, which shows an essential similarity with the Chupicuaro figurine tradition. Possibly, an expanding-stem point is characteristic of the Chupicuaro Phase. The Mixtlan Phase at Chivo is differentiated from the Chupicuaro Phase primarily on the basis of changes in ceramics. Lithic artifacts are not substantially different from those assigned to the Chupicuaro Phase. The groups of the Chupicuaro Ceramic Complex give way to the groups of the Mixtlan Ceramic Complex. The Mixtlan Phase is dated A.D. 100 to A.D. 450.

There is a Mixtlan-Lerma ceramic subcomplex, and then a clearly differentiated Lerma Ceramic Complex emerges. The Lerma Phase is dated A.D. 450 to A.D. 1450. Contracting-stem points and a figurine tradition with new style attributes are characteristic of the Lerma Phase. These Mixtlan and Lerma Phases are not marked by any noticeable systemic change at Chivo. The small settlements in the Lerma River Basin, however, were not occupied in the Mixtlan Phase, but were reoccupied in the Lerma. This suggests a possible decrease or redistribution of population following Chupicuaro and an increase or shift of population in the Lerma Phase. The Lerma Phase in the valley is identified by ceramic groups that were also found at the Chivo site, and is notable because at these sites, for the first time, there are ceramic groups that do not appear on Chivo. This suggests a heterogeneity that did not exist in either earlier or later phases. The Lerma Phase population is identified by ethnohistoric sources as the Guamare-Chichimec. The Lerma River was the southern frontier for some ethnic-linguistic groups, not well-connected politically, that occupied the northern expanse known as the Gran Chichimeca (Powell 1952:32-39 and Chapter II).

The Acambaro Phase is marked archaeologically by the Acambaro Ceramic Complex. Types from the Yaguarato and Ojo de Agua Ceramic Complexes cross-date it to the Tarascan Protohistoric period, A.D. 1450 to A.D. 1520. Figurines of the Acambaro Phase were made of the same clay as the predominant ware and they were mold-made showing for the first time technological as well as stylistic change. Comparisons of Acambaro Phase ceramics and figurines with those of other regions place them in a local tradition. The lithic artifacts of the Acambaro Phase are within a general Mesoamerican tradition; however, certain attributes, such as the lack of basal-notching and side-notching in points differentiate lithic technology at Acambaro from both Tarascan and Aztec. The continuation of local artisan traditions and the absence of influence in those traditions points to the local populations as the primary stone knappers and potters during the Acambaro Phase.

Dated to the Acambaro Phase are types of the Yaguarato Complex, a Patzcuaro Basin ceramic complex. They are indicators of the Tarascan arrival and settlement in the Acambaro vicinity, noted in the ethnohistorical sources. Since Yaguarato Complex sherds were found at

valley sites and none were found on Chivo, it would seem that the Tarascans were living in residential zones outside the Chivo settlement. Types of the Ojo de Agua Ceramic Complex, which is found localized in a barrio in the northeastern part of Tzintzuntzan, were found on Chivo as well as at Lerma River Valley sites. The distribution indicates the presence of frontier ethnic-linguistic groups in the Tarascan capital.

Settlements on the hillslopes, such as AC/F, AC/G, and AC/CA, were established. The extension of settlement to the hillslopes reflect either an increase or shift in population during the Acambaro Phase. Although the hillslope and valley sites have ceramic groups that are not present on Chivo, all three locations share ceramic groups. The shared ceramic groups predominate in all locations indicating a strong intersite relationship, namely that the Chivo, hillslope, and valley settlements were closely connected during the Acambaro Phase. The survey of the sites of the frontier also show shared ceramic groups, indicating an intersite relationship.

There is a change in subsistence. The archaeology shows a lack of faunal remains in the Acambaro Phase. The ethnohistoric sources note that irrigation was used in the river valley at this time. This technique would have increased agricultural productivity. The ethnohistoric and archaeological data together suggest a shift in subsistence patterns in which agricultural resources overwhelmed, if not actually subsistuted for, local forest products.

The pyramidal platforms were probably constructed during this Phase. There is stratigraphic evidence that the major AC/C/NE structures were built in the Acambaro Phase. The stimulus for the construction of the monumental structures on Chivo very likely came from the Tarascans. Unlike the Patzcuaro Basin Tarascans, neither the Chichimecs of Acambaro nor the Otomi had a monumental architecture tradition (Carrasco 1950:86-90). The Tarascans, on the other hand, were highly experienced in the construction of monuments. The *Relación de Michoacán* (1956:174-175) records:

> Había otro mayordomo mayor, diputado sobre todos los oficiales de hacer casas. que eran más de dos mil: otras mil para la renovación de los cues, que hacían muchas vaces. No entendíanen otra cosa, mas de hacer las casas e cues, que mandaba el cazonci... .

The Acambaro Phase is one in which there were major technological, subsistence, population, and settlement changes; and the persistence of local traditions. The context for these changes includes not only Acambaro, but also the Tarascan and Aztec states.

Chapter IV

Acambaro as a Tarascan-Aztec Frontier Settlement

It was at the beginning of the Acambaro Phase (A.D. 1450-1520) when, according to Tarascan history, Acambaro was taken in the Tarascan expansion of A.D. 1450 and became one of its eastern frontier settlements. The archaeology has shown that the history of the settlement goes back to the first millennium B.C. and that the settlement was continuously occupied from that time. The identification of the group that the Tarascans encountered at Acambaro is given, in the ethnohistoric sources, as Guamare-Chichimec. Archaeologically, they are the population of the Lerma Phase. Ceramic complexes of the Lerma Phase were found at the other four frontier settlements of Zirizicuaro (Maravatio), Taximaroa, Zitacuaro (Jungapeo), and Tuzantla, indicating a cultural homegeneity in this zone before the Tarascan expansion.

The Otomi were another one of the local ethnic-linguistic groups of the Tarascan-Aztec frontier zone. They occupied Taximaroa before the Tarascans and Jilotepec before the Aztecs (Carrasco 1950:277-280). Soon after Acambaro became part of the Tarascan territory, Otomi migrated from Jilotepec. The Otomi migration was at a time when the frontier zones of the Tarascans, on the one hand, and the Aztecs, on the other, were fluid, and the polities were beginning to establish political control over these regions. These several hundred Otomi (4 *principal* families and 60 other families) opted for living in Tarascan rather than Aztec territory. The Tarascans were not sure where to place this willing and sophisticated group because their frontier zone was not fully formed. The Otomi helped the Tarascans make the choice of locating them at Acambaro where they joined an already established Chichimec population. It was only after the Otomi settled at Acambaro that four Tarascan families, probably from the Lake Patzcuaro Basin, were sent out to the settlement, and this had as much to do with events in the Patzcuaro Basin as with the circumstances of the frontier. By this time the highly-centralized political system of the Tarascan core was in place and was strongly effective in establishing policy and in administering policy decisions. Expansion to the east had stopped, Yuriria, Zinapecuaro, Maravatio (Zirizicuaro), Ucareo, Taximaroa, Jungapeo (Zitacuaro), Tuzantla, and Cutzamala had already been taken, and this zone had become a political frontier, separating the Tarascan and Aztec independent states. What the Tarascans needed on this political frontier were stable communities, of sufficient size to do the job and in the right place.

This change in the history of Acambaro is revealed in the Acambaro Phase. The archaeology shows the nature of the Chichimec-Otomi-Tarascan aggregation in that community. First, it records the technological and stylistic changes in ceramics, lithics, and the long-established figurine tradition. Second, it shows the persistence of local tradition. For although these changes reflect a disjunction with the Lerma Phase, they remain within a local historical tradition, different from both Tarascan and Otomi traditions elsewhere. The Otomi and the Tarascan groups were added to the Chichimec community. To accommodate the new populations, the settlement

expanded to the hillslopes and the valley. Ethnohistory notes that irrigation agricultural was practiced at this time, and archaeology shows there was a substantial drop in the use of faunal resources. A shift in subsistence from forest to agricultural resources would have been effective in sustaining the increased population with non-food producing occupations and in meeting the tribute obligations imposed by the new relationship to the Tarascan state.

In the Lake Patzcuaro Basin the Tarascans had learned how to manage and control separate ethnic-linguistic groups. They maintained them as such, but in addition placed them firmly in the Tarascan state-wide social/political system. At Acambaro this device can be seen in the pattern of settlement. The ethnohistorical sources record that each of the three ethnic-linguistic groups occupied a different residential zone. The distribution of the Yaguarato Ceramic Complex which is known from the Lake Patzcuaro Basin, places the Tarascan residential area in the Lerma River Valley and not on Cerro el Chivo. The ethnohistory places the Chichimec on Cerro el Chivo and the Otomi in hillslope and valley sectors. The exclusive residential zones are mirrored in the existence of separate social infrastructures known from ethnohistorical sources. Each group maintained its ethnic-linguistic identity and its own social elite. Nevertheless, the Tarascans controlled and managed the coporate political community.

That control and management is recorded in the ethnohistory and can be seen, archaeologically in the public monumental structures. Although it is likely that there was an architectural tradition in the Lerma Phase, the stratigraphy shows that, at least, the pyramidal platform complex or part of it in AC/C/NE was built in the Acambaro Phase. Some stylistic elements, particularly rounded superstructures, show a connection to Patzcuaro Basin architecture. Neither the Chichimecs or the Otomi (Carrasco 1950:86-90) had a monumental architectural tradition, and the Tarascans were experienced in the construction of monuments.

> Había otro mayordomo mayor, diputado sobre todos los oficiales de hacer casas, que era más de dos mil; otras mil para la renovació de los cues, que hacían muchas veces. No entendían otra cosa, más de hacer las casas e cues, que mandaba el cazonci... (*Relación de Michoacán* 1956:174-175).

The structures show community corporateness not only by their monumentality and public function, but also by their location on Chivo. They are in two critical places, at the entryway to the summit, the densely populated main zone of the settlement, and at the only place on the summit with a commanding view of the surround. The ethnohistory tells us that the Tarascans managed the settlement on behalf of the state, the archaeology shows something of how it was done. The Tarascans, sustaining the *barrio* concept for themselves, the Otomi and the Chichimecs, placed public function in the center of the settlement and thereby at the heart of community life.

A political frontier settlement must have a sufficient population to carry out its assigned administrative and military functions. An estimate of the population during the Acambaro Phase can be derived from a number of sources. The archaeology identifies the summit of Cerro el Chivo as a densely occupied settlement. If 90% of the 15 hectare summit were residentially occupied and the density were 50 persons per hectare, (following Sanders 1965:50 and Blanton 1978:30), then 675 persons were living on the summit of Chivo. In addition the broad terraces of the Chivo hillslopes (AC/F, AC/G, and AC/CA) and adjacent valley (AC/E) were occupied, adding an additional estimated 200 hectares (Figure 32) Calculating the population in the 200 hectare area at 25 persons per hectare, half the density of the summit, would add another 5,000. The Lerma River Valley sites, AC/7 and AC/8 appear to have been residential barrios during the Acambaro Phase. The extent of these sites indicates that were occupied by populations totaling 100. The total population at all these Acambaro locations would be about 6,000.

The ethnohistorical sources also give information on population. Caravajal reported in 1528 that there were 25 houses on the hillslopes of Chivo. This may be a reliable statistic, but it represents only a portion of the settlement, and does not contribute very much to the understanding of the Acambaro population as a whole. The *Relación de Nicolas de San Luis*, written originally in 1535, records an Acambaro population of 5,400 Chichimecs, Otomi, and Tarascans. The *Suma de visitas de pueblos* of 1547-1550 gives a figure of 1,048 *personas*, not counting children under three years of age and records 183 houses in 13 barrios. Estimating the infant population at 11% following Borah and Cook (1963) or at .75 of the 183 households would bring the population to about 1,200 persons.

Cook and Simpson (1948:134-135) give Spanish population estimates for Acambaro. The 1560 *Relación de las tasciones de los pueblos de yndios* assesses Acambaro 3,000 pesos of tribute, one peso of tribute being equivalent to one tributary. Between 1565 and 1570 the *Lista de los pueblos de indios encomendados en particulares* listed 2,800 tributaries. The *Relación de Celaya* gives a figure of 2,600 *vecinos* for 1580 noting that the Prehispanic population was much larger. By 1597 only 1,557 tributaries were listed.

The *Suma* figure for *personas* evaluated with the number given for houses appears to be for persons not tributaries, in which case it is jarringly low compared to the archaeological estimate and both earlier and later figures from ethnohistorical sources. Perhaps, as Cook and Simpson (ibid.) suggest for other places, the Acambaro population size was being concealed for the advantage of the *encomendero*. Certainly Caravajal's report would have aided the suppression of a large population number thirty years later.

The 1560 figure becomes the earliest from documentary sources that is not immediately disputed by contrary information. It is for tributaries, and, therefore, is not for the Acambaro settlement alone, but for the tax district. The 3,000 tributaries listed in 1560 translate into a population estimated at 8,4000, multiplying by a standard factor

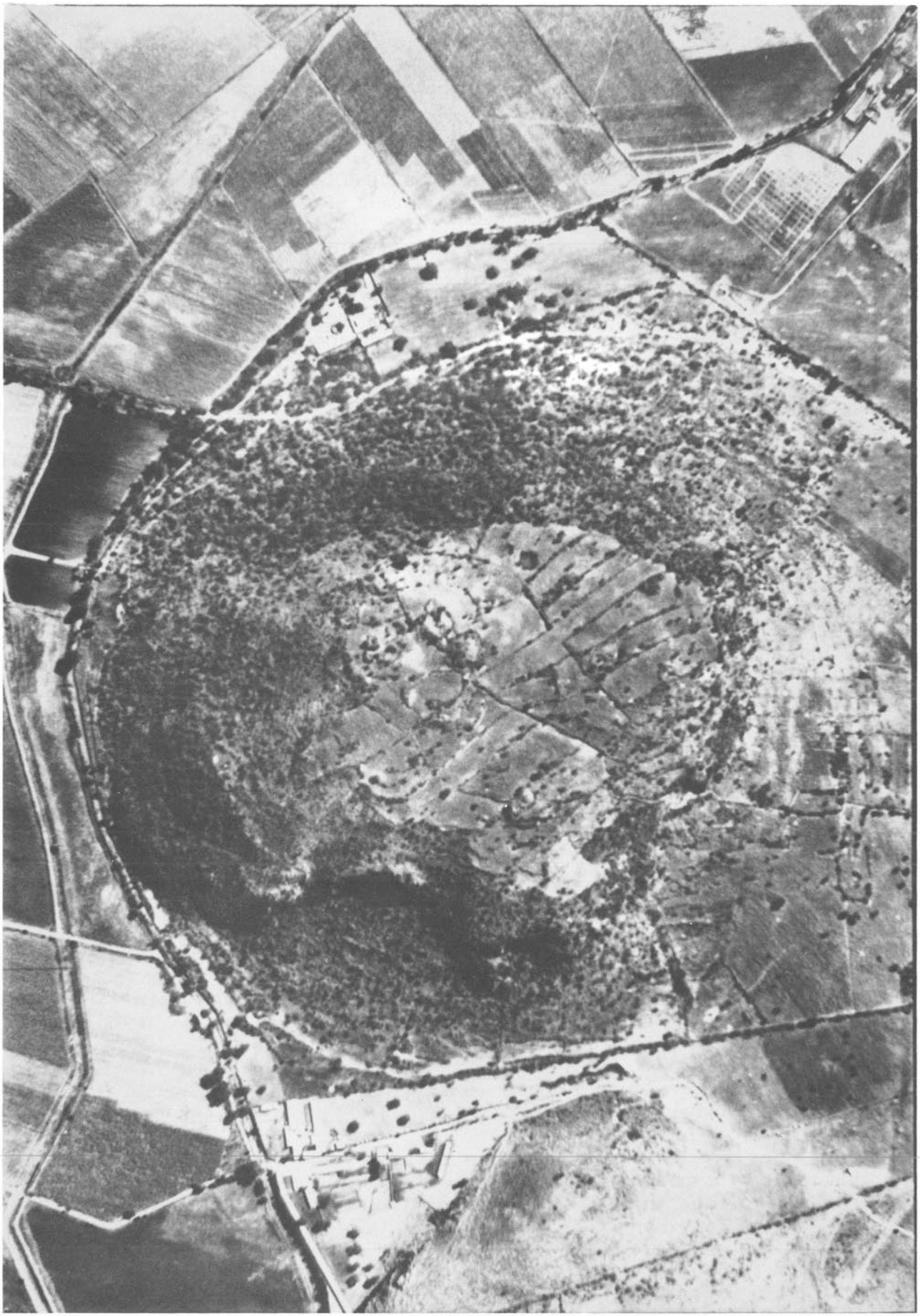


Figure 32

of 2.82 (Cook and Borah 1971:327). Population degradation on the order of a ratio of 2.7:1 has been used to calculate 1519 population in the Basin of Mexico and the Patzcuaro Basin (Sanders 1970:430 and Gorenstein and Pollard 1983:91). Using that ratio would bring the tax district population to 22,680. Assuming a population of about 6,000 for the Acambaro settlement, would give a population of 17,000 (without degradation) for the Posthispanic district of 2,000 km². and a population density of about 8.5/km². But the Acambaro district was larger in Posthispanic times than it was before the Conquest because of the Spanish push north of the Lerma River. The Prehispanic Acambaro district stopped at the Lerma. In other directions its borders would have been the same. Its west border abutting the border of Yuriria/Cuitzeo; its southeastern, the border of Maravatio; and its southern, the border of Zinapecuaro (*Suma* 1905:33). The Prehispanic district is estimated at 1,250 km². If the population density was 8.5/km². , then the district population was 10,625.

The archaeology and ethnohistory together suggest that the Acambaro Phase population at Acambaro was about 6,000, making Acambaro larger than Lake Patzcuaro Basin Class 2 settlements, which had a 3,000 to 5,000 population range. Class 2 settlements carried out rank 3 administrative functions in the Patzcuaro Basin (Gorenstein and Pollard 1983:60-63, 69-72). Acambaro, then, had a larger population, perhaps twice as large as Lake Patzcuaro Basin rank 3 centers with smaller district populations and higher population densities (ibid: 70, 122).

Acambaro as a rank 3 central place in the Tarascan territorial administrative network had administrators and administrative functions. There were two kinds of territorial administrators the *Carachacapacha* and the *Ocanbecha*. The first had the political responsibility of reporting to the central government. The second was charged with collecting tribute, taking the census, and managing public works.

> ...los caciques de la Provincia...llaman ellos Carachacapacha. Hay otros llamados Ocanbecha que tienen en cargo de contar la gente y hacerlos juntar para las obras públicas y recoger los tributos; éstos tienen cada uno de ellos un barrio encomendad. (*Relación de Michoacán* 1956:173-174)

The *Suma de visitas de pueblos* describes Acambaro as a *cabecera principal* and names four *cabeceras sujetas* with 11 *barrios*. Acambaro itself was listed as having 13 *barrios*. The *Relación de Celaya* of 1580 names more than 40 *sujetos*. The map of the region that accompanies the *Relación* (Figure 4) shows 39 settlements in a region of about 2,000 km². Although these are Posthispanic developments, they reflect, nevertheless, Acambaro's position in the Prehispanic Tarascan administrative system.

One of the indications of administrative effectiveness is transport accessibility. The 1580 map gives some clues as to Acambaro's accessibility at that time and probably in Prehispanic times. The map shows nine Acambaro routes linking it to the 39 settlements indicating

that it was easily accessible to almost all, if not all, of its subject settlements. (Although the routes and settlements are drawn carefully, the names of most of the settlements are not readable, and the names listed cannot all be attached to mapped places. Therefore, it is not possible to place the drawn or listed settlements on a map and do a transport accessibility study.)

The Tarascan control and management of Acambaro and its district was done in the interests of the Tarascan state. Like any other administrative central place, it provided tribute to the Tarascan core, the political locus of power for the territory and the economic area accumulating surplus. Even though the core relied on the tribute system for its accumulation of surplus, it also had the power to relinguish that surplus from particular tributaries for other interests. At Acambaro, Otomi and Chichimec were exempt from product tribute because of their military service (*Relación de Celaya* 1580). The relationship between the Tarascan core and periphery was not merely an economic one in which the resources of the periphery were extracted to the accumulative benefit of the core. It was also, and probably primarily, a political one in which the economic periphery became a political frontier to be *supported* when necessary by the *core's* accumulated surplus. The Tarascan government, in this regard as well as others, recognized political interests above economic ones.

There were more than one hundred rank 3 administrative centers in the Tarascan administrative network (Gorenstein and Pollard 1983:127), but only a few on the eastern frontier zone. These frontier settlements, unlike other high-ranked territorial central places, had special supra-territorial functions. They represented the state. One function was to serve as facilitators of Tarascan-Aztec political exchanges. Both Tarascan and Aztec negotiators coming from Tenochtitlan were, on certain occasions, required to stop at a frontier central place and deliver their messages to the administrators at that settlement. The frontier administrators notified Tzintzuntzan that messages had been received. A directive from the capital either invited the emissaries to continue on to Tzintzuntzan or instructed the frontier administrators to reply to them. In the latter case, the travellers returned to Tenochtitlan without passing into Tarascan territory (*Relación de Michoacán* 1956:237-240,246-250).

A second function of the frontier was to administer commerce. The eastern frontier central places were reported to have sent as tribute to Tzintzuntzan products which, by either type or quantity, could not have originated at those settlements. These included armaments, metal objects, jaguar and coyote skins, eagle feathers, tropical feathers, and cacao (Pollard 1982 and Gorenstein and Pollard 1983: Appendix V). The Aztecs were reported to have brought products to the frontier on the occasion when they asked the Tarascans to join them in a war against the newly-arrived Spaniards. These were turquoise, green feathers, preserved food, shields, belts, blankets, and mirrors (*Relación de Michoacán* 1956:237-240).

Aztec long-distance merchants, the *pochteca*, traded in high-value goods; feathers, turquoise and other precious stones, cotton blankets

and clothing, cacao, animal skins and metal objects (Sahagun 1979, pp. 489-500), the very products or the kind of high-value products found on the tribute lists of the frontier zone settlements or brought to those settlements as gifts. I am suggesting that the *pochteca* travelled outside the Aztec domain, not only south and east to the lowlands, which is well-known, but also west to the Tarascan frontier zone.

The Tarascans also had long-distance merchants. Like the *pochteca* they traded in high-value goods; gold, feathers, and precious stones (*Relación de Michoacán* 1956:172,178). But unlike the *pochteca* who constituted a private guild, the Tarascan merchants were civil servants, that is, they were government merchants under government directives. The Tarascan long-distance merchants would have met the *pochteca* at the eastern frontier settlements, equidistant between Tzintzuntzan and Tenochtitlan/Tlatelolco, for an exchange of high-value goods. It may have been high-value goods for high-value goods or the Tarascan merchants may have been exchanging agricultural products for high-value goods. Sahagun reported that maize and chili peppers from Michoacan were sold in the Aztec market (Dibble and Anderson 1961:66-67). If the frontier zone settlements were engaged in such exchanges, then they would have been taking on the functions of ports of trade.

Another kind of exchange may have been taking place there. There were gold, silver, and copper mines in the *tierra caliente* of the Tarascan territory and the ore was controlled by the government either directly or through the tribute system (Gorenstein and Pollard 1983:183-184). These mines were the major sources of metal ores in central Mexico. Aztec artisans working with gold, silver, and, apparently, copper ore ("los plateros ... requieren un metal roja, aunque solamente para que sirva de base a la plata." Sahagun 1979 :523) produced a wide range of metal objects (ibid.:520-524). It would be expected then, that the *pochteca* who traded in metal objects made by the highly skilled Aztec metalworkers would seek to obtain Tarascan metal. Since the Tarascan long-distance merchants were civil servants and therefore responsive to government directives, they may have been the vehicle used to implement an exchange of Tarascan government-controlled metal ore for Aztec metal objects.

It is suggested, then, that the Aztec *pochteca* delivered to Tarascan frontier settlements goods that either entered the Tarascan economic system as tribute, or as government merchandise, or as official gifts. The *pochteca* received goods either through government long-distance merchants or through some other government agency. On the Aztec side it was private enterprise; on the Tarascan side it was government-administered exchange, and the frontier settlement administrators would have been responsible for facilitating the exchange on behalf of the Tarascan polity.

Acambaro in its Military Aspect

Acambaro was a frontier settlement on the northeast corner of the Tarascan territory. The Lerma River was a powerful topographic marker for the frontier; it not only divided east from west but also

north from south. Since the main zone of Acambaro at Cerro el Chivo was north of the Lerma and the region north of the Lerma was Chichimec territory, the presence of Chivo as a zone of the Acambaro settlement constituted an invasion and control of land that the Chichimecs occupied. However, once the Chichimecs were incorporated into the community, it was no longer subject to Chichimec attack. The defeat and integration of the Chichimecs not only quieted the northern front, but it also provided skilled warriors for a Tarascan army. The Chichimecs, for their part, had exchanged the chanciness of marginal subsistence for the security of the Tarascan territorial economy.

With the threat from the north dissipated, Tarascan Acambaro was able to turn to the eastern front. The Acambaro Chichimecs, later joined by the Otomi, became the Tarascans' "gente de guerra" as did the people at Taximaroa, Ucareo, Araro and Tuzantla, among others (*Relación de Michoacán* 1956:247ff.). The "gente de guerra" on this frontier fought the Tarascan-Aztec wars.

The wars with the Aztecs began in the middle of the fifteenth century. The Tarascan Cazonci Zizispandaquare (reign: c.1454-1479) made two forays into Toluca and Jocotitlan (ibid.:166-167). They were unsuccessful. (At this time Toluca and Jocotitlan were still in Matlazinca hands and not yet conquered by the Aztecs. Nevertheless, this action was part of the Tarascan-Aztec conflict since the two polities were attempting to win the same territory, a territory critical to their relationship with each other.) During the reign of Axayacatl (c. 1469-1481), the Aztecs penetrated the Tarascan territory beyond Taximaroa. The battlefield was between Matlatzinco (near Charo) and Taximaroa, not far from Zinapecuaro (ibid.:166-167, Codice Ramirez 1878:75, Tezozomoc 1878:420-425, and Holt 1977:168-169). The Aztecs lost this war and, according to Durán (1967, vol. 2:282), at the cost of 20,000 of its warriors. Within a few years Axayacatl secured Jilotepec, Jocotitlan, and Toluca, establishing part of the northern sector of the Aztec frontier. In a campaign on the western front Ahuitzol (reign: c. 1486-1502) conquered Alahuitzlan, Oztuma, Teloloapan, and Tetela del Rio, establishing much of the southern part of the Aztec frontier. A number of Tarascan-Aztec battles or at least skirmishes took place near Oztuma. (Herrejon Peredo 1978:22-32, *Relación de Ostuma* 1905:108-114 passim). The last Aztec attempt to penetrate Tarascan territory was led by Moctezuma II (reign: 1502-1520) just before the Conquest and was under the command of a defeated military leader of the Tlaxcala campaign. The Aztec armies were engaged at the Tarascan strongholds of Taximaroa, Maravatio, Acambaro, Ucareo, and Zinapecuaro before being defeated and turned back and then driven back to Ixtlahuaca. At the same time the Tarascans launched an offensive campaign on Oztuma (Torquemada 1723:220, Herrejon Peredo 1978:32-39).

The frontier settlements, on both sides, then, were the loci of military activity (Figure 33). Acambaro is named in several accounts of these Tarascan-Aztec wars. The archaeology and ethnohistory of Acambaro suggest how the settlement and population functioned militarily. First, it was one of the vanguard settlements in the frontier zone which extended south from Acambaro to Maravatio (Zirizicuaro), Taximaroa, and Zitacuaro and then to Tuzantla, Cutzamala, possibly

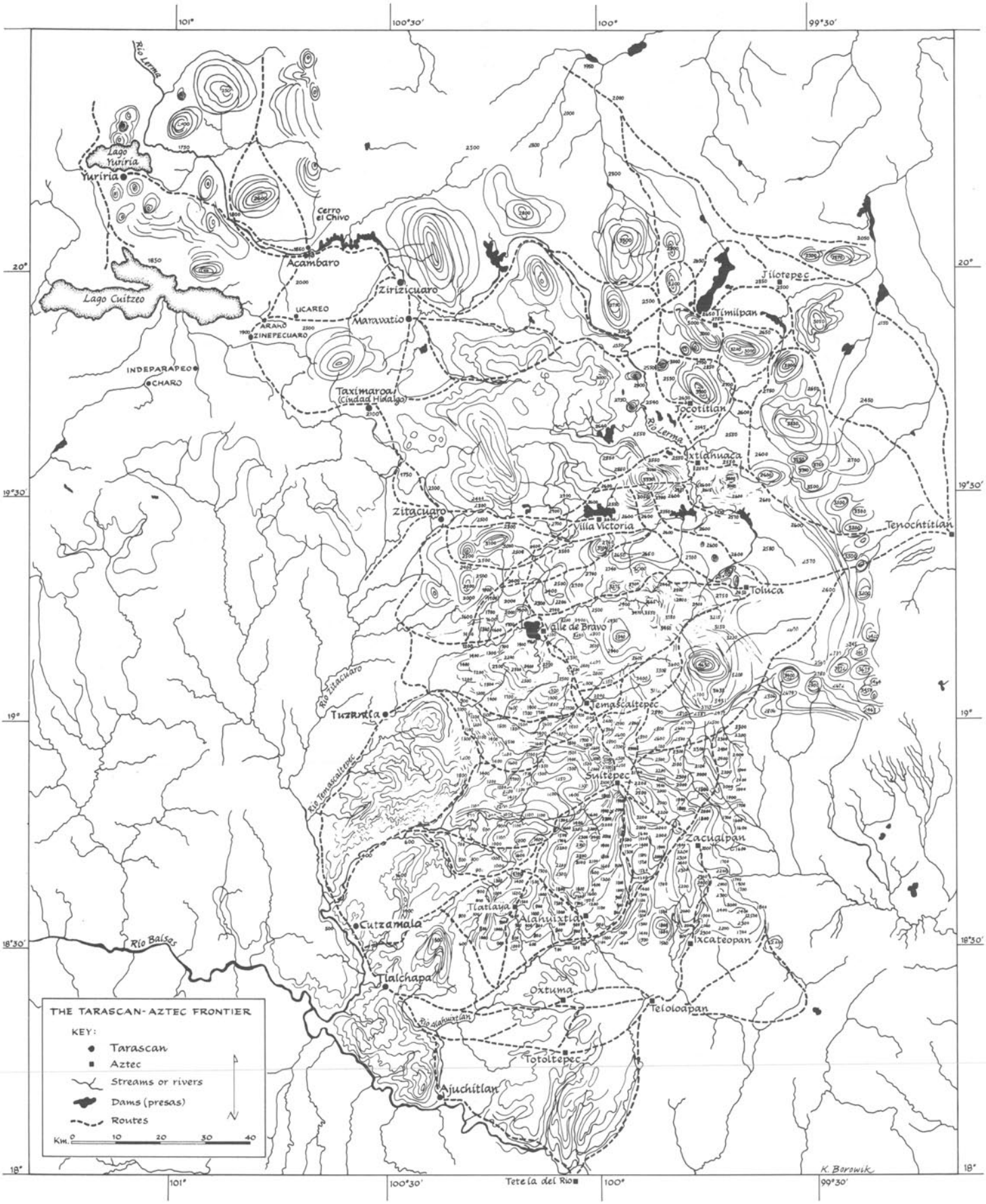

THE TARASCAN-AZTEC FRONTIER
KEY:
Tarascan
Aztec
Streams or rivers
Dams (presas)
Routes
Km. 0 10 20 30 40
Río Lerma
Lago Yuriria
Yuriria
Cerro el Chivo
Acambaro
Lago Cuitzeo
UCAREO
ARANDAS
ZINEPECUARO
Zirizicuaro
Maravatio
INDEPARAPEO
CHARO
Taximaroa (Ciudad Hidalgo)
Jilotepec
Río Timilpan
Jocotitlan
Río Lerma
Ixtlahuaca
Zitacuaro
Villa Victoria
Tenochtitlan
Toluca
Valle de Bravo
Río Zitacuaro
Tuxtla
Temascaltepec
Río Temascaltepec
Suitepec
Zacualpan
Tlatlaya
Alamixtla
Ixcateopan
Cutzamala
Río Balsas
Tlalchapa
Oxtuma
Teloloapan
Río Atoyac
Totoltepec
Ajuchitlan
Tetela del Rio
K. Borowik
101°
100°30'
100°
99°30'
20°
19°30'
19°
18°30'
18°

Figure 33

Tlalchapa, and Ajuchitlan. These constituted a north-south frontier. Second, Acambaro was part of an east-west frontier as well. This began at Maravatio/Zirizicuaro and went west to Acambaro and then Yuriria. Both these frontiers were developed to maximize success in military action, both defensive and offensive, against the Aztecs. Between the Tarascan and Aztec frontiers lay land broken by rivers and a series of hills and mountains. The river and land routes through these hills and mountains emerged at only a few points. The northern settlements on the north-south frontier oversaw the river routes. The southern settlements oversaw the land routes that went through the mountain passes or that followed level elevations. (These attributes were determined by locating routes through a combination of air photo analysis [Cia. Mexicana Aerofoto series 1:50,000 1:20,000 and CETENAL air photo series 1:25,000] map interpretation [CETENAL 1976-1979 topographic map series 1:50,000], and field investigation [1980]. Additional routes were then projected.) The routes were also used by both sides to gather intelligence on enemy strategy and tactics, including troop size and movement (*Relación de Michoacán* 1956:109, 177, 196-198, 230-255 passim).

Since all the settlements on this frontier were at strategic points it appears that the Tarascans were selective in their earlier conquests and were guided by a military plan that recognized the Aztecs as a military and political foe. Certainly by the Acambaro Phase the settlements on this frontier consituted a unitary military system which required the coordination.

Routes along the Tarascan frontier enabled coordination by providing means of communication. Military settlements in the northern part of the north - south frontier were from 30 km. to 50 km. apart. From Zitacuaro south they were from 50 to 70 km. apart, excepting Tlalchapa. (It may be that not all the military settlements south of Zitacuaro have been cited in the ethnohistoric sources.) The northern settlements in the connected easily to each other, either by the Lerma River route (Yuriria - Acambaro - Zirizicuaro) or by land routes on relatively level ground (Zirizicuaro - Maravatio - Taximaroa - Zitacuaro). Adjacent northern settlements were within hours of each other. The entire north - south frontier could have been in full communication within a week. On the east - west part of the frontier Acambaro was easily linked to Zirizicuaro on the east and Yuriria on the west by the Lerma River. These three settlements were easily in communication within a day.

Another means of communication was by bonfire, and in the Lake Patzcuaro Basin this was a prescribed technique for signalling the beginning of a war and mobilizing troops (ibid.:173, 186). The archaeology indicates that large fires were made at Acambaro. All in all, tradition and opportunity would make it likely that signal fires were used at Acambaro. The military effectiveness of this frontier can best be seen in the war launched by Axayacatl in which the great battle was fought between Matlazinco (Charo) and Taximaroa, near Zinapecuaro. Considering that there were "gente de guerra" at Acambaro, Zirizicuaro, and Taximaroa, which consituted vanguard defenses, and also "gente de guerra" at Ucareo and Araro which were behind the

vanguard; it was to the Tarascan advantage not to engage a large Aztec force (reported by Durá to have been 24,000) at Taximaroa or at any other vanguard strategic point where they crossed. They did not do so. The Tarascans withdrew their center and allowed the Aztecs to enter Tarascan territory. The Tarascans then coordinated the forces from Taximaroa, Zirizicuaro, Acambaro with each other and with those from Ucareo and Araro, and attacked an encircled Aztec army for an easy victory. This is a militarily technically advanced movement since it requires a plan that forgoes the possibility of immediate victory at the point of initial attack and relies heavily on excellent intelligence on enemy movement, perfect communication among the defensive forces, and sure command over the whole.

Acambaro, then, was part of an military frontier. It had, however, an especially critical role. The easiest way to cross the difficult terrain between the Aztec and Tarascan frontiers was to follow the Lerma River which flowed from the Toluca area, well inside the Aztec territory, past Zirizicuaro, Acambaro, Yuriria, and continuing along the entire northern length of the Tarascan territory. Acambaro was at the critical northeast corner of the Tarascan territory at the point the Lerma turns from the north to the west. Cerro el Chivo has a 360° field of view, and a 5 km. to 10 km. perimeter of land can be observed without obstruction (Figures 34 and 35). The Lerma River east of Acambaro can be seen for about 5 km. after which it turns a bend. However, AC/G and AC/CA cover this blind spot and increase the field of view. AC/E, almost on the banks of the Lerma was in the position of a checkpoint on the Lerma. It was in the line of sight of Cerro el Chivo and of AC/G and AC/CA. The three subsidiary sites were able to signal the approach of enemy forces on the Lerma to Chivo. The Chivo forces could then launch an attack on the invading forces.

The Acambaro situation is geared to attack. The placement of the Acambaro sites is suited to a tactical plan that engages the enemy and turns it back. The engagement began with fire action possibly before but certainly as the enemy forces were canalized along the Lerma (using it either as a river route or its banks as a land route) between AC/CA and Cerro el Toro. Fire troops, with bows and arrows and slings, would have been deployed along the hillslopes, which are the military, not topographic, crests of the hills, where the higher elevations would have afforded them a measure of protection and therefore an advantage over the fire power of the Aztecs. A fire line along the hillslopes extended potentially from AC/CA to the western end of Cerro El Chivo. The fire action which weakened, disorganized, and slowed the enemy was followed by shock action in the valley. The shock weapons were clubs, the macana, and the Tarascan thrusting implement. The Acambaro vicinity force of 1,500 (see below) would have been able to handle a surprise attack on this point. With military intelligence the district force of 4,500 could have been gathered for a battle. Acambaro had the capability of holding this point against an enemy of greater troop strength, considering the enemy disabilities of distance from supply and ignorance of terrain; and in this way had a powerful control over traffic on the Lerma River.

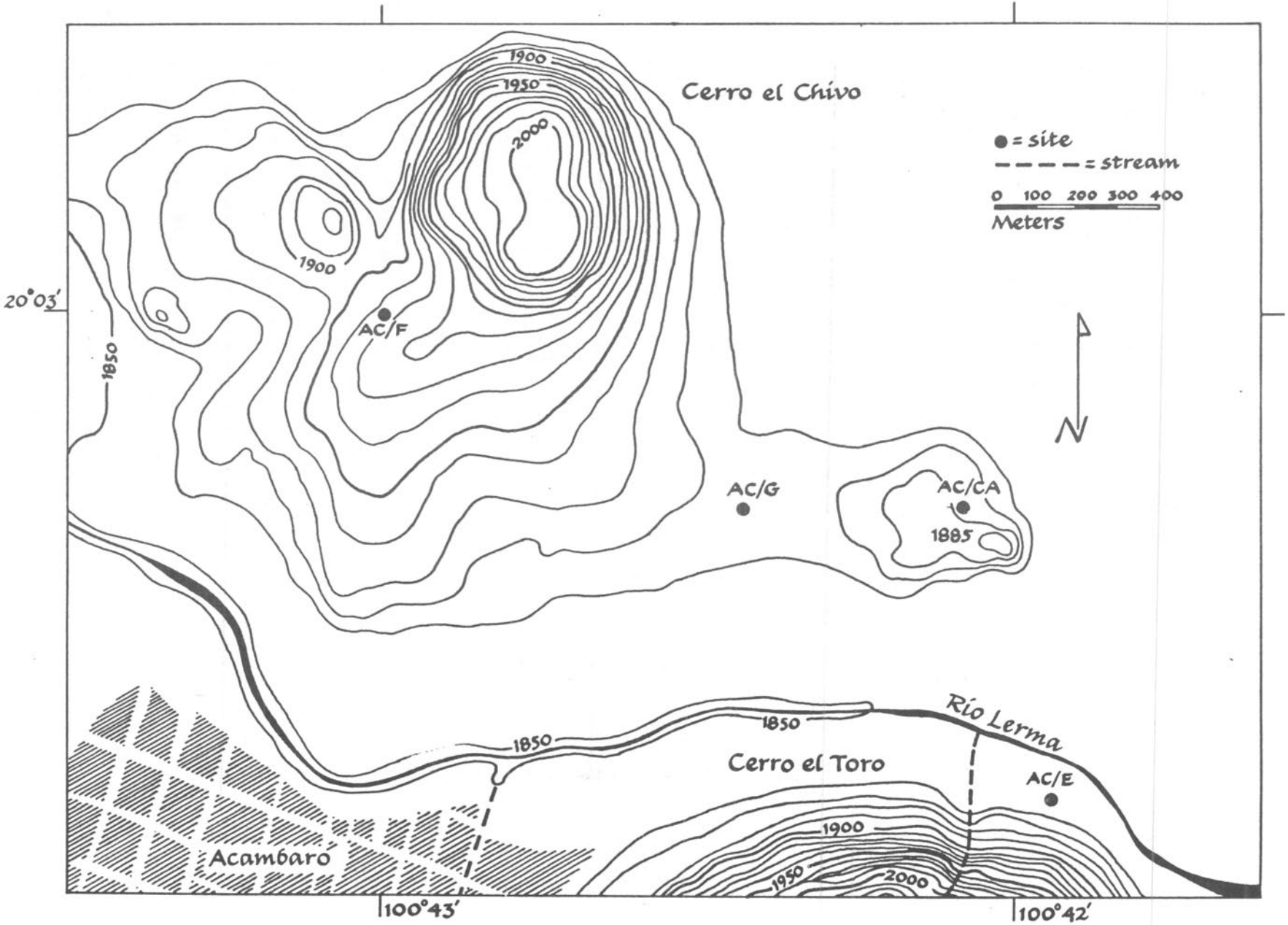

Cerro el Chivo
● = site
– – – – = stream
0 100 200 300 400
Meters
20°03′
1900
1950
2000
1850
AC/F
AC/G
AC/CA
1885
N
Río Lerma
Cerro el Toro
AC/E
Acambaro
100°43′
100°42′

Figure 34

Figure 35

Acambaro defended, through offensive action, a strategic point, but Acambaro itself was not the object of defense. There were no walls, no moats, no gates around it. Even the topography offered little defense since Cerro el Chivo is a low hill with a fairly gentle slope. (Cf. Tepexi in the Mixteca-Puebla which was on the summit of a steep hill and had encircling walls and false gates. Gorenstein 1973.) Adjacent Cerro el Toro is a large high hill easily defended. A defensive force on its summit would be out of the reach of enemy fire troops and climbing it would slow down and disorganize any enemy shock troops that attempted to take it. Cerro el Toro was not used, however, clearly because defense of the community was not Acambaro's role. This is expected on a military frontier since what is being protected is not on the frontier but behind it, and what was behind it in this case, was the Tarascan territory.

This discussion of the military features at Acambaro should not mislead the reader into classifying it as a military site. It also functioned in the Tarascan territorial administrative system. The military personnel at Acambaro do not constitute a garrison in the sense of transported, professional soldiers stationed at a post. The archaeology and ethnohistory suggest a settlement with a number of functions, among them a military one, inhabited by a predominately local, residential population.

The three ethnic-linguistic groups at Acambaro played different roles in carrying out the military functions. The Chichimecs had a culture that developed military skills, and militarism was highly valued. Since they had the largest population at Acambaro, they constituted the bulk of the military force. Their forte was archery, and they took the main responsibility for fire action. The Chichimecs also manufactured their bows and arrows, according to the ethnohistorical sources. AC/CA with its predominantly lithic artifacts may have been a weapons workshop. Another source of weapons and other armaments was the Tarascan government. There were government artisans who made cotton armor, shields, as well as bows and arrows and blades. Arrows, at least, were kept in government storehouses (*Relación de Michoacan* 1956:171,172,177). Also the government collected armaments through tribute, through gifts (Gorenstein and Pollard 1983: Appendix V), and possibly through long-distance exchange. The Tarascans at Acambaro, as administrators, would have taken the responsibility for ordnance, that is, for procuring, storing, and issuing weapons.

The Otomi were also soldiers in the Acambaro army unit. Their special weapon was the macana. Considering that the Chichimecs excelled in the use of the bow and arrow and therefore provided fire power, the Otomi's expertise with the macana would have given them the role of shock troops in battle. The Otomi also had the sling (Carrasco 1950:122-138) and may have used it at Acambaro. The Otomi were engaged in intelligence. Spying was a well-defined aspect of the Tarascan military system. Spies not only reported on troop movements, but also on topography, and this information was used in strategic planning sessions to draw maps and to direct ground action (*Relación de Michoacán* 1956:177,189,193,195). Independent Otomi served as spies for both the Tarascans and the Aztecs because they knew the frontier

zones well and spoke the languages of both the Tarascans and Aztecs (ibid.:237-240, 247-249). In addition, Otomi was spoken on and between the two frontiers (Carrasco 1950:27-33). It is likely, then, that the Otomi of Acambaro who had the same knowledge of landscape and language as the independent Otomi, also served as spies.

Military service exempted the Chichimecs and Otomi of Acambaro from paying tribute. They were required to turn over to the Cazonci the prisoners and blankets captured in war. Other accounts record that the Otomi paid tribute but always far smaller amounts than the Tarascans who were responsible for collecting tribute from the district.

The Tarascans as the smallest ethnic-linguistic group could not have constituted a large contingent in Acambaro's armed force. Since they had the responsibility of carrying out Tarascan government policy militarily, they were most likely engaged in directing communication, intelligence, and supply. They probably conducted the strategic planning sessions since this was a Tarascan strength. There is some indication that in forces of mixed ethnic groups the Tarascans were in the forward point when the army went into battle. Tarascan weapons were the long and short handled thrusting weapon. (*Relación de Michoacán* 1956:59,179,190, 196-198, 237).

The size of the Acambaro armed force can be estimated through different kinds of information. A general description of how Tarascans conduct wars suggests that a division was 12 "escuadrones" of 400 men each. This would bring the total force to 4,800. On one occasion a combined military force consisting of more than one division gathered at Indeparapao numbered 8,000 (ibid.:196,250). The population at Acambaro itself was about 6,000. From this would come an immediate force of about 1,500, sufficient to hold the strategic point on the river. The district had a population of about 11,000 from which about 3,000 soldiers could be summoned up. Acambaro as a staging area, then, could muster a division of around 4,500, possibly the standard strength for that unit.

The Acambaro forces were supplied by their community. The Acambaro district of 1,250 km². had the resources and technology to feed its population of about 17,000. However, as part of eastern frontier military system, its forces would have been supplied when necessary by the other settlements of the frontier. Ultimately the Tarascan government was responsible for supply. It received food as tribute from Acambaro, but also exempted it from food payments when necessary. This suggests that the district was self-sustaining, but also indicates that even if the district could not sustain its population the Tarascan government would have taken on the responsibility.

In summary, Acambaro in its military role was part of an integrated frontier. Each settlement on the frontier was at a vulnerable and strategic point. Acambaro's point was the Lerma River, a pathway from Aztec to Tarascan territory. Its military stance was aggressive beyond the needs of its community. It was, appropriate to the needs of the Tarascan state.

Conclusion

It was the development of the Tarascan political system in the Lake Patzcuaro Basin in the fourteenth and fifteenth centuries that made Acambaro a Tarascan political frontier settlement. In that development the Basin Tarascans did two things. The first was to manage diverse ethnic-linguistic groups by creating a unitary social system that transcended group loyalties. The second was to build a strong administrative system to carry out political directives (Gorenstein and Pollard 1983:97-131). Both of these accomplishments served the Tarascans well at Acambaro. The first enabled them to bring the Chichimecs, Otomi, and Tarascans together as a working unit while accepting their different ethnic-linguistic group identities. The Chichimecs, Otomi, and Tarascans lived in separate residential zones and the Chichimecs and Otomi had their own social leaders. However, those leaders, appointed by the Cazonci, were responsible to the Tarascan administrators of Acambaro. The second accomplishment gave information and expertise to the Tarascan administrators on how to control and manage a community and, most important, provided the community goal - to serve the Tarascan polity.

The ethnohistory has shown Acambaro's importance and integration into the Tarascan political system. The archaeology, on the other hand, has shown the importance of local groups. The Tarascan political frontier was not established by Tarascan migrations or colonies. It was not even occupied by Tarascan troops. Nor did the Tarascans use Patzcuaro Basin culture either imported or recreated to bring Acambaro into the Tarascan world. It became part of the Tarascan civlization through its place in a regional network, and it was the regional network that was integrated into the Tarascan political system. Individual settlements, then, were not jarred loose from former ties and were able to sustain their equilibrium in the new system through their continuing relationship with connected groups. This continuing connection was the strength of the frontier. It enabled the frontier settlements to act in concert with one another. What the Tarascans added was the goal. They implemented the goal by assuming the direction and adminstration of the ethnic-linguistic groups in their communities. The administrators had two jobs. The first was to direct the frontier settlements in their military role. The second was to act as foreign service officers, sometimes in political matters, sometimes in economic ones. What enabled the administrators to do their job was the support of a territorial administrative network and the backing of a strong core political system. The territorial administrators were Patzcuaro Basin Tarascans. They remained Patzcuaro Basin Tarascans by having an elite rank in the Tarascan social system, by having the highest rank in the administrative system, by returning to the capital, Tzintzuntzan, for every major policy decision that affected the Tarascan state, and by a custom which made marriage an event in the social rather than political system, preventing political alliances based on that device (*Relación de Michoacán* 1956:173, 193, 207-217). The administrators were well-integrated into the Tarascan social-political system, and their high ranks gave them a stake in its continuance. This meant that if one or even a group of ethnic-linguistic communities did not fall into line, its Tarascan administrator could count on aid from

any other different ethnic-linguistic community because it had a Tarascan administrator tied not only by political but also by cultural and social loyalty. The administrators also had the core behind them. The core had the political power to provide the economic base for the frontier settlements. This Tarascan political frontier, then, with its particular character, structure, and functions was a product of the Tarascan core administrative network and the political system.

It was as a frontier settlement that Acambaro may have been part of change in Tarascan and Mesoamerican history and culture. It is certainly true that the nature and needs of the core form the frontier. It is also true, however, that the frontier affects the core and the state. This was, of course, Frederick Jackson Turner's 1893 frontier hypothesis, that American institutions were forged on its frontiers (Billington 1966). I am not suggesting that Tarascan institutions were born on the frontier, but rather that the circumstances on the frontier affected the further development of the already established Tarascan state, and, indeed, the Aztec state as well.

The Tarascan-Aztec frontier was a region of parallel development. It was not only the Tarascans who had a military system composed of settlements on a long north-south and a short east-west frontier, it was also the Aztecs who had such a military system with a similar geographical distribution of frontier settlements. Both polities had captured and coopted the settlements of indigenous people and put them into the service of their own government. (See Holt 1977 on the Aztec administration of the settlements on the Aztec side of this frontier.) Indeed, the number, position, and functioning of frontier settlements on each side of the Tarascan-Aztec frontier shows a symmetry that could have come about only by interchange and transposition.

The major facilitators of these processes may very well have been the Otomi. The frontier region, taken over by the Tarascans on the one side, and the Aztecs on the other, was the historical habitat of the Otomi. There were Otomi on both frontiers and, in fact, in both capitals (Carrasco 1950: 27-31, 33, 40-42 and Ojo de Agua ceramic analysis in this volume). Knowing the terrain, the routes, and the indigenous population; they moved easily from frontier zone to frontier zone and from capital to capital serving as information carriers (*Relación de Michoacán* 1956:239-240, 250). Like the Tarascans and the Aztecs, the Otomi were from a tradition with experience and understanding of politics and government of high cultures (Carrasco 1950:103-119, 257-291).

In addition, the Tarascans and Aztecs themselves, even though they did not officially recognize each other, were in communication on the frontier. The actions of the Aztecs at Taximaroa asking the Tarascans to join them in a war against the Spaniards appear to follow an established pattern of frontier negotiation including the exchange of gifts (*Relación de Michoacán* 1956:109 and 232 note the road from the frontier to the Aztec capital, 237-240, 246-250).

Although it was a frontier of separation, it was also a frontier where there was controlled intercourse and contact. Through whatever

offices, there occurred on this frontier, and on no other Tarascan frontier, an interchange of information about political institutions, and this information was being used in the management of settlements on both sides of the frontier. Those settlements were administered exclusively and efficiently on behalf of their respective polities. Administrative skills were being honed on the frontiers and brought back to the political cores. Certainly, the Tarascan rulers relied on the advice of their frontier administrators. They were among the highest-ranked political figures in the polity and were brought in for all major decision-making conclaves (*Relación de Michoacán* 1956:193). If the Aztec and Tarascan governments were becoming increasingly centralized in the early sixteenth century, as some analysts have suggested, it may be because of the synergistic processes occurring on their shared frontier. The skills they brought to the edges of their territories enabled them to establish frontiers. What they learned together on the frontiers enabled them to change their states.

Bibliographic Note

The most informative ethnohistorical document on the Tarascans is the *Relación de las ceremonias y ritos y población gobierno de los Indios de la provincia de Michoacán 1541*. The author of the *Relación* was the Franciscan friar Gerónimo de Alcala (Warren 1971) and was written from information given by Tarascan informants who were witness not only to the events of the Conquest but who were also participants in Tarascan culture of the Protohistoric period of A.D. 1450-1520.

There are also extant pictorial manuscripts of the sixteenth century. (The following review is based on Glass 1964, 1975; Glass with Robertson 1975; Mateos Higuera 1947/1948,1948.) The *Relación de Michoacán* 1541 must be listed in this category as well since it was illustrated by 44 colored drawings. Beaumont's *Crónica de Michoacán* reproduces nine scenes depicting conquest period events and circumstances. In addition it contains a map of the Lake Patzcuaro Basin showing the transfer of episcopal see from Tzintzuntzan to Patzcuaro in 1540. Although Seler (1908) reproduces a" Beaumont" map, it is not the map in Beaumont (1932), and it may be that an earlier edition of Beaumont used by Seler had a different version of this map. In addition Seler publishes a map of this event which he purchased and which is different from either of the Beaumont versions. Cuevas (1921-1928, vol.1) reproduces still another version which is different from Beaumont (1932) and both of Seler's versions. The *Mapa de Santa Fe o de Pátzcuaro* concerns agricultural lands in the vicinity of Santa Fe de la Laguna.

The *Códices de Carapan, no.1 y no.2*, have not been published but are described as depicting Prehispanic and colonial period scenes. The *Genealogía de los Caciques de Carapan* has been published and the drawing has been interpreted as showing eight Tarascans who were, perhaps, rulers.

The *Códice de Arantza* is not published but has been described. Mateos Higuera (1948) lists the discoverer of the codice as Dr. Pablo García Abarca of Uruapan. Glass and Robertson (1975) report that the Garcia Abarca copy said by Mateos Higuera to have been given to the Sociedad Mexicana de Geográfia y Estadistica was not in its possession in 1964. Mateos Higueras attributes his description of the,contents to Ramon Mena who called it a new Tarascan codice when he published an article about it in 1913. Mateos Higuera suggests that it is Prehispanic but that its date is not known. The *Códice de Arantza* names 15 settlements as dependent on Tzintzuntzan. These are Andachuri, Arantza, Corupo, Charapa, Cheran, Arapo, Cheran Asthicuri, Cherengueran, Nahuatzen, Parangaricutiro, Paricuti, Seuina, Tzacan, and Zirosto. Two independent settlements, Patzcuaro and Cuincacatzi, are identified as being in the Lake Patzcuaro Basin and as being associated with warriors.

The often-published Lienzo de Jucutacato concerns a migration through different places. It begins at Chalchiuhtlapazco proceeds to

Tenochtitlan and continues to Cupaquaro (Capaquaro), Mataguaran, Cucuhtacato, Vruuapan (Uruapan), Tezcatlan and Pazquaro. Brand (1943:98-99) suggests the original was eaten by rats in the storeroom of the Sociedad Mexicana de Geográfia, perhaps the fate of the *Códice de Arantza*.

The only available copy of the *Lienzo de Puácuaro* was apparently made in the nineteenth century from the sixteenth century original. On the side of the lienzo is a distorted drawing of Lake Patzcuaro with exaggerated topography in the area of the settlement of Puácuaro. Puácuaro is an orienting symbol for the rest of the lienzo, which has a centerpiece of four rows of skulls (or possibly disembodied faces), drawings of Tarascans, and artifacts of Tarascan culture such as pyramidal structures and ceramics. There are also depictions of Spaniards and Spanish churches. The Tarascan text has not been translated.

The *Lienzo de Nahuatzen* is dated July 20, 1521 and is a conquest scene. The *Lienzo de Sevina* conveys geographical information about towns. Two discernible town names are Cucucho and Vaphicho. Pyramids and agricultural fields are shown. The lienzo also depicts conflict between friars and priests and shows the contrast, if not conflict, between Tarascans with bows and arrows and mounted Spaniards. Both Nahuatzen and Sevina are less than 30 kilometers northwest of the Lake Patzcuaro Basin. There are also the *Tributes of Tzintzuntzan and Tlalpujahua*, and the *Cóice Huapean*. The first manuscript is discussed in Chapter II. The Códice Huapean is reproduced by D.E. López Sarrelangue (1965: 98-101, 305-306). The date of this historical-judicial codice is 1567 and the subject is identified as don Alonso Huapean who was the cacique and gobernador of Zinapecuaro. An important element in the codice for this study is the depiction of the continuing administrative relationship between Patzcuaro and Zinapecuaro.

Another category of documents are the depositions made by Tarascans of the noble class to the Spaniards concerning pensions, and property rights. Two are by lineal descendants of the last Cazonci. The first, by the son of the Cazonci, Antonio Huit-Siminari (Huitzimengari) dated 1553 identifies Culiacan, which lies in the state of Guanjuato about 15 kilometers north of the Lerma River on the 101° parallel, as a marker on the Prehispanic Tarascan northeastern frontier. It is more oriented to the north than to the east because it oversees the route to the Lerma River by those approaching it from the north and heading south, and it may have been an isolated outpost.

The second deposition is by Constantino Huitzimengari, the son of Antonio and grandson of the last Cazonci and is dated 1594. In this Información, Xichu, in the northeast of the present state of Guanajuato, is named as a frontier marker for the northeastern part of the Tarascan territory. Like Culican it may have been an outpost of the northern frontier. Also named are 129 Prehispanic tributary settlements. The easternmost settlements on this list are Asuchtitlan, Yuriria (Orirapundaro), Taximaroa (Tlacoabayan), and Tuzantla (López Sarrelangue 1965:29-30). Ixtlahuaca, considered to be Aztec at the time

of the Conquest, is listed as a Prehispanic Tarascan tributary. Constantino Huitzimengari may have been misinformed or his attribution of Ixtlahuaca to Tarascan territory may be an indication of the fluidity of the Tarascan-Aztec frontier in the decades before the Conquest.

J. Benedict Warren (1977) has published and interpreted documents referring to the Conquest period years 1521-1530. Although not identified as frontier settlements, Yuriria, Acambaro, Maravatio, Taximaroa, Cutzamala, and Asuchitlan are recognized and administered as major centers.

In the second half of the sixteenth century Fray Alonso Ponce (1968) described his travels from Toluca westward. Eastern Tarascan settlements were noted as Zitacuaro, Tuxpan, Taximaroa, Tzentzenguaro, Maravatio, Tarandacuaro, and Acambaro.

There are also the *Relaciones geográficas* of 1579-1585 which were the responses to 50-chapter inquiry that was compiled in 1577. For the Bishopric/Archbishopric or Diocese of Michoacan the following *relaciones* exist, named according to the principal *cabecera*, Asuchitlan, Celaya, Chilchotla, Cuiseo, Jilquilpan, Motines, Necotlan, Patzcuaro, Queretaro, Taimeo, Tancitaro, Tinguindin, Tuxpan, Zacatula, Zinagua, and Zirandaro. These relaciones also have information on places other than the cabecera. The *Relación de Asuchitlan* has information on Cutzamala and Pungaravato; the *Relación de Celaya* on Acamabaro and Yuriria; the *Relación de Jilquilpan* on Chocondiran, Tarecuato and Perivan; the *Relación de Motines* on Aquila and Coalcoman; the *Relación de Taimeo* on Zinapecuaro; the *Relación de Tancitaro* on Tepalcatepec and Pinzandaro (Municipio Buenavista); the *Relación de Tuxpan* on Zapotlan and Tamazula; and the *Relación de Zirandaro* on Guayameo, Cuseo, Guetamo, and Cutzamala. *Relaciones* outside of the diocese of Michoacan yield information about the Tarascan territory. For the study of the Tarascan frontier the *Relación de Minas de Temazcaltepec* is important for information about Tuzantla. (Cline [1972a, 1972b] provides full inventories of the *Relaciones geográficas*.)

The eastern frontier settlements identified by these *relaciones* are Acambaro and Yuriria in the *Relación de Celaya*, Ajuchitlan in the *Relación de Asuchitlan*, and Cutzamala in the *Relación de Zirondaro* and the *Relación de Asuchtitlan*. Tuzantla is identified in the *Relación de Minas de Temazcaltepec* and Zinapecuaro is identified in the *Relación de Taimeo*.

The maps (*pinturas*) associated with these *relaciones* and published are of Acambaro, Yuriria (Yuririapundaro), and Tuzantla. Although the text of the *Relación de San Miguel y San Felipe de los Chichimecas* has been lost, the map referring to the "Gran Chichimeca," an area north of the Lerma River, has been published. (Robertson and Robertson 1972).

Bibliography

Acosta, Jorge R.
1939. Exploraciones argueológicas realizadas en la estado de Michoacán durante los años de 1937 y 1938. *Revista Mexicana de Estudios Antropológicos* 3(2):85-98.

Adams, Richard E.W.
1978. Routes of Communication in Mesoamerica: the Northern Guatemalan Highlands and the Peten. In *Mesoamerican Communication Routes and Cultural Contacts*, eds., T.A. Lee Jr. and C. Navarrete, pp. 27-36. Provo: New World Archaeological Foundation.

Ahler, Stanley A.
1979. Functional Analysis of Nonobsidian Chipped Stone Artifacts: Terms, Variables, and Quantification. In *Lithic Use-Wear Analysis*, ed. Brian Hayden. New York: Academic Press.

Allen, G.M.
1920. *Dogs of the American Aborigines*. Bulletin of the Museum of Comparative Zoology, Harvard University 63 (9): 431-517.

Armillas, Pedro.
1942-1944. Oztuma. Gro, fortaleza de los mexicanos en la frontera de Michoacán. *Revista Mexicana de Estudios Antropólogicos* 6(3):165-175.

Barlow, Robert.
1949. *The Extent of the Empire of the Culhua Mexica*. Ibero-Americana 28. Berkeley and Los Angeles: University of California Press.

Beaumont, Pablo.
1932. *Crónica de Michoacán* (1565), 3 Vols. México: Archivo General de la Nación.

Bell, Betty
1971. Archaeology of Nayarit, Jalisco, and Colima. *In Handbook of Middle American Indians*. Vol. 11, ed. R. Wauchope, pp. 694-767. Austin: University of Texas Press.

Benfer, Alice
1974. A Preliminary Analysis of the Obsidian Artifacts from Tula, Hidalgo. In *Studies of Ancient Tollan*, ed. R. Diehl. University

of Missouri Monographs in Anthropology 1:56-87.

Bennyhoff, James A.
1966. Chronology and periodization: Continuity change in the Teotihuacan Ceramic tradition. In *Onceava Mesa Redonda: Teotihuacan*, pp. 19-30. México: Sociedad Mexicana de Antropología.

Billington, R.A., ed.
1966. *The Frontier Thesis*. New York: Holt ,Rhinehart and Winston.

Brand, Donald
1943. An Historical Sketch of Geography and Anthropology in the Tarascan Region, part 1. *New Mexico Anthropologist* 7-8 (2):37-108.
1980. A Persistent myth in the Ethnohistory of Western Mexico. *Tlalocan* (10):419-436.

Carrasco, Pedro
1950. *Los Otomíes*. México: Instituto de Historia y Instituto de Antropología e Historia, Universidad Nacional Autónoma de México.

CETENAL
1976-1979. Topographic map series 1:50,000. México:Secretaría de Programacióy Presupuesto. D.G.I.A.I.
1976. Aerial photograph series 1:25,000. Mexico:Secretaría de Programación Presupuesto. D.G.I.A.I.

Cline, Howard F.
1972a. The relaciones geográficas of the Spanish Indies, 1577-1648. In *Handbook of Middle American Indians*. Vol. 12, ed., R. Wauchope, pp. 183-242. Austin: University of Texas Press.
1972b. The relaciones geográficas of Spain, New Spain and the Spanish Indies: an Annotated Bibliography. In *Handbook of Middle American Indians*. Vol. 12, ed., R. Wauchope, pp.370-395. Austin: University of Texas Press.

Cline, Howard with C.R. Edwards
1972. Appendix C. Memorandum of the items to which responses shall be made, and what the reports are to contain [1577]. In *Handbook of Middle American Indians*. Vol.12, ed., R.Wauchope, pp. 183-242. Austin: University of Texas Press.

Codice Ramirez
1878. In *Cronica mexicana*, ed. Jose M. Vigil México.

Cook de Leonard, Carmen
1955. Una 'maqueta' prehispanica. *El México Antiguo* 8: 169-189.

Compañia Mexicana Aerofoto
Aerial photographs B. Qro. and Z mor. series 1:20,000.

Cuevas, M.
1921-1928. *Historia de la iglesia en México, Tlalpan, Santa Julia y del Paso*, vol. 1. México.

Dibble, Charles E. and A.J.O. Anderson, trans.
1961. *History of the Things of New Spain* by B. de Sahagun, no. 14, pt.11. Santa Fe: School of American Research and the Museum of New Mexico.

Dumond, Don E. and F. Muller
1972. Classic to Postclassic in Highland Central Mexico. *Science* 175:1208-1215.

Durán, Diego
1967. *Historia de las Indias de Nueva España e islas de la tierra firme*. Vol. 2. México: Editorial Porrua.

Ellenberger, W., H. Baum and H. Dittrich
1956. An Atlas of Animal Anatomy for Artists. New York:Dover Publications.

Enciso, Jorge
1953. *Design Motifs of Ancient Mexico*. New York:Dover Press.

Estrada Balmori, E.
1947. Funeraria en Chupicuaro, Guanajuato. *Anales del Instituto* Nacional de Arqueología e Historia 3:79-84.

Flannery, Kent
1967. Vertebrate Fauna and Hunting Patterns. *In The Prehistory of the Tehuacan Valley: Environment and Subsistence*, ed., D.S. Byers, pp.132-177. Austin: University of Texas Press.

Florance, Charles
1982. Preliminary Archaeological Survey along the Lerma River in Southeast Guanajuato. Unpublished ms.

Frierman, Jay D., ed.
1969. *The Natalie Wood Collection of Precolumbian Ceramics from Chupicuaro, Guanajuato, Mexico at UCLA.* Los Angeles: University of California Press.

Gali, Ramon
1946. Archaeología de Tzintzuntzan, temporada IV. *Anales del Museo* Michoacano 4:50-62.

Gay, Carlo T.E.
1971. *Chalcatzingo*. Graz, Austria: Akademische Druck-U.

Gendorp, Paul
1972. Nueva zona arqueologica cerca de San Felipe los Alzati, Michoacán. Boletín Bibliográfica de Antropología Americana de Instituto Panamericano de Geografía e Historia 35:91-94.

Glass, John
1964. Catálogo de la colección de códices. Museo Nacional de Antropología. México: Instituto Nacional de Antropología e Historia.

Glass, John with D. Robertson
1975. A Census of Middle American Manuscripts. In *Handbook of Middle American Indians*. Vol. 14, ed., R. Wauchope pp. 81-252. Austin: University of Texas Press.

Goblet, Y.M.
1955. *Political Geography and the World Map*. New York: Frederick A. Praeger.

Goldberg, Neil
1975. De Rei Militari II. Unpublished ms. in files of author.

Gorenstein, Shirley
1973. *Tepexi el Viejo: a Postclassic Fortified site in the Mixteca-Puebla Region of Mexico*. Transactions of the American Philosophical Society 63 (1). Philadelphia: American Philosophical Society.

Gorenstein, Shirley and Helen Perlstein Pollard
1983. *The Tarascan Civilization: a Late Prehispanic Cultural System*. Vanderbilt University Publications in Anthropology, No. 28. Nashville, Vanderbilt University.

Harvey, H.R.
1972. The relaciones geográficas, 1579-1586. Native Languages. In *Handbook of Middle American Indians*. Vol.12, ed. R.Wauchope, pp. 279-323. Austin: University of Texas Press.

Herrejon Peredo, Carlos
1978. La pugna entre Mexicas y Tarascos. *Cuadernos de Historia de Universidad Autónoma del Estado de México* 1:11-47.

Hester, T.R., R.N. Jack, and A. Benfer
1973. Trace Element Analysis of Obsidian from Michoacan, Mexico: Preliminary Results. *Contributions, University of California Archaeological Research Facility* 18:167-176.

Hoffmeyer, A.B.
1979-1980. From Mediaeval Sword to Renaissance Rapier: the Evolution of Straight-bladed Thrusting Weapons. In *Art, Arms, and Armor*, vol.1, ed., R. Held, pp. 52-79. Chiasso: Acqua Fresca Editrice.

Holt, Homer Barry
1979. *Mexica-Aztec warfare: a developmental and cultural analysis.* Ph.D. dissertation. Ann Arbor: University Microfilms.

Jimenez Moreno, Wigberto
1944. La colonización evangelizació de Guanajuato en el siglo XVI. *Cuadernos Americanos* 3 (13):125-144.

Juan Palacios, Enrique
1945. Los petroglifos de Xilitla. *Anales del Museo Nacional de Arqueología, Historia, e Etnografía* 3:139-145.

Kelley, J.C.
1971. Archaeology of the Northern frontier: Zacatecas and Durango. In *Handbook of Middle American Indians*. Vol.11, ed. R. Wauchope, pp. 768-801. Austin: University of Texas Press.

Kristof, L.K.D.
1959. The nature of frontiers and boundaries. *Annals of the Association of American Geographers* 44:269-282.

Kubler, George
1948. *Mexican Architecture of the Sixteenth Century*. New Haven: Yale University Press.

Lattimore, Owen
1962. *Studies in Frontier History*. Paris: Mouton and Co.

Lewis, Kenneth E.
1984. *The American Frontier*. New York: Academic Press.

Lewenstein, Suzanne.
1981. Mesoamerican Obsidian Blades: an Experimental Approach to Function. *Journal of Field Archaeology* 8(2):175-188.

López Sarrelangue, Delfina
1965. *La nobleza indígena de Pátzcuaro en la Época virreinal*. México: Universidad Nacional Autónoma de Mexico.

Mateos Higera, Salvador
1947-1948. La pictografia tarasca. In *El occidente de México*. Mexico: Sociedad Mexicana de Antropología.
1948. Colección de estudios sumarios de los codices pictoricos indigenas. *Tlalocan* 11(4):374-375.

Matos Moctezuma, E.
1968. Piezas de saqueo procedentes de Jerácuaro, Gto. Boletín de Instituto Nacional de Antropología e Historia 33:30-35.

McBride, Harold W.
1969. The extent of the Chupicuaro tradition. In *The Natalie Wood Collection of Pre-Columbian Ceramics from Chupicuaro, Guanajuato, Mexico at UCLA*, ed. J.D. Frierman, pp. 33-49. Los Angeles: University of California Press.

McGovern, Thomas Howatt
1974. War for the Archaeologist. Unpublished ms. in files of the author.

Mena, R. and P. Aguirre
1927. La nueva zona arqueologica. *Revista Mexicana de Estudios Historicos* 1:55-64.

Moedano, Hugo
1946. La cerámica de Zinepácuaro, Michoacán. *Anales del Museo Michoacano* 2 (4):39-49.

Miller, D.H. and J.O. Steffen, eds.
1977. *The Frontier*. Norman: University of Oklahoma Press.

Mountjoy, Joseph B.
1974. Some Hypotheses Regarding the Petroglyphs of West Mexico. *Mesoamerican Studies* 9. Carbondale: Southern Illinois University Museum.

Ogilvy, Anne
1974. Laboratory Report of the Lithic Artifacts from Ziriziuaro, Taximaroa, Zitacuaro, and Tuzantla. Unpublished ms. in files of author.

Olsen, Stanley
1964. Mammal Remains from the Archaeological Sites, part 1, Southeastern and Southwestern United States. *Papers of the Peabody Museum of Archaeology and Ethnology* 61 (1). Cambridge: Harvard University.
1968. Fish, Amphibian and Reptile Remains from Archaeological Sites, part 1, Southeastern and Southwestern United States. *Papers of the Peabody Museum of Archaeology and Ethnology* 62 (2). Cambridge: Harvard University.

Paso y Troncoso, Francisco del, ed.
1905-1906. *Papeles de Nueva España,* Segunda serie, Geografia y Estadistica. Vols. 1,6,7. Madrid.
1945-1946. *Papeles de Nueva España,* vol. 7 suplemento. México.

Perkins, Dexter
1969. Fauna of Catal Huyuk: Evidence for Early Cattle Domestication in Anatolia. *Science* 164:177-179.

Perkins, Dexter and P. Daly
1968. A Hunters' Village in Neolithic Turkey. *Scientific American* 129 (5):96-106.

Piña Chan, Roman
1971. Preclassic or Formative Pottery and Minor Arts of the Valley of Mexico. In *Handbook of Middle American Indians*. Vol. 10, part 1, ed. R. Wauchope, pp.157-178. Austin: University of Texas Press.

Pollard, Helen Perlstein
1972. *Prehispanic Urbanism at Tzintzuntzan, Michoacan*. Ph.D. dissertation, Columbia University. Ann Arbor: University Microfilms.
1982. Ecological Variation and Economic Exchange in the Tarascan State. *American Ethnologist* 9 (2):250-268.

Ponce, Alonso
1968. *Relacióbreve y verdadera de algunos cosas de las muchas que sucedieron al padre Fray Alonso Ponce en las provincias de la Nueva España, siendo comisario general de aquelles partes* (1586). Guadalaljara: Corresponsalia del Seminario de Cultura Mexicana.

Pope, Saxon
1962. *Bows and arrows*. Berkeley and Los Angeles: University of California Press.

Porter (Weaver), Muriel
1956. *Excavations at Chupícuaro, Guanajuato, Mexico*. Transactions of the American Philosophical Society 46 (5). Philadelphia: American Philosophical Society.

Pounds, N.J.G. and S.S Ball
1964. Core Areas and the Development of the European States System. *Annals of the Association of American Geographers* 54:24-40.

Powell, Philip W.
1952. *Soldiers, Indians and Silver*. Berkeley and Los Angeles: University of California Press.

Prescott, J.R.V.
1965. *The Geography of Frontiers and Boundaries*. Chicago: Aldine.
1972. *Political Geography*. London: Methuen.

Purdy, Barbara
1975. Fractures for the Archaeologist. In *Lithic Technology: Making and Using Stone Tools*, ed. E. Swanson. The Hague: Mouton.

Rea, Alonso de la
1643. *Crónica de la orden de nuestro seráfico padre San Francisco. Provincia de San Pedro y San Pablo de Mechoacán en la Nueva España*. México.

Relación de Celaya (1580)
1945. *Papeles de Nueva España*, vol. 7, supplement, ed. F. del Paso y Troncoso. México.

Relaciones geográficas de la diocesis de Michoacán (1579-1580)
1958. Guadalajara.

Relación de Michoacán

also *Relación de las ceremonias y ritos y poblacióy gobierno de Michoacán* (1541). 1956. Reproducción facsimilar del Ms ç IV de El Escorial, Madrid. Madrid: Aguilar.

Relación geográfica de Tuzantla, Michoacán (1579)
1965. ed., H.F. Cline. *Tlalocan* 5:58-73.

Robertson, Donald and M.B. Robertson
1972. Catalog of Pinturas (maps) of the relaciones geográficas. In *Handbook of Middle American Indians*. Vol.12, ed. R. Wauchope, pp. 265-278. Austin: University of Texas Press.

Rojas, Pedro
1967. *Acambaro Colonial*. Mexico: Instituto de Investigaciones Esteticas, Univeridad Nacional Autónoma de México.

Roosevelt, Anna
1972. The Teotihuacan Figurine Tradition in the Preclassic of the Basin of Mexico. Unpublished ms. in files of the author.

Sabloff, Jeffrey and R.E. Smith
1968. The Importance of Both Analytic and Taxonomic Classification in the Type-variety system. *American Antiquity* 34:278-285.

Sahagun, Bernardino
1979. *Historia general de las cosas de Nueva España* (1570-1582). México: Editorial Porrua.

Salway, Peter
1965. *The Frontier People of Roman Britain*. London: Cambridge University Press.

Sanders, William T. Parsons, J.R. and R.S. Santley
1979. *The Basin of Mexico: Ecological processes in the evolution of a Civilization*. New York: Academic Press.

Savage, Jr., W.W. and S.I. Thompson, eds.
1972. *The Frontier*, Vol.2. Norman: University of Oklahoma Press.

Schoddube B., Otto
1965. Petroglifos del municipio de Parácuaro, Mich. *Boletín del Instituto Nacional de Antropología e Historia* 21:31-32.

Seler, Eduard
1908. *Gesammelte Abhandlungen zur Amerikanischen Sprach und Alterthumskunde,* vol. 3. Berlin: Behrend.

Shepard, Anna
1971. *Ceramics for the Archaeologist*. Carnegie Institution of Washington Publication 609. Washington, D.C.: Carnegie Institution of Washington.

Shotwell, J. Arnold
1955. An Approach to the Paleoecology of Mammals. *Ecology* 36 (2):327-337.

Smith, Robert E.
1971. The Pottery of Mayapan, 2 vols. *Papers of the Peabody Museum of Archaeology and Ethnology* 65. Cambridge: Harvard University.

Smith, R.E., Willey, G. and J.C. Gifford
1960. The Type-variety Concept as a Basis for the Analysis of Maya pottery. *American Antiquity* 25:330-340.

Snarskis, Michael
1974. Laboratory Report of the Ceramic Collection from Acambaro, Zirizicuaro, Taximaroa, Zitacuaro, and Tuzantla. Unpublished ms. in the file of the author.

Spores, Ronald and R. Hassig, eds.
1984. *Five Centuries of Law and Politics in Central Mexico*. Vanderbilt University Publications in Anthropology 30.

Suma de visitas de pueblos (1547-1550).
1905. *Papeles de Nueva España,* vol. 1, ed. F.del Troncoso y Paso. Madrid.

Tamayo, Jorge. with R.C.West
1964. The Hydrography of Middle America. In *Handbook of Middle American Indians*. Vol.1, ed. R.Wauchope, pp. 84-121. Austin: University of Texas Press.

Tezozomoc, Fernando de Alvarado
1878. *Crónica mexicana*. México.

Tolstoy, Paul
1958. *Surface Survey of the Northern Valley of Mexico*. Transactions of

the American Philosophical Society 48 (5). Philadelphia: American Philosophical Society.
1971. Utilitarian Artifacts of Central Mexico. In *Handbook of Middle American Indians.* Vol. 10, part 1, ed. R. Wauchope, pp.270-296. Austin: University of Texas Press.
1978. Western Mesoamerica before A.D. 900. In *Chronologies in New World Archaeology*, eds. R.E. Taylor and C.W. Meighan, pp. 241-284. New York: Academic Press.

Tolstoy, Paul and Louise I. Paradis.
1970. Early and Middle Preclassic Culture in the Basin of Mexico. *Science* 167: 344-351.

Torquemada, Juan
1723. *Primera parte de los veinte i un libros rituales i monarquia indiana*. Vol. 1. Madrid.

Tringham, Ruth and G. Cooper, G. Odell, B. Voytek, and A. Whitman
1974. Experimentation in the Formation of Edge Damage: A New Approach to Lithic Analysis. *Journal of Field Archaeology* 1:171-196.

Vaillant, George C.
1930. Excavations at Zacatenco. *Anthropological Papers of the American Museum of Natural History* 32:1-197.
1931. Excavations at Ticoman. *Anthropological Papers of the American Museum of Natural History* 32:200-439.
1935. Excavations at El Arbolillo. *Anthropological Papers of the American Museum of Natural History* 35:137-279.
1938. A correlation of archaeological and historical sequences in the Valley of Mexico. *American Anthropologist* 40:535-573.

Vargas, Fulgencio
1940. *Historia elemental del estado de Guanajuato*. México: Talleres Graficos.

Vivo Escoto, Jorge A.
1964. Weather and Climate of Mexico and Central America. In *Handbook of Middle American Indians*. Vol. 1, ed. R. Wauchope, pp. 187-215. Austin: University of Texas Press.

Wagner, Philip L.
1964. Natural Vegetation of Middle America. In *Handbook of Middle American Indians*. Vol.1, ed. R. Wauchope, pp. 216-264. Austin: University of Texas Press.

Warren, J. Benedict
1971. Fray Jerónimo de Acala: Author of the Relación de Michoacán. *The Americas* 27 (3):307-326.
1977. *La Conquista de Michoacán* 1521-1530. Morelia, México: Fimax Publicistas.

West, Robert
1964a. Surface Configuration and Associated Geology of Middle America. In *Handbook of Middle American Indians*. Vol.1, ed., R. Wauchope, pp. 33-83. Austin: University of Texas Press.
1964b. The Natural Regions of Middle America. In *Handbook of Middle American Indians*. Vol.1, ed. R. Wauchope, pp. 363-383. Austin: University of Texas Press.

APPENDIX I

Faunal Analysis

David Chodoff

The faunal remains were identified by comparison with published illustrations and descriptions (Olsen 1964, 1968, Flannery 1967, Allen 1920, and Ellenberger, Ditrich, and Brown 1956), by comparison with private study collections of Richard White, and by comparison with the faunal collection of the American Museum of Natural History. Molluskan remains were identified to the extent possible by Dr. Harold Feinberg of the American Museum of Natural History.

Because of the small size of the collection and because only a portion had a stratigraphic provenience, no attempt was made to determine the relative frequency of different species by, for example, calculating Minimum Number of Individuals (Shotwell 1959 and Flannery 1967) or by the more refined methods of Perkins and Daly (Perkins 1969, Perkins and Daly 1968).

The data are summarized in a series of tables showing the distribution of taxa by depth in the NE excavation units and the distribution of elements per taxon for certain taxa, specifically the distribution of deer elements in AC/C/NE/1 and 1^a and the distribution of cotton-tail remains in AC/C/NE/1. (Note: The data from the 3 subtrenches AC/C/NE/1, 1^a and 2 were combined and are noted as AC/NE/1 elsewhere. Level 16 is not indicated because no faunal remains were found in that level.

The faunal remains from Cerro el Chivo include a total of 1161 pieces of bone and shell. Of the material recovered 762 elements have been identified or are potentially identifiable and 399 are unidentifiable fragments. Where possible, elements have been identified as to genus and species. Where insufficient diagnostic features precluded classification at the species or genus level, elements are classified under more inclusive taxanomic levels, such as class, order and family. Where this was not possible because the size or some other aspect of the material limited the range of possibilities, categories such as Unidentifiable Small Mammal, Unidentifiable Medium Sized Mammal, and Unidentifiable Large Mammal are employed. The category Potentially Identifiable is used to cover those elements or fragments which might be identifiable given enough time and comparative material but which were not felt to warrant the necessary effort. The category Unidentifiable consists of scraps of bones where no hope for identification exists.

The following taxa, listed according to Class, Order, Family, and Genus/Species, are represented at Cerro el Chivo:

Mammalia

I. Artiodactyla

1. Cervidae (deer)
   a. Odocoileus sp?
2. Antilocapridae (antelope)*

3. Bovidae (sheep and goat)*

II. Carnivora

1. Canidae (dog)
   a. Canis sp? (domestic dog, coyote, wolf?)
   b. Canis familiaris (domestic dog)
2. Felidae

III. Lagomorpha

1. leporidae (rabbits)
   a. Sepus sp? (jackrabbits)
   b. Sylvilagus sp? (cottontails)

IV. Rodentia

1. Sciuridae (squirrels)
   a. Sciurus sp?
2. Cricetidae (mice and rats)
3. Geomyidae (gophers)
   a. Pappogeomys sp?

V. Edentata

1. Dasyopidae (armadillo)
   a. Dasypus novemcinctus

Amphibia

I. Salientia (frogs and toads)

Reptilia

I. Serpentes (snakes)
II. Chelonis (turtles)
III. Lacertilia (lizards)

Aves

I. Galliformes

1. Meleagrati (turkeys)
   a. Meleagris gallopavo

II. Psittaciformes (parrots)
   a. Ara militaris

Osteichthyes (bony fish)

Bivalves (clams)

I. Unioniendae (fresh water clams)

Gastropods (snails)

*Identification of Bovidae and Antilocapridae is not secure.

Description of Elements

The following is a description of elements by taxonomic category. In the case of taxa which were particularly well represented in certain excavation units, the distribution of the elements has been presented in table form and is not repeated here. All Molluskan remains are simply fragements of shell and are not described here.

Excavation Unit NW/1

Odocoileus sp?

Unidentifiable Large Mammal

6 nondescript fragments
8 long bone fragments
1 worked long bone fragment (see below)

Canidae

a right distal tibia
a canine tooth
a left scapula

Canis sp?

a canine tooth
a right pelvic fragment, including the acetabulum
a left maxilla with M^1, DP^4, DP^3, and C.
a metatarsal/metacarpal
two maxilla fragments, one with DP^4 and M^1.

Canis Familiaris

a right pelvic fragment including the acetabulum, and a fragment of a right maxilla with M^2, M^1, and P . Measurements taken on these teeth by Richard White were as follows:

Length of M^1_2	-17.0 mm
Length of M^2_4	-17.0 mm
Length of P^4	-17.5 mm

comparison of these results with measurement tables assembled by Allen (1920) indicates that the specimen

represents a large Indian dog referred to as "Xolitzcuinti."

Unidentifiable Medium Sized Mammal

a vertebra, probably canid, and a metatarsal/metacarpal

Leporidae

a right scapula and a mandibular fragment

Lepus sp?

2 distal femur epiphysis fragments
a left ulna and the distal half of a left humerus

Sylvilagus sp?

the proximal half of a left femur

Rodentia

the proximal half of a right tibia

Sciuridae

a right mandible with M_1, M_2, and M_3

Chelonia

Two adjacent peripherals of a carapace. These two matched one of two similar peripheral fragments in Level 9 and were glued to them two fragments from the peripherals of a carapace

Meleagris gallopavo

the proximal half of a right humerus

Potential Identifiable

one vertebra, possibly canid
one vertebral fragment
one phalange

Excavation Unit NW/2

Odocoileus sp?

one astragalus fragment

Unidentifiable Large Mammal

8 nondescript fragments
11 long bone fragments
3 nondescript fragments
2 rib fragments

Canidae

a left femur and the right proximal half of an ulna with the olecranon process missing
an axis vertebra

Canis sp?

3 fragments of a single left mandible with P_2 and P_3, and a lumbar vertebra
the middle portion of a right radius, the distal half of a left radius, and a phalange
a phalange
a left scapula

Canis familiaris

The remains of what is probably a single juvenile dog is represented by a total of 85 fragments, which break down as follows:

16 cranial fragments
5 mandibular fragments
20 loose teeth (deciduous and permanent represented)
6 vertebrae
1 right scapula
1 right proximal ulna
1 right distal humerus
4 long bone fragments
9 metatarsal/metacarpals
1 unidentified bone
21 miscellaneous scrap
85 Total

Richard White cut open the mandibular fragments in order to examine the permanent teeth. He took the following measurements:

Length of lower M_1^1	(left and right)	-17.0 mm
Length of upper M_1^1	(left and right)	- 9.5 mm
Width of upper M^1	(left and right)	-13.5 mm

According to White (personal communication) these teeth are as large as the largest individual dogs so far reported for Mesoamerica.

Sylvilagus sp?

one fragment of a right scapula including the glenoid fossa

Aves

one long bone fragment

Unidentifiable Medium Sized Mammal

one astragalus
one fragment, possibly vertebral, and nondescript fragment

Potentially Identifiable

one phalange

Excavation Unit SW/1

Odocoileus sp?

a thoracic vertebra with an unfused epiphysis indicating a young animal, and a pelvic fragment
a nearly complete rib and a tooth

Unidentifiable Large Mammal

25 nondescript fragments
1 long bone fragment used for a tool (see below), a long bone fragment and a fragment of a proximal ulna, both suggestive of Odocoileus sp?
1 rib fragment
5 long bone fragments
a long bone fragment worked on one end (see below)

Sylvilagus sp?

2 right mandibular fragments

Rodentia

a right innominate

Cricetidae

a left mandibular fragment

Dasypus Novemcinctus

a marginal scute of a carapace

Unidentified Small Mammal

5 metacarpal/metatarsal
a medial metatarsal/metacarpal

Salientia

pelvic fragments: a left tibio-fibula, a paraspheroid, and a fused astragalus/calcaneus
a right and left mandible
2 right distal humeri
a right scapular fragment
an ulna
a radius

Chelonia

3 fragments of carpace
2 fragments of plastron

Osteichthyes

a left dentary

Meleagris gallopavo

a 1st phalange of phalanx 2
a cranium with 4 vertebrae and the lower legs of a turkey were recovered. The elements present are:

1	cranium with beak articulated
1	atlas vertebra
1	axis vertebra
1	complete cervical vertebra
1	partial cervical vertebra
1	right tarsometatarsus
1	left tarsometatarsus
3	right 1st phalanges
3	right 2nd phalanges
3	right 4th phalanges
1	right 4th phalange
1	left 1st phalange
1	left 2nd phalange
3	unspecified phalanges
1	wing-shaped bone from larnyx area
36	unidentifiable scraps
59	Total

(See discussion under Butchering Techniques below.)

an unspecified phalange
a left proximal tibiotarsus

Aves

Level 8: a long bone fragment
Level 9: a phalange, a fragmentary portion of a long bone, and a sternum
Level 10: a fragment of a sacrum, and the central portion of a long bone
Level 12: a possible ulna; a dentary; a basicranium from a fish or reptile; a vertebral fragment; and a distal femur

Excavation Unit SE/1

Chelonia

1 fragment of plastron

Potentially Identifiable

1 cervical vertebra of a small to medium sized animal

Excavation Unit NE/1

Odocoileus sp?

Unidentifiable Large Mammal

Level 5: 3 nondescript fragments
Level 6: 5 long bone fragments
Level 7: 10 nondescript fragments
Level 8: 4 nondescript fragments
Level 9: 2 nondescript fragments
Level 10: 2 nondescript fragments
Level 11: 2 long bone fragments
Level 12: 12 long bone fragments, one of which is possibly worked, and 1 cranial fragment
Level 13: 5 long bone fragments, one of which is worked, and 1 cranial fragment
Level 14: 3 nondescript fragments
Level 15: 3 rib fragments

Carnivora

Level 9: the distal half of a large phalange suggesting a field

Canidae

Level 6: a portion of a proximal tibia with the end broken off
Level 7: a metacarpal/metatarsal

Canis sp?

Level 7: a left, fourth deciduous premolar
Level 15: a portion of right frontal bone, including supraorbital ridge

Unidentifiable Medium Sized Mammal

Level 7: a rib, possibly from a carnivore
Level 8: a rib, possibly from a carnivore
Level 9: 5 cranial fragments, possibly canid
Level 12: an innominate fragment, a vertebral fragment, and a metacarpal/metatarsal, all of which are probably candid
Level 14: 2 rib fragments

Leporidae

Level 12: a metacarpal/metatarsal, and a fragment of a left mandible

Lepus sp?

Level 7: the proximal half of an ulna
Level 10: a fragment of a right pelvis including the acetabulum
Level 12: a left distal humerus

Sylvilagus sp?

Sciuridae

Level 13: a complete left mandible with M_1 and M_3

Pappogeomy sp?

Level 5: a single upper incisor

Unidentifiable Small Mammal

Level 10: a vertebra
Level 12: a metacarpal/metatarsal and 3 rib fragments
Level 15: a rib fragment

Chelonia

Level 12: a fragment of plastron
Level 15: a fragment of plastron

Aves

Level 11: 2 long bone fragments
Level 12: a long bone fragment
Level 14: a small proximal right humerus

Potentially identifiable

Level 6: possible inner ear bone fragment
Level 7: a small fragment with some articular surfaces on it
Level 8: 2 distinctive fragments
Level 10: 2 fragments with a bit of articular surface
Level 11: a possible bird phalange; and an unfamiliar, but potentially identifiable element
Level 13: a phalange suggestive of a bird, a scapula fragment, and a tooth
Level 14: a phalange
Level 15: the distal half of a large phalange, and a fragment with a bit of articular surface.

Antilocapridae/Bovidae

Level 13: this level includes a left mandible with what appears to be pillared teeth indicating either Antilocapridae or Bovidae, though positive identification has not been made.

Excavation Unit NE/1[a]

Odocoileus sp?

Unidentifiable Large Mammal

Level B_1: 1 long bone fragment
Level D_2^1: 5 long bone fragments
Level D^2: 1 long bone fragment used as a tool (see below), and 40 nondescript fragments
Level D^3: 1 rib fragment and 5 long bone fragments
Level 11: 2 nondescript fragments
Level 13: 2 long bone fragments
Level 14: 1 long bone fragment
Level 15: 2 nondescript fragments

Canidae

Level 15: a thoracic vertebra

Canis sp?

Level D^2: a radius

Leporidae

Level D^2: a check tooth
Level D^3: an incisor
Level 13: a left mandibular fragment

Lepus sp?

Level D^4: a cervical vertebra, probably number 6 or 7
Level 13: a right distal tibia with a measured maximum distal width of 15.0 mm.

Sylvilagus sp?

Level 11: a left distal humerus
Level 15: a tibia/fibula fragment, and a right innominate fragment with acetabulum and pubic symphysis preserved

Unidentified Small Mammal

Level D^1: a left femur, possibly from a young squirrel
Level 14: 2 rib fragments and 1 long bone fragment
Level 15: a metatarsal/metacarpal; and a fragment, possibly from an ulna

Carnivora

Level D^2: a metacarpal/metatarsal

Serpentes

Level D^4: 8 articulated vertebra of a small snake

Chelonia

Level D^3: a costal fragment from a carapace

Aves

Level D^4: a long bone fragment possibly belonging to a turkey
Level 14: a nondescript fragment

Meleagris gallopavo

Level 13: a right tarsometatarsus

Potentially Identifiable

Level 14: a fragmentary right jugal with proportions suggesting a medium to large mammal
Level 15: the 1st phalange of an unidentified taxon

Excavation Unit NE/2

Odocoileus sp?

Layer E: 1 upper premolar
Layer D: 1 fragment of a proximal metapodial, symmetry undetermined
Layer C: 1 proximal metapodial and 1 astragalus
Layer B: a fragment of an ilium and 2 astragali
Layer A: 1 fragment of sacrum
Layer A: 2 Thoracic vertebrae, the head and neck of a right femur, a rib fragment, an antler fragment, and a fragment of metapodial

Unidentifiable Large Mammal

Layer F: 2 nondescript fragments
Layer E: 2 nondescript fragments
Layer C: 1 long bone fragment and 6 nondescript fragments
Layer B: 1 long bone fragment and 33 nondescript fragments, one of which appears to be worked (see below)
Layer A: 1 rib, 2 long bone fragment, and 7 nondescript fragments
Layer A: 3 rib fragments and 7 nondescript fragments
Depth provenience lacking: 1 nondescript fragment

Carnivora

Layer B: 1 canine tooth

Felidae

Layer A: 1 phalange, probably mountain lion

Canis sp?

Layer E: 1 metatarsal number 2 or number 4 symmetry undermined
Layer C: 1 right radius from either Canis familiaris or Canis latrans

Layer B: 1 basicranium from an immature animal
Depth Provenience lacking: 1 right scapula

Unidentifiable Medium Sized Mammal

Layer C: 1 nondescript fragment
Layer B: 2 cranial fragments and 1 nondescript fragment

Leporidae

Layer B: 1 left scapula, 1 metacarpal/metatarsal, and 1 central portion of the shaft of an ulna
Layer A: 1 vertebral fragment

Lepus sp?

Layer D: the proximal half of a right ulna
Layer D: 1 left scapula
Layer B: 1 left scapula
Layer B: 1 calcaneus
Layer A: 1 head of a right scapula, and 1 calcaneus

Sylvilagus sp?

Layer D: the distal half of a right humerus
Layer D: 1 left innominate
Layer A: 1 vertebra and 1 calcaneus
Layer A: 1 sacral vertebra, 1 head of a right scapula, 1 fragment from the blade of a scapula, 1 left innominate, 1 left tibia, and 1 calcaneus

Rodentia

Layer A: 1 metatarsal from a leaping rodent

Sciuridae

Layer A: 1 right humerus

Sciurus sp?

Layer F: 1 fragment of left mandible carrying M_1, M_2, and the roots of M_3, and P_4.

Unidentifiable Small Mammal

Layer B: 1 cranial fragment

Salientia

Layer B: 1 distal humerus

Serpentes

Layer B: 1 vertebra from a small snake (further identification precluded, as the element was sent back to Mexico in the Fall of 1974)

Chelonia

Layer E: 1 peripheral
Layer B: 1 peripheral
Layer A: 1 costal

Lacertilia

Layer B: 2 skull and jaw fragments from an unidentified lizard

Ara Militaris

Layer A: 1 right femur

Aves

Layer E: 3 fragments of ulna from a large bird, and 1 long bone
Layer C: 1 fragment from either pelvis or sternum
1 phalange from a large bird, probably turkey, and 1 cranial or vertebral fragment
Layer A: 1 fragment of femur shaft from a large bird showing the anterior intramuscular line, and 1 nondescript fragment
Layer A: 1 long bone from an unidentified long-legged bird; 1 carpo-metarpus from the anterior portion of the sternum of an unidentified bird, possibly a macaw, showing the exterior spine;
4 sternum fragments from an unidentified bird; and 6 nondescript fragments

Potentially Identifiable

Layer B: 8 bones from a small, immature animal; and 1 phalange possibly from a turtle
Layer A: 1 possible antler fragment

Worked Bone

Worked bone was present in all excavations except SE/1. NW/1 produced two pieces of worked bone. One piece is proximal half of a right turkey humerus which has been cut evenly and diagonally across the shaft. Most of the shaft bordering on the cut was smoothened and polished. The distal portion of the edge created by the cut has been slightly roughened by use. Maximum length is 60 mm., and the maximum proximal width is 35 mm.

The second is a small fragment from a large mammal long bone one end of which has been beveled from both sides to form a wedge-like edge. Most of this edge has been gnawed away by a rodent. The object has a length of 31 mm. Width of the worked end is 12mm. while the maximum width is 14 mm.

NW/1 produced one tool. This is a small splinter of bone, highly polished over most of its surface and beveled from one side at its narrow end to form a wedge. This working surface has been worn by use. The opposite end shows a clean but rough beveled surface, indicating that the piece was snapped off a larger segment of bone. The length of the fragment is 39 mm. The width at the worked end is 6 mm. with the maximum width being 8 mm.

SW/1 produced three pieces of worked bone. One bone is pointed at one end and beveled at the other to form a kind of combination awl and wedge. The tool was made on a large splinter from the long bone of medium to large-sized mammal. The tool was polished over most of its surface and the edges surrounding the marrow cavity have been rounded and smoothed. At its broad end the tool has been beveled by chipping on one side to form a wedge. The other end has been worked to a point. It is 81 mm. in length with a maximum width of 10 mm.

Another is a fragment of long bone, with epiphysis missing, of a medium to large-sized mammal. The bone was cut or chipped through just below the end forming an uneven circular edge which was subsequently lightly smoothed. The greatest diameter is 22 mm. and the depth is 13 mm. The third bone is the distal end of a deer metapodial without epiphysis. Part of the surface has been polished and the rest left rough. The bone was fractured, forming a diagonal cross section, one edge of which was rounded and polished and the other left rough. The piece may originally have been longer, perhaps forming part of an awl. In addition, the natural pattern on the distal end of the bone has been accentuated with cut marks. Its length is 60 mm. and the distal width is 26 mm.

NE/2 produced one piece of worked bone, a small fragment of large mammal bone from Strata C. It had been cut diagonally across its width (approx. 10 mm.) such that its length varies from approximately 15 mm. on one side to approximately 10 mm. on the other side. The edge formed by the cut is slightly concave and has been rounded and smoothed.

Butchering Techniques

The faunal material recovered from Cerro el Chivo shows surprisingly few butchering marks. A single right calcaneus from NE/1, Level 13, identified as Odocoilius sp? has one groove running across the medial surface of the sustentaculum which clearly represents a cut mark. This was undoubtedly made while attempting to sever tendons at this point on the hind leg. Other deer calcanei in the collection do not show marks in a similar location.

It was noticed that the only identifiable fragments of deer consist almost exclusively of elements such as the mandible, calcaneus, scapula and the ends of long bones which do not contain much marrow. Furthermore, much of the bone in the category called Unidentifiable Large Mammal consists of smashed and splintered long bone fragments which suggest that the long bones of large animals such as deer were broken for their marrow.

The turkey bones from SW/1, Level 9 provide insight into the techniques used in turky butchering and consumption. The bird in question, undoubtedly a single individual, is represented by his head and the first four cervical vertebrae of his neck, and his lower legs. The middle, meat bearing portion, is missing, having likely been consumed in some other location. The fourth cervical vertebra has been sliced through, and no lower vertebrae are present, indicating that the head was deliberately cut off. A cut mark on the right proximal tarsometatarsus probably resulted from the cutting of a tendon. The preservation of the wing-shaped bone from the larynx area, which is held in place by soft tissue, indicates that the head and neck were discarded with the skin and flesh intact, not cooked and eaten.

Charred or Baked Bone

Bone which has been either calcined, or charred or baked black, occurs sporadically in all trenches. With the exception of a left distal humerus from a jackrabbit in NE/1, Level 12, such bone consists of unidentifiable fragments.

Summary

Though the size of the sample precludes any statistical analysis, certain limited conclusions can be presented concerning the Acambaro faunal collection. It is clear, on the basis of the numerical representation of deer in the collection (62 fragments) and their meat weight in comparison to that of other animals represented, that the hunting of deer provided the main source of meat at Acambaro in the Chupicuaro phase. This conclusion should be tempered by the possibility that the large bones of deer might preserve better than the bones of smaller animals. If, however, the bones in the category Unidentifiable

Large mammal (256 fragments) are added to the deer bones on the assumption that the bones in that category are primarily from deer and related animals, the conclusion is considerably reinforced. Rabbits (65 fragments), dogs (114 fragments, 85 from one individual) and turkeys (64 fragments, 59 from one individual) also clearly contribute to the diet at Acambaro. Other animals, such as rodent, frogs, turtles, snakes, lizards, fish, snails, and shellfish are only sporadically represented.

DISTRIBUTION OF ELEMENTS FOR SYLVILAGUS SP.? IN AC/C/NE/1

	Mandible		Cervical Vertebra	Scapula			Whole Humerus		Distal Humerus		Innominate		Prox. Femur		Distal Femur		Proximal Tibia-Fibula		Distal Tibia-Fibula			Calcaneus		Total
AC/C/NE/1	L	R		L	U	R	L	R	L	R	L	R	L	R	L	R	L	R		U		L	R	
Levels 1-7																								0
Level 8					1										1					1		1		4
9																								0
10																								0
11		1*																						1
12				1	1			1		1	1		1				1			1		1			9
13		1																						1
14							1																	1
15			1		1					1														3
Total		2	1	1	1	2	1	1		2	1		1		1		1			2		2		19

*Complete, with all teeth.

Chart 12

PIECES PER TAXON FOR AC/C/NE/1 and 1[a] COMBINED, AND FOR AC/C/NE/2

AC/C/NE		Unidentifiable Large Mammal	Odocoileus (SP.?)	Antelocapridae	Carnivora Fam. Undet.	Felidae Genus Undet.	Canidae Genus Undet.	Canis (SP.?)	Unidentifiable Medium Sized Mammal	Leporidae Genus Undet.	Lepus (SP.?)	Sylvilagus (SP.?)	Rodentia Fam. Undet.	Sciuridae Genus Undet.	Sciurus (SP.?)	Pappogeomys (SP.?)	Dasypus Novemcinctus	Unidentifiable Small Mammal	Salientiae Fam. Undet.	Serpentes Fam. Undet.	Chelonia Fam. Undet.	Lacertilia Fam. Undet.	Melegris Gallopavo	Ara Militaris	Aves Order Undet.	Gastropods	Unionidae	Unidentifiable Shell	Potentially Identifiable	Unidentifiable	TOTAL
1[a]	1																														
Layer F Level	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0
F	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0
F	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0
F	4	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
E	5	6	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	5	12
D	6	10	1	–	–	–	1	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1	7	21
D	7	(27.5)	(8.5)	–	(.5)	–	(.5)	(1)	(1)	(.5)	(.5)	(2)	–	–	–	–	–	–	–	–	–	–	–	–	–	(1)	–	(1.5)	(L2)	(106.5)
D	8	55 (27.5)	17 (8.5)	–	1 (.5)	–	1 (.5)	2 (1)	2 (1)	1 (.5)	1 (.5)	4 (2)	–	–	–	–	–	–	–	–	–	–	–	–	–	2 (1)	–	3 (1.5)	24 (L2)	113 (106.5)
C	9	8	3	–	–	1	–	–	5	1	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	1	–	–	24	44
C	10	2	1	–	–	–	–	–	–	–	2	–	–	–	–	–	–	1	–	8	–	–	–	–	1	–	–	2	14	31
B	11	4	–	–	–	–	–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	2	–	3	–	2	21	34
B	12	14	4	–	–	–	–	–	3	2	1	9	–	–	–	–	–	4	–	–	1	–	–	–	1	–	–	–	–	7	46
B	13	9	1	1*	–	–	–	–	–	1	1	1	–	1	–	–	–	3	–	–	–	–	1	–	–	–	–	–	3	20	42
A	14	4	1	–	–	–	–	–	2	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	2	9	21
A	15	1	–	1	–	1	–	–	–	–	–	1	–	–	–	–	–	3	–	–	1	–	–	–	–	2	–	1	3	7	30
TOTAL		119	29	1	2	1	3	2	12	5	5	22	0	1	0	1	0	12	0	8	3	0	1	0	6	2	6	1	16	138	396
AC/C/NE/2 Depth Unreported		1	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	18	20
Layer	F	2	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3
	E	2	1	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	4	–	–	–	–	–	17
	D	–	1	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
	C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1
	B	41	5	–	1	–	–	2	4	3	2	2	–	–	–	–	–	1	1	1	1	2	–	–	2	–	–	1	9	58	136
	A	9	7	–	–	1	–	–	–	1	3	9	1	1	–	–	–	–	–	–	1	–	–	1	15	–	1	1	1	54	106
TOTAL		65	14	0	1	1	0	4	4	4	6	11	1	1	1	0	0	1	1	1	3	2	0	1	22	0	1	2	10	138	295

Levels 7 and 8 have been bracketed to give a single total.

Numbers in parentheses represent an average per level for 7 and 8.

Chart 13

Chart 14

ELEMENTS PER TAXON FOR AC/C/NE/1 and AC/C/NE/1[a]

AC/C/NE/1	Unidentifiable Large Mammal	Odocoileus (SP.?)	Antelocapridae	Carnivora Family Undet.	Felidae Genus Undet.	Camdae Genus Undet.	Canis (SP.?)	Unidentifiable Medium Sized Mammal	Leporidae Genus Undet.	Leprus (SP.?)	Sylvilagus (SP.?)	Sciuridae Genus Undet.	Pappogeomys (SP.?)	Unidentifiable Small Mammal	Serpentes Fam. Undet.	Chelonia Fam. Undet.	Meleagris Gallo Pavo	Aves Order Undet.	Gastropods	Unionidae	Unidentifiable Shell	Potentially Identifiable	Unidentifiable	TOTAL
Level 1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0
2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0
3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0
4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0
5	3	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	5	9
6	5	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	2	9
7	10	6	–	–	–	1	1	1	–	1	–	–	–	–	–	–	–	–	–	2	–	1	7	30
8	4	6	–	–	–	–	–	1	–	–	4	–	–	–	–	–	–	–	–	–	–	2	9	26
9	2	2	–	–	1	–	–	5	–	–	–	–	–	–	–	–	–	–	–	1	–	–	20	31
10	2	1	–	–	–	–	–	–	–	1	–	–	–	1	–	–	–	–	–	–	–	2	10	17
11	2	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	2	–	3	–	2	18	28
12	13	3	–	–	–	–	–	3	2	1	9	–	–	4	–	1	–	1	–	–	–	–	7	44
13	7	1	1*	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	3	17	31
14	3	1	–	–	–	–	–	2	–	–	1	–	–	–	–	–	–	1	–	–	–	1	3	12
15	3	–	–	–	–	–	1	–	–	–	3	–	–	1	–	1	–	–	–	–	1	2	6	18
TOTAL	54	20	1	0	1	2	2	12	2	3	19	1	1	6	0	2	0	4	0	6	1	14	104	255
AC/C/NE/1[a]																								
Layer F	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0
E	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
D	5	1	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	5	12
D	41	5	–	1	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	8	57
C	6	1	–	–	–	–	–	–	1	–	–	–	–	–	–	1	–	–	–	–	–	–	4	13
C	–	–	–	–	–	–	–	–	–	1	–	–	–	–	8	–	–	1	–	–	–	–	4	14
B	2	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	3	6
B	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
B	2	–	–	–	–	–	–	–	1	1	–	–	–	3	–	–	1	–	–	–	–	–	3	11
A	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1	6	9
A	2	1	–	–	–	1	–	–	–	–	2	–	–	2	–	–	–	–	2	–	–	1	1	12
TOTAL	61	9	0	1	0	1	1	0	3	2	3	0	0	6	8	1	1	2	2	0	0	2	34	137

*Possible Ovis.

DISTRIBUTION OF ELEMENTS FOR ODOCOILEUS SP.? IN
AC/C/NE/1 AND IN AC/C/NW/1

AC/C/NE 1	Occipital	Temporal L	Temporal R	Maxilla L	Maxilla R	Mandible L	Mandible R	Molar	Premolar	Axis	Cervical	Thoracic	Lumbar	Rib L	Rib R	Scapula L	Scapula U	Scapula R	Distal Humerus L	Distal Humerus R	Prox. Ulna L	Prox. Ulna R	Innominate U	Prox. Femur L	Prox. Femur R	Prox. Tibia L	Prox. Tibia R	Calcaneus L	Calcaneus R	Astragalus U	Distal Metapodial U	Last Phalange	Antler Tyne	TOTAL
Level 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
6	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
7	-	-	-	1^{+}	-	1	1	-	3	-	-	-	-	-	-	-	1	1	1	-	1	1	-	1	-	-	-	1	2	1	-	1	-	17
8																																		
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	3
10	-	-	-	-	-	-	1^{+}	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	4
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
14	-	-	-	-	-	-	-	-	-	1^{+}	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
15	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
TOTAL	0	0	0	1	0	1	2	1	3	1	0	0	1	0	2	0	1	1	1	1	1	1	0	1	0	0	0	1	3	1	1	3	1	29
AC/C/NW																																		
TOTAL	1	0	1	0	0	0	0	0	0	1	2	0	1	0	0	1	1	0	1	0	0	0	3	0	0	1	0	0	0	0	0	0	0	13

Levels 7 and 8 have been bracketed to give a single combined total.
L=Left, R=Right, U=Symmetry Undetermined.
Fractions indicate matching segments of the same piece found in separate levels.

+Carries P2, P3, + P4 and M1, M2
+Carries P2, P3, + P
+Small size suggests possible Mazama.

Chart 15

APPENDIX II

Lerma River Basin Survey

Helen Perlstein Pollard

The Lerma River Basin survey extended from the Solis Dam on the east to the village of Chamacuaro on the west; it extended between one to four kilometers on either side of the river, depending on the width of the river basin (Figure 7). The Lerma River and Cerro el Chivo were the primary determinants of the survey limits. The land adjacent to the river and within view of Cerro el Chivo was included; the north-south limits on either side of the river were fixed by the width of the river basin. The eastern limit was the Solis Dam and the western limit was Chamacuaro, a total east-west distance of almost twenty kilometers.

The survey was accomplished primarily on foot. All sites were located on field maps based on air photos at a scale of 1:20,000. Representative samples of ceramic and lithic material were collected from each site.

Description of Sites

Six archaeological sites were located in the approximately 40 km.^{2} that were surveyed.

AC/2

Location: On the highest part of the hill on which the modern village of Chamacuaro is located 30 m. above the river basin. The area of artifact cover includes the rear of house lots on the eastern fringe of the village and continues up the hill to the north.

Description: A moderate to heavy density of artifact concentration. The site is located in plowed fields separated by modern stone walls. The size of the site is estimated at 178 m. (N-S) and 154 m. (E-W) with significant artifact concentration decreases towards the edges. No structures or features were found. One figurine is included in the collection.

Remarks: Informants indicated this was only the artifact concentration in town. The site has excellent views of the Lerma River below, sites 3, 4, and 5, and of Cerro el Chivo.

Artifact Samples: Ceramic: 267
Lithic: 65

AC/3

Location: In the fields immediately north and west of the modern Chamacuaro cemetery, along the banks of the Lerma River.

Description: A light density of artifacts located in plowed fields and an

eroding sandy river bank. The site extends 260 m. (N-S) and 120 m. (E-W) and there is no indication of any depth (as viewed in river bank cuts). No structures or features were noted.

Remarks: While the entire artifact concentration is light, the proportion of lithic material appeared high.

Artifact Samples: Ceramic: 133
Lithic: 93

AC/4

Location: On a small flat-topped hill across the Lerma from the modern town of Chamacuaro cemetery, along the banks of the Lerma River.

Description: A moderate artifact concentration including several metate and mano fragments covers the hill top and steep slopes to the river. Immediately southeast of the center of the site is a low artificial mound, about 6-7 m. high, and a lower, smaller mound extending from its north face. They appear to be rubble-core mounds which have been extensively damaged. Large holes are visible throughout. Some bones were observed and informants said some burials were found within the structure. Boulders covered the site and may be the remains of walls or building foundations. The site extends 125 m. (N-S) and 150 m. (E-W).

Remarks: There is an excellent view of the river basin east to Cerro el Chivo and west beyond the survey zone. Sherds found on or within the rubble of the mounds were collected separately and labeled 4A.

Artifact Samples:				
Ceramic:	217 (27-4A)	Total:	244
Lithic:	20 (1-4A)		21

AC/5

Location: On the hill above and southwest of the modern town of Inchamacuaro. The site is 50 m. above the river basin and covers the top and north slopes of the hill facing the river.

Description: A moderate-dense surface concentration of artifacts located in plowed and unplowed fields separated by stone walls. The higher and western portion of the site contains the remnants of two rubble core mounds, about 5 m. in height. They have been extensively potholed so that measurements are approximate. Immediately around the mounds is the densest artifact concentration. Informants stated that burials had been found in the southern portion of the site, and potholes covered the surrounding fields. It is from this portion of the site that two Tarascan Yaguarato Complex pipe stems were found. The site extends 118 m. (N-S) and 75 m. (E-W) and is covered with small basalt nodules.

Remarks: There is an excellent view of the entire Lerma River basin from the Solis Dam to Chamacuaro.

AC/7

Location: The site is located on the north side of the Lerma east of Cerro el Chivo. It is about 500 m. from the river on a low rise which is sloping downward towards the north and away from the river. Site 7 is located about 30 m. above the river.

Description: A medium-light artifact concentration in plowed fields. There was no indication of any structures or features although informants indicated that large "ollas" and bones had been found there. In the gullying along the edges of the fields a thin soil covering a tepetate layer was observed. The site extends 206 m. (E-W) and 65 m. (N-S).

Remarks: The river is not visible from this site. The uniformity of the ceramics at this site is remarkable--undecorated and incised pieces almost exclusively. An unusually large number of vessel handles and supports was observed.

AC/8

Location: The site is located on the north side of the Lerma River east of Cerro el Chivo about 25 m. above the river. The land slopes gently to the north and away from the river.

Description: A light-medium artifact concentration in plowed fields. No structures or features were observed although informants indicated bones and "ollas" had been found in the site area by pothunters. The site extended 43 m. (N-S) and 11 m. (E-W). Where profiles in areas adjacent to the site were available, no depth of artifacts were observed.

Remarks: The river is not visible from the site although there are good views of Cerro el Chivo and the Solis Dam.

Site Location

In the 100% survey, only six site were located in the 40 km.^{2} between the modern Solis Dam and the village of Chamacuaro. The sites clustered in two groups: sites 2, 3, 4, and 5 along the western edgw of the survey zone between Chamacuaro and Inchamacuaro and sites 7 and 8 east of Cerro el Chivo. The lack of sites between Cerro el Chivo and Chamacuaro can be explained either (1) as a result of the erosion of sites by the river flow or (2) due to a lack of settlement in the zone. As the survey progressed it became increasingly clear that the second was the probable explanation. The survey area west of Cerro el Chivo and east of Chamacuaro (except for AC/5 which is on a hill is below 1850 m. in elevation). Informants stated that in the previous September all the low-lying land along the river had been flooded up to 1 m. deep. In 1958 flooding even threatened the city of Acambaro. Before the construction of the Solis Dam, therefore, the probability of frequent flooding of the low-lying areas may have made permanent settlements impossible here. The possibility that flood-deposited soil overlay sites is not seriously entertained. Due to the large-scale agriculture of this flood plain, ditches abound, and despite continuous checking, we were not able to find any suggestion of overlain sites.

With the exception of site 3, all sites are located well above the river (10-50 m. above present July river level). Site 3 is located adjacent to the modern Chamacuaro cemetery, suggestion that it too is not subject to the periodic flooding of the basin. In addition, sites 2, 3, 4, and 5 are located along the slopes of the lower hills which cross the western portion of the basin. This pattern is probably more widespread in the region. Three sites which were located by informants, but outside the survey limits, have been plotted on Figure 7 (a triangle indicates their positions). Again these sites are above the river flood plain, at the base or lower slopes of neighboring mountains. Site location for sites 2, 3, 4, 5 was probably governed by use of the river for a water resource, height above the river for safety from flooding, and the relation to easily worked agricultural fields along hillslopes.

Sites 7 and 8 were located well above the river, but in land sloping away from the river itself. The river is not visible, although accessible from these sites and the sites are in relatively flat, open land. This suggests that site selection east of Cerro el Chivo depended on different factors.

Site Interpretation

Site 2: The heavy artifact density combined with the presence of both coarse and fine ceramic groups, a range of lithic artifacts and many stones (similar to those used in house foundations) suggest the presence of a small habitation zone. In size the settlement probably approximated a hamlet.

Site 3: The light artifact concentration, lack of indication of structures, features, or depth of deposit suggests a small, scattered occupation. The relatively high proportion of lithic material observed in the field and represented by the sample collection, particularly unretouched flakes, may indicate some particular use of this zone for the production of tools. This may be related to the location of this site adjacent to the river and low-lying fields.

Site 4: The moderate artifact concentration presence of both coarse and fine ceramic groups, manos and metates, many basalt stones littering the site, and lithic material suggest a small habitation zone. The two mounds had burial and/or ceremonial functions. This site may have been a small center for religious activity for sites 2, 3, and 4. The fragments of one or more vessels of Paracuaro Vegetable Tempered pottery were found here. If they are salt-holding vessels, as comparative data suggest, they may reflect the use of the Lerma River as a route for resource distribution and they may indicate trading activity at site 4. In addition, site 4 has an excellent view of the entire Lerma River basin.

Site 5: The moderate artifact concentration, presence of coarse and fine ceramics, range of lithic material (particularly unretouched flakes) and littering of basalt stones over the site suggest a small habitation zone on the level of a hamlet. The presence of two mounds and reputed burial areas suggests religious functions for the hamlet. It may have served as a center for other settlements located in the mountain slopes immediately south of Inchamacuaro.

Site 7: The medium-light artifact concentration, lack of observable depth of deposit, presence of some lithic material and a limited range of ceramic material suggest a small habitation zone without any structures or features noted.

Site 8: This small and light-medium concentration of artifacts contains both coarse and fine ceramics and a range of lithic material. The lack of structures or features suggest a small habitation zone.

The Artifacts

Each site that was surveyed was also sampled for ceramic and lithic artifacts. The purpose of the sampling was to determine first the chronological position of each site in relation to the occupation of Cerro el Chivo and second the range of lithic and, particularly, ceramic artifacts utilized. With these goals in mind a limited stratified random sample was taken from each site. The stratification emphasized rim sherds, decorated sherds and ceramic modes known from Cerro el Chivo and Tzintzuntzan. In addition, a range of both decorated and plain sherds was included. All areas of the site were sampled, and no attempt was made to get proportional representation of modes observed on the surface. In unusual cases, such as at site 7, if one ceramic group was heavily represented it would also be quite frequent in the sample--although to prevent duplication--in diminished numbers.

The ceramic samples are listed below, along with the smaller samples that were actually analyzed in the United States. Again, the smaller samples were made for the purpose of preventing duplication and represent rough proportions of the original samples, but not of the artifacts at the sites. In the case of site 3, the main sample collection was misplaced while sorting and packing was done. It was subsequently found, but at that time we were short of room for export samples and only a few sherds were taken. An attempt was made to include the range of observable models.

Sample:		Sample Analyzed:	
	AC2 = 267		124
	AC3 = 133		25
	AC4 = 244		87
	AC5 = 271		99
	AC7 = 285		85
	AC8 = 152		46

The ceramic analysis that follows was made according to the type-variety method. Wares, groups and potential types were isolated. The analysis was designed to conform to that done for the ceramics on Cerro el Chivo. For the full description of groups found also on Cerro el Chivo, refer to that ceramic analysis.

CERAMIC COMPLEX Chupicuaro
WARE Chupicuaro
GROUP Chupicuaro Painted
POTENTIAL TYPE Painted E
DISTRIBUTION (QUANTITY) AC 2 (4) AC 4 (1)
QUANTITY 5

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
  RIM PROFILE Tecomate (incurving)
  RIM DIAMETER 18 cm.
  WALL THICKNESS 0.5-1.1 cm.

DECORATION
  TECHNIQUE Painted
  MOTIF Wide red lines and thin parallel black lines
  COLOR 10 R/3/4 dusky red; 7.5 YR/2/0 black

COMPARATIVE DATA See Chivo

CERAMIC COMPLEX Chupicuaro
WARE Chupicuaro Buff
GROUP Chupicuaro Painted
POTENTIAL TYPE Painted H
DISTRIBUTION (QUANTITY) AC 2 (1) AC 3 (1)
QUANTITY 2

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
  WALL THICKNESS 0.6-1.0 cm.

DECORATION
  TECHNIQUE Painted on exterior and interior
  MOTIF Red and black lines on buff
  COLOR 10 R/4/6 red; 10 R/4/4 weak red; 7.5 YR/2/0 black

CERAMIC COMPLEX Chupicuaro
WARE Chupicuaro Buff
GROUP Chupicuaro Painted
POTENTIAL TYPE Painted A
DISTRIBUTION (QUANTITY) AC 2 (6)
QUANTITY 6

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
RIM PROFILE Out-slanting
RIM DIAMETER 18-36 cm.
WALL THICKNESS 1.0 - 1.4 cm.

DECORATION
TECHNIQUE Painted
MOTIF Red body with buff channelled areas on exterior body
COLOR 10 R/4/6 red

COMPARATIVE DATA See Chivo

CERAMIC COMPLEX Chupicuaro
WARE Chupicuaro Buff
GROUP Chupicuaro Painted
POTENTIAL TYPE Painted B
DISTRIBUTION (QUANTITY) AC 2 (10) AC 4 (2) AC 8 (2)
QUANTITY 14

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
RIM PROFILE Out-slanting, out-curving everted
RIM DIAMETER 16-24 cm.
WALL THICKNESS 0.8-1.1 cm.
SUPPORTS Hollow

DECORATION
TECHNIQUE Painted
MOTIF V or chevron, parallel red lines in squares within squares; often solid red exterior; rim and lip often continues pattern.
COLOR 10 R/4/6 red

COMPARATIVE DATA See Chivo

CERAMIC COMPLEX Chupicuaro
WARE Chupicuaro Buff
GROUP Chupicuaro Painted
POTENTIAL TYPE Painted D
DISTRIBUTION (QUANTITY) AC 2 (2) AC 5 (1) AC 8 (1)
QUANTITY 4

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
RIM PROFILE Out-slanting, everted
WALL THICKNESS 0.9-1.1 cm.

DECORATION
TECHNIQUE None
MOTIF None

COMPARATIVE DATA See Chivo
Similar design in Chupicuaro Polychrome from Jerecuaro, Gto.

CERAMIC COMPLEX Chupicuaro
WARE Chupicuaro Buff
GROUP Chupicuaro Painted
POTENTIAL TYPE Painted I
DISTRIBUTION (QUANTITY) AC 2 (2)
QUANTITY 2

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
RIM PROFILE Composite silhouette
WALL THICKNESS 0.6-0.8 cm.
OTHER Tool impression on lip and raised ridge encircling the body

DECORATION
TECHNIQUE Painted and tool impressed
MOTIF Appliques lines with ridging
COLOR 10 R/4/6 red

COMPARATIVE DATA See Chivo

CERAMIC COMPLEX Chupicuaro
WARE Chupicuaro Buff
GROUP Chupicuaro Painted
POTENTIAL TYPE Painted K
DISTRIBUTION (QUANTITY) AC 2 (2)
QUANTITY 2

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
RIM PROFILE Straight with flattened lip
WALL THICKNESS 1.0 cm.

DECORATION
TECHNIQUE Painted red and black
MOTIF All over red on lip and interior with thin black lines parallel to rim

COLOR 10 R/4/6 red and 7.5 YR/2.5/0 black

COMPARATIVE DATA A new potential type. Not found in Chivo collection.

CERAMIC COMPLEX Chupicuaro/Solis
WARE Chupicuaro Brown Ware
GROUP Chupicuaro Monochrome
DISTRIBUTION (QUANTITY) AC 2 (1) AC 4 (2) AC 5 (4) AC 7 (1) AC 8 (2)
QUANTITY 10

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
RIM PROFILE Everted, composite silhouette
RIM DIAMETER 28 cm.
WALL THICKNESS 0.4-1.2 cm.
SUPPORTS Solid Tapering

DECORATION
TECHNIQUE None or applique with tool impression
MOTIF Small shallow circles and lines impressed, applique ridge and circle

COMPARATIVE DATA Some new motifs found here - applique circles. See Chivo

WARE Chupicuaro Brown Ware
DISTRIBUTION (QUANTITY) AC 4 (1) AC 5 (2)
QUANTITY 3

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
WALL THICKNESS 0.6 cm.
SUPPORTS 2 - hollow, 4.5 cm. long and solid tapering 4-5 cm. long

COMMENTS Thick and heavy. Eroded and clouded surface makes identification difficult.

COMPARATIVE DATA See Chivo Collection

CERAMIC COMPLEX Mixtlan/Lerma
WARE Jungapeo coarse
GROUP Iramuco Polychrome
DISTRIBUTION (QUANTITY) AC 2 (3)
QUANTITY 3

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
RIM PROFILE Everted
RIM DIAMETER ca. 15 cm.
WALL THICKNESS 0.8 - 1.0 cm.
OTHER Composite silhouette body

DECORATION
TECHNIQUE Painted
MOTIF Zoned red and black with black lines and cross-hatching
COLOR 10 R/4/6 red, 10 R/4/4 weak red; 7.5 YR/2/0 black

COMMENTS Eroded surfaces or lack of rims make type assignment difficult

COMPARATIVE DATA See Chivo collection

CERAMIC COMPLEX Mixlan/Lerma
WARE Junagapeo Coarse
GROUP Iramuco Polychrome
POTENTIAL TYPE A
DISTRIBUTION (QUANTITY) AC 2 (3) AC 3 (1) AC 5 (2)
QUANTITY 6

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
RIM PROFILE Bolstered rim (see Chivo)
RIM DIAMETER 34 cm. (Most not measurable)
WALL THICKNESS 0.8-1.0 cm.

DECORATION
TECHNIQUE Painted
MOTIF Broad bands, narrow black parallel lines on interior, exterior and lip
COLOR 10 R/4/6 red; 7.5 YR/2/0 black

COMPARATIVE DATA See Chivo collection

CERAMIC COMPLEX Mixtlan
WARE Jungapeo Coarse
GROUP Ario Black on Red
DISTRIBUTION (QUANTITY) AC 2 (1) AC 3 (1)
QUANTITY 2

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
WALL THICKNESS 0.6-0.8 cm.

DECORATION
TECHNIQUE Painted
MOTIF Black thin lines; wave motif in white enclosed by black parallel lines
COLOR 7.5 YR/2/0 black; 10 YR/8/1; 7/2/0 (light gray) white

COMPARATIVE DATA See Chivo collection

CERAMIC COMPLEX Mixtlan
WARE Jungapeo Coarse
GROUP Ario Black on Red
POTENTIAL TYPE B
DISTRIBUTION (QUANTITY) AC2 (1) AC 3 (1)
QUANTITY 2

PASTE See Chivo

SURFACE FINISH
SLIPPED/UNSLIPPED Slipped
COLOR 10 R/4/4 weak red
TECHNIQUE-TEXTURE Medium luster, smoothing and polishing marks visible

FORM
WALL THICKNESS 0.5-0.7 cm.

DECORATION
TECHNIQUE Painted black and white on red slip
MOTIF Uneven black lines or zones with white dots on black - interior and exterior
COLOR 7.5 YR/2/0 black; 10 YR/8/1 White

COMMENTS A new type from those identified on Chivo.

COMPARATIVE DATA See Chivo

CERAMIC COMPLEX Lerma
WARE Rincon Sandy
GROUP Paso Ancho Red Rim
POTENTIAL TYPE A
DISTRIBUTION (QUANTITY) AC 2 (4)
QUANTITY 4

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
RIM PROFILE Incurving with thickened rim; straight
RIM DIAMETER 18-20 cm.
WALL THICKNESS 0.5-0.9 cm.

DECORATION
TECHNIQUE Painted
MOTIF Rim and lip zoned red; step motif
COLOR 10 R/4/6 red

COMPARATIVE DATA See Chivo

CERAMIC COMPLEX Lerma
WARE Rincon Sandy
GROUP Paso Ancho Red Rim
POTENTIAL TYPE B
DISTRIBUTION (QUANTITY) AC 3 (1)
QUANTITY 1

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
  RIM PROFILE Outcurving
  WALL THICKNESS 0.5-0.8 cm.

DECORATION
  TECHNIQUE Painted and tool impressed
  MOTIF Red rims; shallow tool impression on lip
  COLOR 10 R/4/4 weak red

COMPARATIVE DATA See Chivo

CERAMIC COMPLEX Lerma
WARE Rincon Sandy
GROUP Paso Ancho Red Rim
POTENTIAL TYPE C
DISTRIBUTION (QUANTITY) AC 5 (1)
QUANTITY 1

PASTE See Chivo

SURFACE FINISH
  SLIPPED/UNSLIPPED Slipped
  COLOR 2.5 YR/3/4 dark reddish brown (maroon)
  TECHNIQUE-TEXTURE Smoothed, polished - slip cracked and uneven

FORM
  RIM PROFILE Outsloping
  RIM DIAMETER 30+ cm.
  WALL THICKNESS 0.9 cm.

DECORATION
  TECHNIQUE None

COMMENTS A new type based on variation in vessel form.

COMPARATIVE DATA See Chivo

CERAMIC COMPLEX Lerma
WARE Rincon Sandy
GROUP Paso Ancho Red Rim
DISTRIBUTION (QUANTITY) AC 2 (1)
QUANTITY 1

PASTE See Chivo

SURFACE FINISH See Chivo
TECHNIQUE-TEXTURE Unpainted zones are matte; painted zones - low luster

FORM
WALL THICKNESS 0.7 cm.

DECORATION
TECHNIQUE Painted
MOTIF Zoned red
COLOR 2.5 YR/4/6 red

COMMENTS Sherd is burnt. Classification difficult.

COMPARATIVE DATA See Chivo

CERAMIC COMPLEX Lerma
WARE Trinidad Smudged
GROUP Garita Black-Brown
DISTRIBUTION (QUANTITY) AC2 (4) AC 4 (1) AC 5 (3)
QUANTITY 8

PASTE
COLOR Also 7.5 YR/7/4 pink (see Chivo)

SURFACE FINISH
SLIPPED/UNSLIPPED Unslipped
COLOR 10 YR/6/2; 5/1/0 gray; 7.5 YR/6/4 light brown; 7.5 YR/7/4 pink
TECHNIQUE-TEXTURE Smoothed; wiping marks visible; most eroded - matte

FORM
RIM PROFILE outsloping, outcurving
RIM DIAMETER 25-30 cm.
WALL THICKNESS 0.4-0.6 cm.
SUPPORTS 1 solid tapering 4.3 cm. long

DECORATION
TECHNIQUE None or gouging with fingernail on wedge (1)
MOTIF Seems random gouging on exterior body

COMPARATIVE DATA Close to Garita Black-Brown B, but seem less finished. May be body sherds to incised vessels. See Chivo.

CERAMIC COMPLEX Lerma
WARE Trinidad Smudged
GROUP Garita Black-Brown
POTENTIAL TYPE A
DISTRIBUTION (QUANTITY) AC 3 (1)
QUANTITY 1

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
RIM PROFILE Straight
WALL THICKNESS 0.5 cm.

DECORATION
TECHNIQUE None

COMPARATIVE DATA See Chivo

CERAMIC COMPLEX Lerma
WARE Trinidad Smudged
GROUP Garita Black-Brown
POTENTIAL TYPE B
DISTRIBUTION (QUANTITY) AC 2 (1) AC 3 (1) AC 4 (3) AC 5 (2)
QUANTITY 7

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
RIM PROFILE Straight, outslanting
RIM DIAMETER 16 cm.
WALL THICKNESS 0.3-0.6 cm.

DECORATION
TECHNIQUE Shallow incision; 1 sherd with white pigment in incisions
MOTIF Parallel lines; loops; chevrons, panels of zigzags and parallel lines;

COMMENTS Unsure of sherd with white pigment on incisions. May be new type. Need larger sample.

COMPARATIVE DATA See Chivo

CERAMIC COMPLEX Lerma
WARE Santa Ana Sandy
GROUP Cantinas Red-Orange
POTENTIAL TYPE A
DISTRIBUTION (QUANTITY) AC 2 (1) AC 4 (4) AC 5 (8) AC 8 (1)
QUANTITY 14

PASTE See Chivo

SURFACE FINISH
SLIPPED/UNSLIPPED Self-slipped, eroded
COLOR 10 YR/7/4, 3, 2 very pale brown, light gray
TECHNIQUE-TEXTURE Some interiors polished; others and exterior, compacted, matte

FORM
RIM PROFILE Straight, outslanting
RIM DIAMETER 18 cm.
WALL THICKNESS 0.4-0.9 cm.
SUPPORTS Small solid "nubbin" 1.6-2.0 cm.
OTHERS Possible some flat bottoms

DECORATION
TECHNIQUE Painted-unevenly
MOTIF Parallel lines - often oblique; cross-hatching; banding
COLOR 10 R/4/6/ red; 2.5 YR/4/8 red - watery looking

COMPARATIVE DATA See Chivo

CERAMIC COMPLEX Lerma
WARE Santa Ana Sandy
GROUP Cantinas Red-Orange
POTENTIAL TYPE B
DISTRIBUTION (QUANTITY) AC 5 (1)
QUANTITY 1

PASTE See Chivo

SURFACE FINISH
SLIPPED/UNSLIPPED Self-slipped or thin slip
COLOR 7.5 YR/6/4 light brown
TECHNIQUE-TEXTURE Wiped - marks highly visible; smoothed and eroded

FORM
RIM PROFILE Straight - possibly slightly incurving
RIM DIAMETER 30+ cm.
WALL THICKNESS 1.0 cm.

DECORATION
TECHNIQUE Painted
MOTIF Interior rim (2 cm.), lip and exterior rim (1.5 cm.) and bands
COLOR 2.5 YR/6/8 and 10 R/5/6 red - watery red-orange combination

Comments Close to Cantinas Red-Orange A, but new vessel form and surface.

COMPARATIVE DATA See Chivo. A new type suggested.

CERAMIC COMPLEX Lerma (?)
WARE Rincon Sandy
GROUP Fresno Red-Orange
DISTRIBUTION (QUANTITY) AC 4 (1)
QUANTITY 1
PASTE See Chivo

SURFACE FINISH See Chivo
TECHNIQUE-TEXTURE Matte; grainy; scraped - paint adheres poorly due to uneven surface

FORM
RIM PROFILE outsloping (see below)
WALL THICKNESS 0.7 cm.

DECORATION
TECHNIQUE Painted; tool impression on lip
MOTIF Tool impression on lip, red paint on interior rim lip and exterior body in wide bands
COLOR 10 R/5/8 red.

COMMENTS New group - not on Chivo

COMPARATIVE DATA See Chivo. Seems like a combination of modes from Paso Ancho Red Rim B and Cantinas Red Orange A. No new modes.

CERAMIC COMPLEX Lerma (?)
WARE Trinidad Smudged
GROUP Prieto Zoned Red
DISTRIBUTION (QUANTITY) AC 2 (1)
QUANTITY 1

PASTE
COLOR 10 YR/6/4 light yellow brown
TEXTURE Fine
FIRING Incomplete

SURFACE FINISH
SLIPPED/UNSLIPPED Slipped
COLOR 10 YR/7/3 + 6/4 very pale brown and light yellowish brown
TECHNIQUE-TEXTURE Smooth, polished but eroded

FORM
RIM PROFILE Composite silhouette
WALL THICKNESS 0.8 cm.
OTHER

DECORATION
TECHNIQUE Painted
MOTIF Zoned paint, bands (interior 4), trapezoid within each other
COLOR 10 R/4/6 red

COMMENTS The surface is like Encarnacion Red Zoned A, but different paste. Motifs are like Cantinas Red-Orange A.

COMPARATIVE DATA See Chivo. Appears to be Lerma Complex modes arranged differently on sherd.

CERAMIC COMPLEX Lerma (?)
WARE Inchamacuaro Coarse
GROUP Inchamacuaro Red-Orange
DISTRIBUTION (QUANTITY) AC 5 (1)
QUANTITY 1

PASTE
  COLOR 7.5 yr/6/4 light brown
  TEXTURE Coarse to medium, large white, pink (sherds ?) and clear inclusions, very compact - almost layered
  FIRING Incomplete

SURFACE FINISH
  SLIPPED/UNSLIPPED Slipped - thick slip
  COLOR 7.5 YR.7/4 - 6/4 pink to light brown
  TECHNIQUE-TEXTURE Smooth; wiping marks on interior; polished exterior

FORM
  RIM PROFILE Straight
  WALL THICKNESS 0.7 cm.

DECORATION
  TECHNIQUE Painted - watery paint
  MOTIF Lip and 0.3 cm. band
  COLOR 2.5 YR/6/8 and 10 R/5/6 red

COMPARATIVE DATA Possibly a variant of Cantinas Red-Orange but slipped and polished (uneroded variant?) -- different paste.

CERAMIC COMPLEX Lerma (?)
WARE La Vega Pink
GROUP La Vega Cracked Red
DISTRIBUTION (QUANTITY) AC 4 (1)
QUANTITY 1

PASTE
  COLOR 10 YR/5/2 - 4/2 grayish brown and dark grayish brown
  TEXTURE Medium
  FIRING Complete

SURFACE FINISH
  SLIPPED/UNSLIPPED Slipped
  COLOR 7.5 YR/7/4 Pink; 6/2 pinkish gray
  TECHNIQUE-TEXTURE Smooth, probably polished but eroded and matte now

FORM
  RIM PROFILE Straight
  WALL THICKNESS 0.95 cm.
DECORATION
  TECHNIQUE Painted - cracked paint surface
  MOTIF Lip and interior slanted parallel lines - poorly executed
  COLOR 10 R/4/6 red

COMMENTS Similar to Encarnacion in decorative modes.

COMPARATIVE DATA See Chivo - Encarnacion Red Zoned

CERAMIC COMPLEX Lerma (?)
WARE Aporo Cream Coarse Slipped
GROUP El Maguey Red Rim
DISTRIBUTION (QUANTITY) AC 2 (8) AC 3 (2)
QUANTITY 10

PASTE See Chivo

SURFACE FINISH
  SLIPPED/UNSLIPPED Slipped - some may have none
  COLOR 7.5 YR/6/4 light brown
  TECHNIQUE-TEXTURE Wiping mark visible; smooth low luster

FORM
  RIM PROFILE Outcurving or everted
  RIM DIAMETER 25-30+ cm.
  WALL THICKNESS 0.8-1.1 cm.

DECORATION
  TECHNIQUE Tool impression; painted (sloppy application)
  MOTIF Paint on rim and interior; tool impression on lip
  COLOR 10 R/4/6 red, 2.5 YR/5/6 red

COMMENTS May be possible to separate into types A and B
Type A - tool impressed and painted AC 2 (6) AC 3 (1)
Type B - painted only AC 2 (2) AC 3 (1)

COMPARATIVE DATA A new group of ware on Chivo. Surface features like Paso Ancho.

CERAMIC COMPLEX Lerma (?)
WARE Aporo Cream Slipped
GROUP Jaral Black on Red
DISTRIBUTION (QUANTITY) AC 2 (1)
QUANTITY 1

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
RIM PROFILE Straight
WALL THICKNESS 0.8 cm.

DECORATION
TECHNIQUE Painted red and black, poorly executed
MOTIF All over red on exterior with black parallel lines
COLOR 10 R/4/6 red; 7.5 YR/3/0 black

COMMENTS A new group, not in Chivo Collection.

COMPARATIVE DATA See Chivo collection - this group not on Chivo but decorative modes similar to Lerma Complex.

CERAMIC COMPLEX Lerma (?)
WARE Aporo Cream Slipped Coarse
GROUP San Ramon Eroded
DISTRIBUTION (QUANTITY) AC 2 (9) AC 8 (1)
QUANTITY 10

PASTE See Chivo

SURFACE FINISH
SLIPPED/UNSLIPPED Slipped, thickly applied, powdery when eroding
COLOR 2.5 YR/4/8 red; 10 R/4/6 red
TECHNIQUE-TEXTURE Smoothed, eroded most

FORM
RIM PROFILE Incurved, composite silhouette
RIM DIAMETER c. 12 cm.
WALL THICKNESS 0.7-1.0 cm.
SUPPORTS 1 hollow leg with mold lines evident
OTHER

DECORATION
TECHNIQUE None

COMMENTS I have considered the red as a slip. What is a paint in Encarnacion type A is similar.

COMPARATIVE DATA See Chivo, Encarnacion

CERAMIC COMPLEX Lerma
WARE Aporo Cream Slipped Coarse
GROUP Encarnacion Red Zoned
DISTRIBUTION (QUANTITY) AC 3 (1) AC 4 (1) AC 5 (1)
QUANTITY 3

PASTE
COLOR 10 YR/6/2, 7/3, 6/3 pale brown light brownish gray
TEXTURE Medium-coarse, grainy matrix with blocky quartz, white and red inclusions
FIRING Complete and incomplete

SURFACE FINISH
SLIPPED/UNSLIPPED Slipped
COLOR 7.5 YR/7/3, 6/4 pale and light brown
TECHNIQUE-TEXTURE Wiped, scraped; smoothed and polished; eroded

FORM
RIM PROFILE Straight Lip
WALL THICKNESS 0.7-0.8 cm.
SUPPORTS Small solid nubbin
OTHER Flat bottom; convex wall bowls indicated

DECORATION
TECHNIQUE Painted (thick cover)
MOTIF All over and exterior zoned red
COLOR 10 R/4/6 red

COMMENTS May be A or B or a new type based on vessel form.

COMPARATIVE DATA See Chivo

CERAMIC COMPLEX Lerma
WARE Aporo Cream Slipped Coarse
GROUP Encarnacion Red Zoned
POTENTIAL TYPE A
DISTRIBUTION (QUANTITY) AC 2 (10) AC 3 (1) AC 4 (3) AC 5 (3) AC 7 (9)
AC 8 (6)
QUANTITY 32

PASTE
COLOR 10 YR/7/3 very pale brown; 10 YR/6/3 pale brown
TEXTURE Coarse
FIRING Complete and incomplete

SURFACE FINISH
SLIPPED/UNSLIPPED Slipped
COLOR 10 YR/7/3, 6/4 light yellowish brown
TECHNIQUE-TEXTURE Smoothed, polished to high luster; most eroded

FORM
RIM PROFILE Incurving; outsloping; everted; some with thickened interior
RIM DIAMETER ? - 28 cm.
WALL THICKNESS 0.6-1.0 cm.
SUPPORTS Hollow tapering; solid straight (4 cm. long, 2.2 cm. wide)
OTHER 1 possible handle (circular cross-section 1.5 cm.) or loop leg

DECORATION
TECHNIQUE Painted and some plastic decoration
MOTIF Paint: rim, circle, oblique lines, zones of red; series of "bumps" on interior and exterior (see below) or ridging of exterior rim
COLOR 10 YR/4/1 dark gray; 10 R/4/6 red

COMMENTS May be possible to separate into two varieties;
Variety a - as described above
Variety b - with black paint outlining red or black lines over red

COMPARATIVE DATA See Chivo. Many more vessel forms observed than in Chivo collection.

CERAMIC COMPLEX Lerma
WARE Aporo Cream Slipped Coarse
GROUP Encarnacion Red Zoned
POTENTIAL TYPE B
DISTRIBUTION (QUANTITY) AC 2 (3) AC 4 (2) AC 8 (2)
QUANTITY 7

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
RIM PROFILE Composite silhouette (flattened S-shape)
WALL THICKNESS 0.5-1.1 cm.

DECORATION
TECHNIQUE Painted
MOTIF Red rim, all-over red, cross-hatching on exterior
COLOR 10 R/4/6 red, 5 YR/4/4 reddish brown

COMPARATIVE DATA See Chivo

CERAMIC COMPLEX Lerma
WARE Aporo Cream Slipped Coarse
GROUP Encarnacion Red Zoned
POTENTIAL TYPE C
DISTRIBUTION (QUANTITY) AC 3 (1)
QUANTITY 1

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
WALL THICKNESS 0.3 cm.
OTHER Convex wall bowl

DECORATION
TECHNIQUE Negative (resist) decoration
MOTIF Interior and exterior - steps
COLOR 7.5/2/0 black

COMMENTS Traces of red suggest possibly a zoned red paint also was applied.

COMPARATIVE DATA Compared to Tzintzuntzan negative (Yaguarato Complex) the negative is grayer and paler in color. See Chivo

CERAMIC COMPLEX Acambaro/Yaguarato
WARE Querenda White
GROUP Ojo de Agua
POTENTIAL TYPE Ojo de Agua Plain (A)
DISTRIBUTION (QUANTITY) AC 2 (12) AC 3 (6) AC 4 (10) AC 5 (18) AC 8 (2)
QUANTITY 48

PASTE
COLOR 7.5 YR/6/4 light brown, 5 YR/6/6 reddish yellow
TEXTURE Fine-medium, compact
FIRING Generally incomplete - gray core, clouding

SURFACE FINISH
SLIPPED/UNSLIPPED Slipless or self-slipped
COLOR 7.5 YR/6/4 light brown, 10 YR/5/8 yellowish brown
TECHNIQUE-TEXTURE Wiped, smooth, polished - but many eroded and matte

FORM
RIM PROFILE Straight, composite silhouette "S" - everted, outsloping
RIM DIAMETER 15-25+ cm.
WALL THICKNESS 0.4-0.8 cm.
SUPPORTS Rattle Leg - mammiform - 3.0 cm. long, 2.2 cm. wide at base
OTHER Convex wall bowls

DECORATION
TECHNIQUE Most undecorated - a few with incision and punching
MOTIF Thin parallel lines on interior; punctate or short lines along lip

COMMENTS These sherds are same in paste, surface finishing and form as those of Ojo de Agua group at Tzintzuntzan, Mich. At Tzintzuntzan, however, there were few undecorated and no incised sherds. Therefore, the type proposed here-Plain-is new. One sherd may have traces of white paint (AC 2). One characteristic feature of this ware is the manner in which it erodes - with smoothed edges and exposed green-gray cores.

COMPARATIVE DATA See Chivo and Tzintzuntzan (Pollard 1972)

CERAMIC COMPLEX Acambaro/Yaguarato
WARE Querenda White
GROUP Ojo de Agua
POTENTIAL TYPE Ojo de Agua Red (B)
DISTRIBUTION (QUANTITY) AC 2 (1) AC 8 (1)
QUANTITY 2

PASTE See previous page

SURFACE FINISH
SLIPPED/UNSLIPPED Slipped
COLOR 10 R/4/6 red
TECHNIQUE-TEXTURE See previous page

FORM See previous page

DECORATION
TECHNIQUE Either none or the red rim and exterior is painted; appears to be a slip even though not all-over

COMMENTS Almost all of this group at Tzintzuntzan was red slipped (painted?).

COMPARATIVE DATA See Tzintzuntzan (Pollard 1972) and Chivo

CERAMIC COMPLEX Acambaro
WARE Canje Coarse
GROUP Copandero Excised
POTENTIAL TYPE A
DISTRIBUTION (QUANTITY) AC 2 (3) AC 5 (5) AC 7 (12) AC 8 (2)
QUANTITY 22

PASTE See Chivo

SURFACE FINISH
SLIPPED/UNSLIPPED Self-slipped
COLOR 7.5 YR/6/4 light brown; 5 YR/6/8; 7/8 reddish yellow; 10 YR/6/2 light brownish gray

TECHNIQUE-TEXTURE Smooth, polished - especially good luster in sherds with reddish-yellow surface color

FORM
RIM PROFILE Straight, outslanting
RIM DIAMETER 22 cm. (one sherd)
WALL THICKNESS 0.5-0.8 cm.
SUPPORTS Short solid (4.2 cm. long, 1.8 cm. diameter)
OTHER Grater bottom (AC 5)

DECORATION
TECHNIQUE Incision and excision
MOTIF Geometric, rectilinear (see Chivo); both narrow parallel lines and cross-hatching in zoned areas
COMMENTS Extends range of surface color for those sherds with zoned cross-hatching - reddish yellow

COMPARATIVE DATA See Chivo. Includes and extends surface color range on Chivo. Decoration range unchanged.

CERAMIC COMPLEX Acambaro
WARE Canje Coarse
GROUP Copandero Excised
POTENTIAL TYPE 40
DISTRIBUTION (QUANTITY) AC 4 (1) AC 5 (1)
QUANTITY 2

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
RIM PROFILE Outslanting
WALL THICKNESS 0.8-1.0 cm.

DECORATION
TECHNIQUE None

COMPARATIVE DATA See Chivo

CERAMIC COMPLEX Acambaro
WARE Canje Coarse
GROUP Blanco Eroded
POTENTIAL TYPE B
DISTRIBUTION (QUANTITY) AC 2 (2) AC 4 (1) AC 5 (2)
QUANTITY 5

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
RIM PROFILE Straight, outsloping
WALL THICKNESS 0.5-0.7 cm.

DECORATION
TECHNIQUE Painted
MOTIF Broad bands, zoned areas; some all-over thin red paint
COLOR 2.5 YR/4/8 red

COMPARATIVE DATA See Chivo

CERAMIC COMPLEX Acambaro
WARE Bejucos Coarse
GROUP Iglesias Eroded
DISTRIBUTION (QUANTITY) AC 2 (3) AC 4 (9) AC 5 (5) AC 7 (13) AC 8 (7)
QUANTITY 37

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
RIM PROFILE Everted, outslanting, everted with thickened interior-incurving
WALL THICKNESS 0.7-1.3 cm.
SUPPORTS Solid tapering (3.2, 2.2 cm. long); cylindrical solid (3-7 cm. long), hollow tapering, possible loop legs
OTHER Flat base - strap handle

DECORATION
TECHNIQUE Occasional slip (or very thick, sloppy paint)
MOTIF None
COLOR 7.5 YR/8/4, 7/4 pink

COMMENTS Unusually high proportion of handles and supports at site 7 and in sampled collection (14 supports).

COMPARATIVE DATA See Chivo

CERAMIC COMPLEX Acambaro
WARE Bejucos Coarse
GROUP Iglesias Eroded
POTENTIAL TYPE A
DISTRIBUTION (QUANTITY) AC 2 (1) AC 4 (3) AC 7 (2) AC 8 (1)
QUANTITY 7

PASTE See Chivo

SURFACE FINISH
SLIPPED/UNSLIPPED Slipped - (very sloppy application)
COLOR 7.5 YR/7/4 pink
TECHNIQUE-TEXTURE Wiped, not smooth; matte - very eroded

FORM
RIM PROFILE Outslanting (possibly everted)
RIM DIAMETER ? - 30+ cm.
WALL THICKNESS 0.9 -1.4 cm.
SUPPORTS Tapering solid (3.5 cm. long); loop leg
OTHER Miscellaneous fragment

DECORATION
TECHNIQUE Painted (on some); pressed grooves in single piece (see below)
MOTIF Interior rims - no zoning or motifs
COLOR 10 YR/8/1 - white (powdery, flaking)

COMMENTS A new type in Iglesias Eroded Group based on the use of white paint.

COMPARATIVE DATA See Chivo. Extends range of decoration.

CERAMIC COMPLEX Acambaro
WARE Purua Orange
GROUP Buena Vista Orange
DISTRIBUTION (QUANTITY) AC 2 (2) AC 4 (3) AC 5 (2) AC 7 (8)
QUANTITY 15

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
RIM PROFILE Straight, outslanting, everted
RIM DIAMETER 13-28+ cm.
WALL THICKNESS 0.5-1.0 cm.
SUPPORTS Solid straight (5.6 cm. long, 1.1 cm. diameter)

DECORATION
TECHNIQUE None

COMMENTS No incising so unable to tell if Buena Vista A or B.

COMPARATIVE DATA See Chivo collection

CERAMIC COMPLEX Acambaro
WARE Purua Orange
GROUP Buena Vista Orange
POTENTIAL TYPE A
DISTRIBUTION (QUANTITY) AC 4 (7) AC 5 (1) AC 7 (30) AC 8 (1)
QUANTITY 39

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
RIM PROFILE Straight, outslanting, sharp break interior
RIM DIAMETER 20-25+ cm.
WALL THICKNESS 0.6-0.9 cm.

SUPPORTS Straight solid (3.5 - 9.0 cm. long; 1.5-2.9 cm. diameter); loop solid

OTHER Possible wide flat handle or part of loop leg - 4.5 cm. wide x 1.2 cm. cross section

DECORATION
TECHNIQUE Incised lines, applique circle with incision
MOTIF See Chivo

COMMENTS Many supports - especially from Site 7. The applique circle is unknown from Chivo collection 0.5 cm. thick applique.

COMPARATIVE DATA See Chivo. Applique extends range of decorative techniques.

CERAMIC COMPLEX Acambaro
WARE Purua Orange
GROUP Buena Vista Orange
POTENTIAL TYPE B
DISTRIBUTION (QUANTITY) AC 4 (1) AC 7 (4)
QUANTITY 5

PASTE See Chivo

SURFACE FINISH See Chivo

FORM
RIM PROFILE Straight, slight outslanted
RIM DIAMETER 22+ cm.
WALL THICKNESS 0.6-1.0 cm.
DECORATION
TECHNIQUE Finger grooves on exterior (generally) parallel to rim
MOTIF Much eroded

COMPARATIVE DATA See Chivo collection

CERAMIC COMPLEX Yaguarato
WARE Tarerio Cream
GROUP Jaracuaro Polychrome
DISTRIBUTION (QUANTITY) AC 5 (1) AC 3 (1)
QUANTITY 2

PASTE
COLOR 2.5 YR/4/8 red; 5 YR/6/6, 5/6 reddish yellow
TEXTURE Fine-medium, compact with red, white, black and clear inclusions
FIRING Complete

SURFACE FINISH
SLIPPED/UNSLIPPED Slipped
COLOR 2.5 YR/6/6 light red, 5 YR/6/4, 5/4 reddish brown
TECHNIQUE-TEXTURE Smoothed, polished

FORM
RIM PROFILE Everted
WALL THICKNESS 0.3-0.5 cm.
OTHER One is a fragment of a mini-bowl (see Pollard 1972)

DECORATION
TECHNIQUE Painted, negative
MOTIF White zoned interior, red bands on white
COLOR 10 R/4/6, 2.5 YR/4/8 red; 5 YR/8/1, 2 white, pinkish white, 5 YR/4/1 dark gray

COMMENTS Motif (continued) - white dots and lines on red or negative interior

COMPARATIVE DATA See Tzintzuntzan (Pollard 1972)

CERAMIC COMPLEX Yaguarato
WARE Tarerio Cream
GROUP San Andres Polychrome
DISTRIBUTION (QUANTITY) AC 5 (2)
QUANTITY 2

PASTE See Tarerio Cream, above

SURFACE FINISH
SLIPPED/UNSLIPPED Unslipped
COLOR 5 YR/6/4 light reddish brown
TECHNIQUE-TEXTURE Smooth, polished

FORM
WALL THICKNESS 0.5-0.6 cm.

DECORATION
TECHNIQUE Painted - red, white and negative
MOTIF Zoned red and white, white bands (see below)
COLOR 10 R/5/8, 2.5 YR/4/8 red; 10 YR/8/1, 5 YR/8/1 white; 5 YR/2.5/1 black

COMMENTS One sherd has negative. May represent different types.

COMPARATIVE DATA See Tzintzuntzan (Pollard 1972)

CERAMIC COMPLEX Yaguarato
WARE Tarerio Cream
GROUP Pastorela Red
DISTRIBUTION (QUANTITY) AC 3 (1) AC 4 (1)
QUANTITY 2

PASTE See Tarerio Cream

SURFACE FINISH
SLIPPED/UNSLIPPED Slipped
COLOR 2.5 YR/4/6 red, 10 R/3/6 dark red
TECHNIQUE-TEXTURE Smoothed, polished - high luster

FORM
RIM PROFILE Straight (tapered lip)
WALL THICKNESS 0.5 cm.
OTHER

DECORATION
TECHNIQUE Painted - white or undecorated
MOTIF White lines and interior bands
COLOR 5 YR/8/1, 2 white

COMPARATIVE DATA See Tzintzuntzan (Pollard (1972)

CERAMIC COMPLEX Yaguarato
WARE Tariacuri Brown
GROUP Santa Ana Polychrome
DISTRIBUTION (QUANTITY) AC 5 (2)
QUANTITY 2

PASTE
COLOR 5 YR/6/, 4/6 reddish yellow
TEXTURE Fine, grainy; black, clear, and sherd inclusions
FIRING Complete and incomplete

SURFACE FINISH
SLIPPED/UNSLIPPED Slipped
COLOR 2.5 YR/6/6 light red (cream)
TECHNIQUE-TEXTURE Smoothed, polished

FORM
WALL THICKNESS 0.4 cm.
SUPPORTS Minibowl leg - 2.0 cm. long (see Pollard 1972)
OTHER Fragment of a minibowl

DECORATION
TECHNIQUE Painted red and white
MOTIF Zoned red and white with red on white in part
COLOR 2.5 YR/4/6 red, 10 R/5/8 red; 5 YR/8/1 white

COMMENTS Both sherds are from miniature vessels common in high status residential/ritual zones of Tzintzuntzan

COMPARATIVE DATA See Tzintzuntzan (Pollard 1972)

CERAMIC COMPLEX Yaguarato
WARE Yaguarato Cream
GROUP San Pablo Polychrome
DISTRIBUTION (QUANTITY) AC 5 (1) AC 8 (1)
QUANTITY 2

PASTE
  COLOR 7.5 YR/6/4 light brown
  TEXTURE Fine; red, sherd, clear and black inclusions
  FIRING Complete

SURFACE FINISH
  SLIPPED/UNSLIPPED Slipped
  COLOR 7.5 YR/5/4, 6/4 brown (cream)
  TECHNIQUE-TEXTURE Smoothed, polished

FORM
  RIM PROFILE Everted
  WALL THICKNESS 0.3-0.5 cm.
  OTHER A fragment of a minibowl

DECORATION
  TECHNIQUE Painted, one incised line
  MOTIF Exterior bands, rim, zoned red and lines
  COLOR 2.5 YR/3/6, 4/6, 6/8 dark-light red

COMPARATIVE DATA See Tzintzuntzan (Pollard 1972)

WARE Obrajuelo Brown
GROUP Las Jicamas Incised
DISTRIBUTION (QUANTITY) AC 3 (1)
QUANTITY 1

PASTE
COLOR 7.5 YR/6/4, 5/2 light brown, brown
TEXTURE Fine-medium, compact
FIRING Incomplete

SURFACE FINISH
SLIPPED/UNSLIPPED Unslipped
COLOR 7.5 YR/6/4 light brown - 7.5 YR/6/2 pinkish gray
TECHNIQUE-TEXTURE Smoothed, polished; exterior scraping of clay when wet

FORM
RIM PROFILE Outcurving - slight thickened lip
RIM DIAMETER ca. 24 cm.
WALL THICKNESS 0.6 cm.
OTHER Flat bottom

DECORATION
TECHNIQUE Painted red - thin and poorly applied; incision - uneven
MOTIF See below; paint overlaps incisions
COLOR 10 R/5/6, 4/6 red

COMMENTS Very poorly executed. New group and ware. Not in Chivo collection.

COMPARATIVE DATA Motifs similar to San Martin Red/Buff incised (Tolstoy 1958: 26-37). Probably Acambaro in date.

CERAMIC COMPLEX
WARE Loreta Polished
GROUP E1 Verdin Maroon
DISTRIBUTION (QUANTITY) AC 2 (1) AC 3 (1) AC 4 (1) AC 5 (1)
QUANTITY 4

PASTE
COLOR 7.5 YR/6/4 light brown
TEXTURE Medium, compact; black, white, clear and possibly sherd inclusions
FIRING Incomplete and complete

SURFACE FINISH
SLIPPED/UNSLIPPED Unslipped
COLOR 7.5 YR/5/2, 5/4 brown
TECHNIQUE-TEXTURE Smoothed, polished to high luster

FORM
RIM PROFILE Straight
WALL THICKNESS 0.6-0.7 cm.

DECORATION
TECHNIQUE Painted red and blackened, incised-shallow, thin parallel lines
MOTIF Red on lip and exterior band; unzoned related to incision; solid black interior
COLOR 10 R/3/4 dusky red, 10 R/3/6 dark red; 2.5 YR/2.5/0 black

COMMENTS Black is not a paint but appears reduced and burnished. Has Lerma modes.

COMPARATIVE DATA Not in Chivo collection

CERAMIC COMPLEX
WARE Loreta Polished
GROUP Tortuga Red
DISTRIBUTION (QUANTITY) AC 2 (1) AC 5 (4)
QUANTITY 5

PASTE
COLOR 7.5 YR/6/4 light brown
TEXTURE Fine-medium, compact; black, white, clear inclusions
FIRING Complete and incomplete

SURFACE FINISH
SLIPPED/UNSLIPPED Slipped
COLOR 7.5 YR/5/4 brown, 7.5 YR/6/6 reddish yellow
TECHNIQUE-TEXTURE Smoothed, polished; some blackening

FORM
RIM PROFILE Outsloping, outcurving
RIM DIAMETER 20-30 cm.
WALL THICKNESS 0.7 cm.

DECORATION
TECHNIQUE Painted - watery, sloppy
MOTIF Red on lips, lines perpendicular to the rim, exterior-lines wavy
COLOR 10 R/4/6 red

COMMENTS Had modes of Trinidad Smudged Ware and Cantinas Red-Orange modes.

COMPARATIVE DATA New group and ware - not in Chivo collection

CERAMIC COMPLEX
WARE Paracuaro Vegetable Tempered
GROUP Paracuaro Orange
DISTRIBUTION (QUANTITY) AC 4A (9)
QUANTITY 9

PASTE
COLOR 7.5 YR/7/4 pink; 7.5 YR/6/2 pinkish gray
TEXTURE Medium-coarse; high density vegetable temper - when fired most burns out leaving lines; otherwise, like Purua Ware

SURFACE FINISH
SLIPPED/UNSLIPPED Unslipped
COLOR 5 YR/7/8 reddish yellow, 5 YR/6/1 gray
TECHNIQUE-TEXTURE Smooth and matte; many burned-especially on one side

FORM
WALL THICKNESS 1.0-1.7 cm.
OTHER All body sherds

DECORATION
TECHNIQUE None

COMMENTS All found together from small area of AC 4. Thought a cooking vessel. Looks like a salt-holding vessel described by Sejourné (1970: figure 8) and possibly like Texcoco Fabric Marked (Tolstoy 1958:51-3).

COMPARATIVE DATA Not found in Chivo collection. Probably Acambaro Complex time associated.

CERAMIC COMPLEX
WARE Cebadilla Light
GROUP Cebadilla Pink Wash
DISTRIBUTION (QUANTITY) AC 7 (2) AC 8 (7)
QUANTITY 9

PASTE
COLOR 7.5 YR/6/4, 5/4 light brown, brown
TEXTURE Medium; clear inclusions - pieces are light in weight, like pumice
FIRING Complete

SURFACE FINISH
SLIPPED/UNSLIPPED Thin wash - slipped
COLOR 7.5 YR/7/4, 8/4 pink
TECHNIQUE-TEXTURE Smooth, generally matte

FORM
RIM PROFILE Outlsoping, everted
WALL THICKNESS 0.7-1.0 cm.
SUPPORTS Solid cylindrical (2.2-3.1 cm. diameters)
OTHER 2 handle fragments - wide flat strap - 3-3.5 cm. wide

DECORATION
TECHNIQUE Undecorated except 1 sherd
MOTIF If painted - interior rim (see below)
COLOR 10 R/4/6-8 red

COMMENTS Probably Acambaro in date - very close to Iglesias.
Eroded but light paste.

COMPARATIVE DATA Not in Chivo collection

CERAMIC COMPLEX
GROUP San Augustin Unslipped
DISTRIBUTION (QUANTITY) AC 5 (4) AC 7 (1)
QUANTITY 5

PASTE
COLOR 2.5 YR/6/8 light red, 7.5 YR/5/4, 2 brown
TEXTURE Extremely coarse - large white, pink, clear, red inclusions
FIRING Complete

SURFACE FINISH
SLIPPED/UNSLIPPED Unslipped
COLOR 5 YR/6/4, 5/4 reddish brown (cream)
TECHNIQUE-TEXTURE Unsmoothed generally except interior rim

FORM
RIM PROFILE Outcurving
WALL THICKNESS 0.9-1.3 cm.

DECORATION
TECHNIQUE Generally none - 2 sherds with red paint
MOTIF All-over exterior
COLOR 10 R/5/8, 4/6 red

COMMENTS Very coarse, heavy sherds

COMPARATIVE DATA Not in Chivo collection

CERAMIC COMPLEX
WARE Chamacuaro Thin
GROUP Pelon Red
DISTRIBUTION (QUANTITY) AC 3 (1) AC 4 (1) AC 4A (1)
QUANTITY 3

PASTE
COLOR 7.5 YR/6/4, light brown
TEXTURE Medium-coarse, red and white inclusions
FIRING Complete

SURFACE FINISH
SLIPPED/UNSLIPPED Slipped
COLOR 2.5 YR/5/6, 8; 10 R/4/8 red
TECHNIQUE-TEXTURE Smoothed exterior, matte interior; slip thin and poorly applied

FORM
WALL THICKNESS 0.2-0.3 cm.

DECORATION
TECHNIQUE Generally none - one sherd with black paint
MOTIF Thin irregular parallel lines - imitation negative?
COLOR 7.5 YR/3/0 very dark gray

COMMENTS Unusual feature of group is thinness of the sherd associated with crude surface finish.

COMPARATIVE DATA Not in Chivo Collection

CERAMIC COMPLEX
WARE Chamacuaro Thin
GROUP Los Organos Crude Rim
DISTRIBUTION (QUANTITY) AC 2 (7) AC 4 (1) AC 5 (5)
QUANTITY 13

PASTE
COLOR 7.5 YR/6/4 light brown; 7.5 YR/3/0 very dark gray
TEXTURE Medium, some coarse inclusions
FIRING Incomplete

SURFACE FINISH
SLIPPED/UNSLIPPED Unslipped
COLOR 7.5 YR/7/4 pink, 6/4 light brown
TECHNIQUE-TEXTURE Scraping marks very visible; unsmoothed, matte

FORM
RIM PROFILE Outcurving, everted - edges of lip are squared-possibly molded
RIM DIAMETER 15-2 cm., 30+ cm.
WALL THICKNESS 0.3-0.8 cm.

DECORATION
TECHNIQUE Painted
MOTIF All-over, exteriors and/or interior rims
COLOR 2.5 YR/5/6 red, 10 R/5/6 red

COMMENTS Extremely crude. May be modern.

COMPARATIVE DATA Not in Chivo collection

CERAMIC COMPLEX
WARE Inchamacuaro Coarse
GROUP Moreno Monochrome
DISTRIBUTION (QUANTITY) AC 2 (1) AC 4 (2) AC 5 (2)
QUANTITY 5

PASTE
COLOR 7.5 YR/6/4 light brown
TEXTURE Medium-coarse; compact; blacky red, clear, white dense inclusions
FIRING Incomplete and complete

SURFACE FINISH
SLIPPED/UNSLIPPED Unslipped or self-slipped
COLOR 7.5 YR/6/4 light brown; 10 YR/6/3 pale brown
TECHNIQUE-TEXTURE Smooth with wiping and scraping marks; some polished

FORM
RIM PROFILE Outsloping, outcurving straight
RIM DIAMETER 20-30 cm.
WALL THICKNESS 0.6-1.1 cm.

DECORATION
TECHNIQUE None

COMPARATIVE DATA Not in Chivo collection

CERAMIC COMPLEX
WARE Providencia Waxy Fine
GROUP Providencia Red
DISTRIBUTION (QUANTITY) AC 2 (5) AC 4 (1)
QUANTITY 6

PASTE
COLOR 7.5 YR/6/4 light brown
TEXTURE Fine-medium; black, white, red, clear fine inclusions
FIRING Complete and incomplete - clouding

SURFACE FINISH
SLIPPED/UNSLIPPED Slipped
COLOR 7.5 YR/7/7, 6/4 pink, light brown
TECHNIQUE-TEXTURE Thin slip; smoothed; some wiping and polishing marks visible; interior unsmoothed, surface slip is waxy and rootlet-like marks

FORM
RIM PROFILE Everted, outcurving, straight, incurving
RIM DIAMETER 15-20+ cm.
WALL THICKNESS 0.5-1.0 cm.
OTHER Miscellaneous fragment possibly of molded portion

DECORATION
TECHNIQUE Painted
MOTIF Interior lip and body
COLOR 2.5 YR/5/6 red; 10R/3/4 dusky red

COMMENTS The waxy, rootlet marked surface is major feature of group.

COMPARATIVE DATA Not in Chivo collection

CERAMIC COMPLEX
WARE Solis Coarse
GROUP San Felipe Wiped
DISTRIBUTION (QUANTITY) AC 5 (1)
QUANTITY 1

PASTE
COLOR 7.5 YR/7/4-6 pink, reddish yellow
TEXTURE Coarse-very coarse; large white, black gray inclusions
FIRING Incomplete - smudging

SURFACE FINISH
SLIPPED/UNSLIPPED Unslipped
COLOR 7.5 YR/7/4 pink
TECHNIQUE-TEXTURE Unsmoothed, wiped, grainy

FORM
RIM PROFILE Straight
RIM DIAMETER 35+ cm.
WALL THICKNESS 0.7 cm.
OTHER Large bowl with strap handle (5+ cm. long)

DESCRIPTION
TECHNIQUE None

COMMENTS Very crude

COMPARATIVE DATA Not in Chivo collection

CERAMIC COMPLEX
WARE Solis Coarse
GROUP San Nicolas Scraped
DISTRIBUTION (QUANTITY) AC 8 (1)
QUANTITY 1

PASTE See San Felipe Wiped

SURFACE FINISH See San Felipe Wiped

FORM
RIM PROFILE Straight with thinning
WALL THICKNESS 1.0 cm. after thinning

DECORATION
TECHNIQUE Painted
MOTIF Exterior bands, lip and interior oblique bands, parallel lines
COLOR 10 R/4/6 red

COMMENTS

COMPARATIVE DATA Not in Chivo collection

CERAMIC COMPLEX
WARE Jaripeo Coarse
GROUP Jaripeo Red Zoned
DISTRIBUTION (QUANTITY) AC 2 (1) AC 8 (1)
QUANTITY 2

PASTE
COLOR 5 YR/4/4 reddish brown
TEXTURE Coarse-very coarse-sandy-large, dense, blocky white, black, pink inclusions
FIRING Complete

SURFACE FINISH
SLIPPED/UNSLIPPED Unslipped
COLOR 5 YR/6/3 light reddish brown
TECHNIQUE-TEXTURE Smoothed, matte

FORM
RIM PROFILE Outcurving
WALL THICKNESS 1.4 cm.

DECORATION
TECHNIQUE Painted
MOTIF Interior, lip, exterior rim (1.2 cm. band)
COLOR 10 R/4/6 red

COMPARATIVE DATA Not in Chivo collection

In addition one figurine and two pipe fragments were included in the ceramic samples. For the analysis of the figurine see the article on figurines in this monograph. The pipe fragments consisted of:

1. White slipped, incised twist
   The paste was burned and unidentifiable

2. White slipped, 4 winged deeply incised
   Tecolate Ware
   (See Pollard 1972 for discussion of these forms.)

Both are of forms, decoration and, in one case, part of pipes identified in the Yaguarato Ceramic Complex, Tzintzuntzan (see Pollard 1972).

The following is the final tabulation of wares, groups and potential types found in the Lerma Basin survey. Those belonging to the Yaguarato Complex and clearly manufactured outside the local region are separately tabulated.

Wares

	2	3	4	4A	5	7	8
Chupicuaro Buff	27	1	3		1		3
Chupicuaro Brown	1		3		6	1	2
Jungapeo Coarse	8	3			2		
Rincon Sandy	5	1	1		1		
Trinidad Smudged	6	2	4		6		
Santa Ana	1		4		9		1
Aporo Cream Coarse	31	5	6		4	9	9
Canje Coarse	5		1		8	12	2
Bejucos Coarse	4		12		5	15	8
Purua Orange	2		11		3	42	1
Querenda White	13	6	8	1	16		3
Obrajuelo		1					
Loreta Polished	2	1	1		5		
Paracuaro Veg.				9			
Cebadilla Light						2	7
San Augustin					4	1	
Chamacuaro	7	1	2	1	5		
Providencia	5		1		0		
Solis Coarse					1		1
Jaripeo Coarse	1						1
La Vega Pink			1				
Inchamacuaro	1		2		3		
El Refugio	1		1				

	Groups						
	2	3	4	4A	5	7	8
Chupicuaro Painted	27	1	3		1		8
Chupicuaro Monochrome	1		2		4	1	2
Iramuco	6	1			2		
Ario	2	2					
Paso Ancho	5	1			1		
Fresno			1				
Garita	5	2	4		5		
Prieto	1						
Cantinas	1		4		9		1
Encarnacion	13	3	6		4	9	8
San Ramon	9						1
El Maguey	8	2					
Jaral	1						
Blanco	2		1		2		
Copandero	3		1		6	12	2
Iglesias	4		12		5	15	8
Buena Vista	2		11		3	42	1
Ojo de Agua	12	5	6		16		3
Las Jicamas		1					
El Verdin	1	1	1		1		
Tortuga Red	1				4		
Paracuaro O.				9			
Cebadilla Pink						2	7
San Augustin					4	1	
Pelon Red		1	1	1			
Los Organos	7		1		5		
Providencia	5		1				
San Felipe					1		
San Nicolas							1
Jaripeo	1						1
La Vega			1				
Inchamacuaro					1		
Moreno	1		2		2		
El Refugio	1	1					

Types

		2	3	4	4A	5	7	8
Chupicuaro Painted	A	6						
Chupicuaro Painted	B	10		2				2
Chupicuaro Painted	D	2				1		1
Chupicuaro Painted	E	4		1				
Chupicuaro Painted	I	2						
Chupicuaro Painted	K	2						
Iramuco	A	3	1			2		
Ario	B	1	1					
Paso Ancho	A	4						
Paso Ancho	B		1					
Paso Ancho	C					1		
Garita	A		1					
Garita	B	1	1	3		2		
Cantinas	A	1		4		8		1
Cantinas	B					1		
Encarnacion	A	10	1	3		3	9	6
Encarnacion	B	3		2				2
Encarnacion	C		1					
El Maguey	A	6	1					
El Maguey	B	2	1					
Blanco	B	2		1		2		
Copandero	A	3				5	12	2
Iglesias	A	1		3			7	1
Buena Vista	A			7		1	30	1
Buena Vista	B			1			4	
Ojo de Agua	A	10	5	6		16		2
Ojo de Agua	B	1						1
Ojo de Agua	C	1						
Type 40				1		1		

Yaguarato Complex

	2	3	4	4A	5	7	8
Wares							
Tarerio Cream		2		1	3		
Yaguarato Cream					1		1
Tariacuri Brown					2		
Groups							
Jaracuaro		1			1		
Pastorela Red		1		1			
San Andres					2		
San Pablo					1		1
Santa Ana					2		
Pipe Fragments					2		

Other
(No Complex Association)

Miscellaneous (Unidentified)	5	2	11	1	11	3	7
Figurine	1						

APPENDIX III

Ceramic Analysis

Michael Snarskis

The ceramic classificatory system used in this report is fundamentally the Type-Variety system as it has been applied to Maya ceramics (Smith, Willey and Gifford, 1960; Sabloff and Smith, 1968; Smith 1971).

The following terms are used to indicate various classes of ceramic material: ware, group, type, and variety. The standard definitions of these terms will be given below, and their use in the context of the present report will be explicated.

A ware is a ceramic assemblage "in which all attributes of surface finish and of paste composition, with the possible exception of temper, remain constant" (Smith 1971:7). By definition, a ware need not have a temporal significance although in practice it often does.

Characteristics of paste which are examined include: (1) texture, based on both the size of particles included in the clay matrix itself, and on the size of non-plastic particles included in it as temper or inclusions. Ideally the term texture refers to the clay and its inclusions only, but temper particles, if added, always alter this aspect of the paste. Generally an attempt is made to record the texture of the clay as it appears in a freshly-broken surface, taking into account the effect of temper grains as well. (2) Temper/Inclusions should be identified mineralogically, described both as to amount (sparse = 15% of total, moderate = 15-30%, heavy = over 30%) and as to the size of the particles. For the description of particle size, both in texture and for temper or inclusions, Wentworth's Size Classification is used in this report.

Pebble	64 - 4mm
Granule	4 - 2mm
Very Coarse	2 - 1mm
Coarse	1 - 1/2mm
Medium	1/2 - 1/4mm
Fine	1/4 - 1/8mm
Very Fine	1/8 - 1/16mm
Silt	1/16 - 1/256mm

Color Range is based on the Munsell Soil Color Charts. Porosity is noted only if the paste is very dense or open. Hardness is usually based on Moh's Scale, but very hard non-plastic particles in a softer clay matrix may be misleading. In this report, therefore, only pastes which are notably hard or friable will be singled out.

Qualities of firing that will be noted include: degree of oxidation (incomplete and complete), and whether or not evidence of smudging can be discerned.

Surface finish, the second criterion for the definition of a ware, will be described in terms of:
(1) Slip: whether a sherd is slipped or unslipped.
(2) Self-slipped: means either a slip of the same color of clay as that which composes the body of the sherd; or it may mean a polished unslipped surface in which the finer clay particles have "floated" to the surface, giving the appearance of slip (see Shepard 1971:192).
(3) Technique of surface finish: terms used here are wiped, scraped, smoothed, polished, and burnished, the last term meaning a very even, highly lustrous finish. More than one technique may have been used in the production of the same vessel. Slip may or may not hide visual evidence of the utilization of these techniques. (For a discussion of the recognition of different surface finishing techniques, see Shepard 1971:183-193).
(4) Texture: smooth means the hard, slippery or waxy feel of well-polished wood or pottery. Compacted usually means a polished surface that has eroded, but is still even to the touch; tactually it feels like fresh-planed wood or fine emery paper. Sandpapery is self-descriptive and is often the result of erosion. Grainy means the feel of individual non-plastic grains protruding from the surface of the paste.
(5) Luster: will be described here as either matte, slightly lustrous, lustrous, or highly lustrous.
(6) Color range: will be in terms of the Munsell Soil Color Charts.

Group in the Type-Variety System is sometimes thought of as a "super-type", in the sense that it circumscribes bodies of ceramic material which are not readily amenable to type classification according to tenets of the Type-Variety System, but which nevertheless show a limited range of variation of certain ceramic modes. Large batches of small or eroded sherds which cannot be typed, may often be assigned to a recognizable group. Sherds belonging to a particular group should show a consistent range of variation in some aspect of form, as well as color. (Sabloff and Smith 1968). The concept of group may also be usefully applied in instances where the size and representative quality of the sherd sample are insufficient; certain groups described in the present report were created for this reason.

The components of any ceramic group should be roughly contemporaneous (at least part of the same ceramic complex), and should all belong to the same ware.

A type is usually defined as "an aggregate of visually distinct ceramic attributes already recognized within one or (generally) several varieties that, when taken as a whole, are indicative of a particular class of pottery produced during a specific time interval within a specific region." (Smith 1971, Vol. I:14). In the Type-Variety system, those ceramic attributes definitive of type are: some aspect of form, and decorative technique.

Minor changes in decorative technique, a change in design motif or style, or even, if all else remains constant, a change in, say, temper, define a ceramic variety, the basic unit of the Type-Variety system. If only one variety is known or recognized, it becomes the type (as the established variety); as ceramic knowledge increases, the type may encompass several varieties.

In this report, characteristics of form will include: approximate rim diameter and sherd wall thickness, in mm.; rim profile of a representative selection of sherds from each type; vessel form, known or hypothesized; supports, handles or appendages will be illustrated when present.

Decoration will be expressed in terms of: technique of decoration (painting, incising, channeling, modeling, punctation); decorative motif; and color, in terms of the Munsell Soil Color Charts.

All illustrations in the text are actual size. Simple horizontal hatching indicates red, or red-orange, slip or paint (see explanation in text). Cross-hatching indicates brown or maroon paint. Shading indicates black or dark gray areas. Background areas of white indicate buff, cream, orange, or white base colors (see text). Outlined designs in white indicate white or cream painted motifs.

It should be noted that this ceramic report must, due to the limited stratigraphic ceramic material available, utilize the Type-Variety system in a limited and incomplete fashion. Most published archeological reports which use the Type-Variety system, define ceramic types on the basis of whole vessel form and decorative technique. Since there were few whole vessels in this collection, the types presented here are based primarily on rim profile, and should properly be considered as sherd types only. Further, the division of the artifactual universe into wares, groups, types, and varieties has been conducted at the finest possible scale so as not to miss variations which might be more apparent in a larger sample. Thus, it is to be expected that the "types" and "varieties" explicated here will, in the future, be recombined into larger, more inclusive entities. All taxa here should be understood as descriptions of actual materials and their range of variation; that is, extensionally defined categories.

WARES

Ceramic wares defined at this point in the Cerro el Chivo ceramic analysis will be described briefly. Complete and detailed descriptions of all attributes diagnostic of each ware will be found in the separate descriptive sheets for each potential type and group. All wares have been assigned proper names for ease of reference.

Chupicuaro Buff - Paste: light to grayish buff in color, flecked with white particles, medium to coarse in texture. Non-plastics are unevenly distributed. Firing is almost always incomplete (incompletely oxidized), but the paste is well-knit and durable.
Surface Finish: slipped and unevenly burnished. Highly lustrous. Colors are deep red, buff or cream. Chupicuaro Buff is equivalent to Chupicuaro Painted Group.

Chupicuaro Brown - Paste: light to medium brown or muddy brown in color, with unevenly distributed non-plastic particles in heavier concentrations than in Chupicuaro Buff. Almost always incompletely oxidized. Well-knit and durable.
Surface Finish: Some sherds are slipped, but most are self-slipped. Some sherds are evenly burnished, but most are less carefully polished, and polishing strokes are often evident. Less lustrous, in general, than

Chupicuaro Buff with some sherds showing unpolished areas (under everted rims, for instance). Colors range from buff to light and chocolate brown, and gray or black. Chupicuaro Brown is equivalent to Chupicuaro Monochrome Group.

Jungapeo Coarse - Paste: Essentially the same as Chupicuaro Brown but less hard.
Surface Finish: slipped, but often with very evident or careless smoothing and polishing strokes. Smooth but rather uneven surfaces are characteristic. Luster ranges from slightly to highly lustrous. Colors include those associated with Chupicuaro Buff with the addition of orange-brown and white pigments.

Rincon Sandy - Paste: Similar to Chupicuaro Brown but more sandy in texture, with non-plastics more evenly distributed. Usually fully oxidized.
Surface Finish: Rims are usually slipped in red or brown-red. Slip is usually poorly polished and dull or matte in luster. Except for rims and lips, sherds are unslipped and are either smoothed, compacted, or scraped. Unslipped areas are matte and may be sandpapery, grainy or compacted. Color of unslipped areas is buff or tan.

Trinidad Smudged - Paste: Fine in texture, apparently untempered. Non-plastics are much smaller than in the wares described above, and are homogeneously distributed throughout the clay matrix. Most sherds are incompletely oxidized. Color is tan to light brown; most sherds are smudged. Paste is rather dense, but weakly knit.
Surface Finish: Unslipped, but floated and smudged, which may give the appearance of slip. Mostly an even, compact, matte finish, although some sherds are slightly lustrous and some show smoothing or polishing strokes. Irregular smudging results in colors ranging from tan to gray and black.

Santa Ana Sandy - Paste: Similar to Trinidad Smudged in color and homogeneity, but texture is medium and non-plastics are slightly larger. Usually completely oxidized.
Surface Finish: Both slipped and unslipped. Interior surfaces are mostly smooth, even and polished or burnished, and are lustrous to highly lustrous. Exterior surfaces, however, are mostly compacted and matte. Colors are red-orange on buff.

Aporo Cream Slipped Coarse - Paste: Medium to coarse buff clay matrix with coarse to very coarse blocky clear (quartz?) nonplastics. Same smaller red and black particles. Non-plastics are unevenly distributed. Usually fully oxidized. Paste is very strong and hard.
Surface Finish: Unusually thick (3/4 mm.) white or cream slip. Smooth, fairly even polished or burnished surface. Very fine shiny polishing strokes, often in a crosshatch pattern, are evident. May have been polished when rather hard. Lustrous to highly lustrous. Colors are deep red, resist carbon and white cream. Noticeably dense and hard surface.

Canje Coarse Ware - Paste: Similar to Aporo Cream Slipped Coarse but less blocky quartz. Texture is sandier and less coarse.
Surface Finish: Usually self-slipped, but some sherds slipped. Smooth, fairly even polished surfaces (when not eroded). Matte (eroded) to slightly lustrous. Colors are buff to gray.

Bejucos Coarse - Paste: Coarse to very coarse textured sandy paste, occasionally with very coarse or granular lumps of weathered white material. Uneven distribution of non-plastics. Tan or brown color, mostly fully oxidized, but some sherds smudged.
Surface Finish: Unslipped sherds are much eroded, thus compacted or sandpapery in texture. Polished (eroded) or wiped. Some sherds show a sight colored matte slip or wash.

Purua Orange - Paste: Medium to coarse sandy paste. Non-plastics fairly evenly distributed. Orange in color, sometimes with one or more pink bands visible in a freshly broken section. Usually fully oxidized.
Surface Finish: Mostly compacted and rather even, matte surfaces, although some sherds are polished to a slight luster. Unslipped. Some sherds, especially supports, are wiped.

El Jaral Red Paste - Paste: Orange in color like Purua Orange, but similar in most other respects to Chupicuaro Brown. The relatively few sherds in this ware may be the result of aberrant firing conditions.
Surface Finish: Slipped in brown to dark brown color. Matte to slightly lustrous, polishing strokes evident.

Andocutin Fine - Paste: Very fine, dense and untempered light orange clay. Sherds show both complete and incomplete oxidation.
Surface Finish: Slipped and polished, with a smooth, waxy feel and a moderate luster. Tan, dirty orange to brown and gray in color.

GROUPS

As was noted earlier, groups represented are classes of sherds which share a recognizable and limited range of variation in some aspect of form and color. Following are capsule descriptions of the various ceramic groups so far determined at the Cerro el Chivo site. Since some of these tentative groups are based on extremely few sherds, or only body sherds, they have not been further divided into potential types and varieties. In such cases, however, all known modes of paste, surface, form, and decoration are described and/or illustrated under the group heading in the main body of this report. In instances where potential types have been suggested, the more detailed modal data are found in the separate descriptive sections for each sherd type. Comments are comparative data for the group as a whole can be found in a section preceeding the various potential type descriptions. Like wares, all groups have been assigned proper names. Since the ceramic group is often the basic working unit in this analysis, and since any potential types suggested are often very tenative sherd types, the group name includes a descriptive adjective, for example: Chupicuaro Painted Group or Ario Black on Red Group. In strict Type-Variety nomenclature, such descriptive terms would appear in the Type designations.

TYPES

Due to the limited sample on which this report is based, as well as the virtual absence of whole or partially reconstuctable vessels deriving from controlled contexts, the potential types suggested here should be viewed for the most part as speculative and open to future re-definition. Most of them are in fact sherd types, differing thus from strict Type-Variety taxonomy, which employs whole vessel form as an integral part of the type concept. Nevertheless, specific modes of decoration and decorative motif were frequently observed to co-occur with certain sherd forms in significant percentages. These potential types have been noted here under the proper name of the corresponding ceramic group with the addition of an upper case letter of the alphabet, for example: Chupicuaro Painted A. Further larger samples will help clarify or re-define these potential types. At this point, the finest possible division of the sample would seem to provide the most useful units for future analysis.

horizontal lines = red or red-orange slip or paint; reference should be made to the appropriate Munsell Soil Color number.

cross-hatching = brown slip or paint; reference should be made to the appropriate Munsell Soil Color number.

blackened area = black paint, slip or smudging; it also indicates resist decoration.

white area = white background may indicate cream, buff, tan, orange, or even gray and black in the case of Type 30 (Black Incised). Check Munsell number. Outlined white indicates white or cream linear painted decoration.

GROUP Chupicuaro Painted Group (Group)
CERAMIC COMPLEX Chupicuaro
WARE Chupicuaro Buff Ware
POTENTIAL TYPES Chupicuaro Painted A, B, C, D, E, F, G, H, I, J
STRATIGRAPHIC POSITION group represented in all layers and levels but predominately in layers A and B (levels 16-11)

COMMENTS

This ceramic group encompasses all the painted Chupicuaro ceramics previously assigned by Porter (1956), to "wares" on the basis of color alone. These groups are called by Porter, red, red-rimmed, red-on-buff, brown polychrome, black polychrome, and black-on-red wares. Although the same color divisions were recognized in the Cerro el Chivo sample, it was decided to combine them into a Chupicuaro Painted Group since all colors of painted decoration occurred on a common and distinctive range of forms which was different than the range of forms characteristic of Chupicuaro Monochrome ceramics (Porter's black ware). In the Chupicuaro Painted Group, a striking correspondence between certain styles of painted decoration and certain rim forms is often observable, hence the suggestion of many potential types in this group. The definition of a ceramic group on the basis of modes of both color and form also follow correct taxonomic procedure according to the Type-Variety system of ceramic classification (Smith and Gifford 1965:502, footnote 5) (Sabloff and Smith 1969:279).

Porter (1956) originally thought that black polychrome preceeded brown polychrome in the Chupicuaro sequence. Recently, she (Frierman ed. 1969) reversed this order and suggested the following broad sequence: Early - brown polychrome, black on red; Late - black polychrome; projected sequence has been confirmed in one deep stratigraphic test pit (3 meters) near the base of Cerro Toro on the outskirts of Acambaro. Polychrome painted sherds from the lowest levels of this pit were exclusively brown polychrome, with black polychrome entirely absent. Red-on-buff and monochrome sherds were also present in the lowest levels. Later levels in the same pit produced black polychrome ceramics.

Porter (Frierman 1969:13) also comments on the surprising lack of resist painted ceramics in the Chupicuaro complex, given the popularity of the technique in contemporary ceramic complexes (Late Preclassic) in the Valley of Mexico and adjacent regions. In the 1972 field season, we discovered several sherds combining red painted and resist carbon on cream decoration, these sherds were taken from the lowest levels of the aforementioned deep stratigraphic pit, in association with red on buff and brown polychrome ceramics.

COMPARATIVE DATA

The relationships, in ceramic style and otherwise, between Chupicuaro and other archeological complexes are adequately summarized by Porter (Frierman 1969:7-15).

CERAMIC COMPLEX Chupicuaro
WARE Chupicuaro Buff Ware
GROUP Chupicuaro Painted Group (Group 1)
POTENTIAL TYPE Chupicuaro Painted A
STRATIGRAPHIC POSITION predominately layers A, B (levels 16-11)

PASTE
COLOR 10 YR 7/3 to 7.5 YR 5/4 (very pale brown to brown)
TEXTURE medium to coarse
FIRING most sherds incompletely oxidized, a few fully oxidized

SURFACE
COLOR 10 YR 7/3, 7/2, 6/4, 6/3, to 7.5 YR 5/2 (very pale brown, pale brown, light yellowish brown, light gray to brown)
TECHNIQUE - TEXTURE - LUSTER slipped and evenly burnished to a high luster; smooth

FORM
RIM PROFILE straight sided, out-slanting
RIM DIAMETER 18 - 36 cm. WALL THICKNESS 8 - 14 mm
SUPPORTS spider leg hollow or stubby hollow

DECORATION
TECHNIQUE thickly painted on body; reserved space on lip; channelled ext. body; occasionally shallow channelling with lip decoration absent
COLOR 10 R 4/6.3/6 (red, dark red); 5 YR 4/3, 2.5 YR 3/4, 4/4 (dark reddish brown to reddish brown)
MOTIF 1, 2, or 3 channels on ext. body, reserved space dots, diamonds on lip

COMMENTS This potential type may occur in brown or red on buff.

COMPARATIVE DATA Circumferential finger grooving also occurs in potential type -- Buena Vista Orange B.

CERAMIC COMPLEX Chupicuaro
WARE Chupicuaro Buff Ware
GROUP Chupicuaro Painted Group (Group 1)
POTENTIAL TYPE Chupicuaro Painted B
STRATIGRAPHIC POSITION predominately layers A, B (levels 16-11)

PASTE
COLOR 10 YR 7/3 to 7.5 YR 5/4 (very pale brown to brown)
TEXTURE medium to coarse
FIRING almost always incompletely oxidized; a few fully oxidized

SURFACE
COLOR 10 YR 6/4, 6/3, 7/2, 7/3 to 7.5 YR 5/2 (very pale brown, pale brown, light yellowish brown, light gray to brown)
TECHNIQUE - TEXTURE - LUSTER slipped and burnished to a high luster; smooth

FORM
RIM PROFILE straight sided, out-slanting
RIM DIAMETER 18 - 26+ cm. WALL THICKNESS 7 - 11 mm.
SUPPORTS hollow spider leg
OTHER vessel form: open straight sided tripod bowl

DECORATION
TECHNIQUE painted, mostly on interior surface
COLOR 10 R 4/6, 6/6 (light red to red)
MOTIF V or chevron motifs; sometimes with reserved space zigzag bands as dividers between the chevrons; exterior may or may not be decorated

COMMENTS Sherds with thicker painted lines and a tapered, pointed lip profile may be earlier in time; several such sherds occur in brown on buff pigments.

COMPARATIVE DATA Chupicuaro Painted B bears certain remarkable design motif similarities to potential type Cantinas Red-Orange A in the Lerma ceramic complex. Chupicuaro sherds, however, may be distinguished by their opaque, thickly applied, well-polished pigments on both interior and exterior surfaces.

CERAMIC COMPLEX Chupicuaro
WARE Chupicuaro Buff Ware
GROUP Chupicuaro Painted Group (Group 1)
POTENTIAL TYPE Chupicuaro Painted C
STRATIGRAPHIC POSITION predominately layers A, B (level 16-11)

PASTE
COLOR 10 YR 7/3 to 7.5 YR 5/4 (very pale brown to brown)
TEXTURE medium to coarse
FIRING almost always incompletely oxidized, a few fully oxidized

SURFACE
COLOR 10 YR 7/2, 7/3, 6/4, 6/3, to 7.5 YR 5/2 (very pale brown, pale brown, light yellowish brown, light gray to brown)
TECHNIQUE - TEXTURE - LUSTER slipped and evenly burnished to a high luster; smooth

FORM
RIM PROFILE expanded or beaded on the interior edge
RIM DIAMETER 26 - 30 cm. WALL THICKNESS 6 - 12 mm.
SUPPORTS uncertain
OTHER

DECORATION
TECHNIQUE mostly paint on lip; occasionally on exterior wall
COLOR 10 R 4/6, 3/6; 4/2, 3/3, 7.5 YR 2/0 (weak red, dusky red, red, dark red, to black)

MOTIF reserved space and painted lines, zigzags and bands on lip, either parallel or perpendicular to its circumference; some exterior bands

COMMENTS This potential type occurs in both brown and red on buff

COMPARATIVE DATA One sherd of Chupicuaro Painted C has broad red curving bands on its exterior surface of potential type Cantinas Red-Orange A. The exterior surface of the Chupicuaro sherd, however, is highly burnished and smooth, in marked contrast to the matte and invariably poorly polished exterior of Cantinas Red-Orange A sherds. The two pigments involved are also very different in color and texture.

CERAMIC COMPLEX Chupicuaro
WARE Chupicuaro Buff Ware
GROUP Chupicuaro Painted Group (Group 1)
POTENTIAL TYPE Chupicuaro Painted D
STRATIGRAPHIC POSITION predominately layers A, B (levels 16-11)

PASTE
COLOR 10 YR 7/3 to 7.5 YR 5/4 (very pale brown to brown)
TEXTURE medium to coarse
FIRING almost always incompletely oxidized, a few fully oxidized

SURFACE
COLOR 10 YR 7/3, 7/2, 6/4, 6/3 to 7.5 5/2 (very pale brown, pale brown, light yellowish brown, light gray to brown)
TECHNIQUE - TEXTURE - LUSTER slipped and evenly burnished to high luster; smooth

FORM
RIM PROFILE composite silhouette: flattened S - shapes
RIM DIAMETER 20 - 28 cm. WALL THICKNESS 6 - 9 mm.
SUPPORTS uncertain
OTHER Var. 4 c - has bolstered rim on interior surface

DECORATION
TECHNIQUE paint on interior rim and lip
COLOR 10 R 3/6, 4/6; 7.5 YR 2/0 (red, dark red, to black)
MOTIF Checkerboard pattern; vertical lines and a triangle shape or a diamond shape

COMMENTS Sherds of this potential type occurred in solid red and black on red; in one case the black pigment had eroded, revealing the cream slip beneath.

COMPARATIVE DATA The decorative technique of leaving reserved space zones of exposed cream slip which are then covered by black pigment, is unique to the Chupicuaro ceramic complex.

CERAMIC COMPLEX Chupicuaro
WARE Chupicuaro Buff Ware
GROUP Chupicuaro Painted Group (Group 1)
POTENTIAL TYPE Chupicuaro Painted E
STRATIGRAPHIC POSITION predominately layers A, B (levels 16-11)

PASTE
COLOR 10 YR 7/3 to 7.5 YR 5/4 (very pale brown to brown)
TEXTURE medium fine to coarse
FIRING almost always incompletely oxidized, a few fully oxidized

SURFACE
COLOR 10 YR 6/3, 6/4, 7/3, 7/2, to 7.5 YR 5/2 (very pale brown, pale brown, to light yellowish brown, light gray to brown
TECHNIQUE - TEXTURE - LUSTER slipped and evenly burnished to a high luster; smooth

FORM
RIM PROFILE incurving, restricted form; some are thickened
RIM DIAMETER 12 - 18 cm. WALL THICKNESS 6 - 11 mm.
SUPPORTS some vessels have hollow spider leg; others have no supports
OTHER small stick-punched nubbin handles and nubbin applique may occur at rim exterior

DECORATION
TECHNIQUE paint; tool impression; channelling or grooving.
COLOR 10 R 4/4, 3/6; 10 R 3/4; 7.5 YR 2/0; (weak red, dusky red, dark red, to black)
MOTIF various: lines running circumferentially and at right angles; elongated interlocking diamond shapes; checkerboard pattern; wavy lines; reserved space with ridging; red zigzag zones outlined in black on cream base. (all motifs on exterior surface, utilizing red or red and black on cream slip; rarely, brown on cream and brown polychrome)

COMMENTS This rim profile is very common in the Chupicuaro complex, but occurs only infrequently in the remainder of the Acambaro sequence.

COMPARATIVE DATA

CERAMIC COMPLEX Chupicuaro
WARE Chypicuaro Buff Ware
GROUP Chupicuaro Painted Group (Group 1)
POTENTIAL TYPE Chupicuare Painted F
STRATIGRAPHIC POSITION predominately layers A, B (levels 16-11)

PASTE
COLOR 10 YR to 7.5 YR 5/4 (very pale brown to brown)
TEXTURE medium to coarse
FIRING almost always incompletely oxidized; a few fully oxidized

SURFACE
COLOR 10 YR 7/2, 7/3, 6/4, to 7.5 YR 5/2 (very pale brown, pale brown, light yellowish brown, light gray to brown)
TECHNIQUE - TEXTURE - LUSTER slipped and evenly burnished to a high luster, smooth

FORM
RIM PROFILE outcurving; sometimes thickened at lip

RIM DIAMETER 12 - 30+ cm. WALL THICKNESS 6 - 12 mm.
SUPPORTS uncertain
OTHER one sherd has applique pellet underlip

DECORATION
TECHNIQUE painted, usually interior; applique, exterior
COLOR 10 R 4/6, 3/6; 5 YR 3/3, 4/4; 7.5 YR 2/0 (red, dark red, reddish brown, dark reddish brown, to black)
MOTIF red band around lip; square or triangular zones on interior rim; angular red zones outlined by black lines.

COMMENTS This rim profile occurs infrequently in the Chupicuaro Painted Group; it is more typical of the Chupicuaro Monochrome Group.

COMPARATIVE DATA

CERAMIC COMPLEX Chupicuaro
WARE Chupicuaro Buff Ware
GROUP Chupicuaro Painted Group (Group 1)
POTENTIAL TYPE Chupicuaro Painted G
STRATIGRAPHIC POSITION predominately layers A, B (levels 16-11)

PASTE
COLOR 10 YR 7/3, to 7.5 YR 5/4 (very pale brown, to brown)
TEXTURE medium to coarse
FIRING almost always incompletely oxidized; a few fully oxidized

SURFACE
COLOR 10 YR 7/3, 7/2, 6/4, 6/3 to 7.5 YR 5/2 (very pale brown, pale brown, light yellowish brown, light gray to brown)
TECHNIQUE - TEXTURE - LUSTER slipped and evenly burnished to a high luster; smooth

FORM
RIM PROFILE sharply incurved form, with turned-up or thickened lip
RIM DIAMETER 8 - 16 cm. WALL THICKNESS 6 - 10 mm.
SUPPORTS uncertain
OTHER the "rim" profile here actually includes part of the shoulder

DECORATION
TECHNIQUE painted, exterior and rim only
COLOR 10 YR 4/4, 4/6; 715 YR 2/0 (weak red, red, to black)
MOTIF vertical red lines; concentric red diamond shapes; red and cream geometric zones outline in black paint

COMMENTS Many sherds in this potential type had most of the lip broken away; the precise rim profile was difficult to determine. Even though such sherds are basically only body sherds, they have been included in Chupicuaro Painted G on the basis of similarities in decorative technique motif.

COMPARATIVE DATA

CERAMIC COMPLEX Chupicuaro
WARE Chupicuaro Buff Ware
GROUP Chupicuaro Painted Group (Group 1)
POTENTIAL TYPE Chupicuaro Painted H
STRATIGRAPHIC POSITION predominately layers A, B (levels 16-11)

PASTE
COLOR 10 YR 7/3, to 7.5 YR 5/4 (very pale brown, to brown)
TEXTURE medium to coarse
FIRING almost always incompletely oxidized; a few fully oxidized

SURFACE
COLOR 10 YR 7/3, 7/2, 6/4, 6/3 to 7.5 YR 5/2 (pale brown, very pale brown, light yellowish brown, light gray to brown)
TECHNIQUE - TEXTURE - LUSTER slipped and polished or burnished to luster or high luster; some sherds smooth

FORM
RIM PROFILE straight sided, outslanting; often flat lip
RIM DIAMETER 18 - 24+ cm. WALL THICKNESS 7 - 12 mm.
SUPPORTS uncertain
OTHER

DECORATION
TECHNIQUE painted on both interior, exterior; broad incision
COLOR 10 YR 4/4, 4/6; 5 YR 4/3; 7.5 YR 2/0 (weak red, red, reddish brown to black)
MOTIF red and black lines or band on buff; incised line outlining red banded rim, exterior

CERAMIC COMPLEX Chupicuaro
WARE Chupicuaro Buff Ware
GROUP Chupicuaro Painted Group (Group 1)
POTENTIAL TYPE Chupicuaro Painted H
STRATIGRAPHIC POSITION predominately layers A, B (levels 16-11)

PASTE
COLOR 10 YR 7/3 to 7.5 YR 5/4 (very pale brown to brown)
TEXTURE medium to coarse
FIRING almost always incompletely oxidized; a few fully oxidized

SURFACE
COLOR 10 YR 7/3, 7/2, 6/4, 6/3, to 7.5 YR 5/2 (pale brown, very pale brown, light yellowish brown, light gray to brown)
TECHNIQUE - TEXTURE - LUSTER slipped and polished or burnished to luster or high luster; some sherds smooth

FORM
RIM PROFILE straight side, outslanting; often flat lip
RIM DIAMETER 18 - 24+ cm. WALL THICKNESS 7 - 12 mm.
SUPPORTS uncertain
OTHER

DECORATION
TECHNIQUE painted on both interior, exterior; broad incision
COLOR 10 YR 4/4, 4/6; 5 YR 4/3; 7.5 YR 2/0 (weak red, red, reddish brown to black)
MOTIF red and black lines or band on buff; incised line outlining red banded rim, exterior

COMMENTS This potential type has essentially the same rim profile as Chupicuaro Painted B, but the striking consistency of decorative technique and motif in that type set it apart.

COMPARATIVE DATA Certain polychrome sherds in Chupicuaro Painted H resemble the Iramuco Polychrome Group in decorative motif.

CERAMIC COMPLEX Chupicuaro
WARE Chupicuaro Buff Ware
GROUP Chupicuaro Painted Group (Group 1)
POTENTIAL TYPE Chupicuaro Painted I (Tool Impressed)
STRATIGRAPHIC POSITION predominately layers A, B (levels 16-11)

PASTE
COLOR 10 YR 7/3 to 7.5 YR 5/4 (very pale brown to brown)
TEXTURE medium to coarse
FIRING almost always incompletely oxidized, a few fully oxidized

SURFACE
COLOR 10 YR 6/3, 6/4, 7/2, 7/3 to 7.5 YR 5/2 (very pale brown, pale brown, light yellowish brown, light gray to brown)
TECHNIQUE - TEXTURE - LUSTER zonally slipped; some sherds unevenly polished, others burnished; highly to slightly lustrous (eroded)

FORM
RIM PROFILE composite silhouette, with bead around upper ext. body
RIM DIAMETER 24 - 26 cm. WALL THICKNESS 5 - 9 mm.
SUPPORTS uncertain
OTHER tool impressed bead around upper ext. body; scalloped lip

DECORATION
TECHNIQUE zoned slip paint; applique bead or fillet; tool impression
COLOR 10 R 4/6, 3/6 (red, to dark red)
MOTIF tool impressed bead around ext. body; tool impressions on lip give scalloped effect

COMMENTS This potential type has only red on buff variations; the reds tend to be more watery and sometimes approach red-orange; luster and polish are not as striking as in other Chupicuaro Painted sherds.

COMPARATIVE DATA

CERAMIC COMPLEX Chupicuaro/Solis
WARE Chupicuaro Brown Ware
GROUP Chupicuaro Monochrome Group (Group 2)
POTENTIAL TYPE unspecified
STRATIGRAPHIC POSITION occurs in layers A, B, C, D (levels 16-6) (Unlike Chupicuaro Painted; continues chronologically beyond Chupicuaro Painted)

PASTE
COLOR 7.5 YR 5/4, 4/2, 3/0; 10 YR 4/1 (brown, dark gray, to very dark gray)
TEXTURE medium to very coarse
FIRING usually incompletely oxidized; some smudging and firing clouds

SURFACE
COLOR 7.5 YR 5/4, 4/2, 3/0, 2/0; 10 YR 4/1 (brown, dark gray, very dark gray, to black)
TECHNIQUE - TEXTURE - LUSTER mostly self-slipped; unevenly polished to a medium luster; mostly smooth; a few sherds slipped and burnished

FORM
RIM PROFILE various, including: oblique or right angle everted; beaded; straight outslanting; outcurving; incurving; composite silhouette
RIM DIAMETER 8 - 28 cm. WALL THICKNESS 4 - 19 mm.
SUPPORTS hollow spider leg or hollow mammiform, when present
OTHER sharply angled shoulders and bases are common; various applique or strap handles may be applies at lip; see Porter (1956) and Frierman, ed. (1969) for examples of whole vessel forms

DECORATION
TECHNIQUE various, including: channelling (fluting, gadrooning), broad line incising, finger grooving, scalloping, applique buttons and fillets, large and small punctation and tool impression; embossing
COLOR unspecified
MOTIF circumferential lines and grooves, vertical fluting, punctation in lines or V-forms, zones of applique buttons or punctation; plastic decoration often occurs on the characteristic sharply angled shoulder

COMMENTS This group encompasses all Chupicuaro ceramics which Porter (1956) included in her black ware category. Her appellation is somewhat misleading, since the surface color may range from a rather light tan through chocolate browns, to grays and black.

Certain rim profiles are characteristic of the Chupicuaro Monochrome Group, especially everted and beaded forms; these forms occur only rarely or not at all in the Chupicuaro Painted Group. Rather thick sherds, often with a waxy finish, are typical of the Chupicuaro Monochrome Group. Although many modes of form and decoration are salient and distinctive in this group, the lack of whole vessels from a controlled context prevents the association of specific

(continued on following page)

Chupicuaro Monochrome Group (continued)

rim profiles with specific decorative techniques; for this reason, not even potential types can be suggested. The full range of ceramic modes for this however, are indicated in the text and accompanying illustrations.

COMPARATIVE DATA In vessel form and decorative techniques, this group shares many modes with the ceramics of Tlatilco in the Valley of Mexico; stirrup spout and zoomorphic effigy occur in both complexes.

CERAMIC COMPLEX Mixtlan
WARE Jungapeo Coarse Ware
GROUP Ario Black on Red Group (Group 5)
POTENTIAL TYPE Ario Black on Red A
STRATIGRAPHIC POSITION predominately layer B (levels 13-11)

PASTE
COLOR 10 YR 6/4, 5/4 (light yellowish brown, to yellowish brown)
TEXTURE coarse to very coarse
FIRING imcompletely oxidized

SURFACE
COLOR 10 YR 7/3 (very pale brown)
TECHNIQUE - TEXTURE - LUSTER slipped; unevenly polished to medium luster; some sherds smooth and burnished to a high luster

FORM
RIM PROFILE various; straight outslanting; composite silhouette
RIM DIAMETER 12 - 20 cm. WALL THICKNESS 5 - 8 mm.
SUPPORTS uncertain, but include hollow, pointed mammiform
OTHER thinner sherd walls

DECORATION
TECHNIQUE paint; pre-slip knobs and ridges on lip
COLOR 7.5 YR 2/10; 10 YR 8/1, 7/2 (white, light gray, to black)
MOTIF lines on lip; chain motif around upper body; spiral or repeated wave motif, braided or loop motifs; zoomorphic or anthropomorphic forms

COMMENTS This group shows black and white painted motifs on red slip, the range and variety of decorative motifs is great, and seems to emphasize curvilinear forms. White paint applied in a linear fashion makes its first appearance in the Acambaro sequence with this group and the contemporary Acuitzio Red on Black Group. As yet it is uncertain whether or not the technological difference between these two groups has chronological significance.

COMPARATIVE DATA In the Iramuco Polychrome Group, a chain-like motif around the upper body of vessels slipped in red with the chain motif in black from Guerrero, in the collections of the Museum of the American Indian, Heye Foundation. Another vessel illustrating the same motif is illustrated by Bell (1971:729 Figure 27-d), and is from Jalisco.

CERAMIC COMPLEX Mixtlan
WARE Jungapeo Coarse Ware
GROUP Acuitzio Red on Black Group (Group 6)
POTENTIAL TYPE unspecified
STRATIGRAPHIC POSITION predominately in layer B (levels 13-11)

PASTE
COLOR 10 YR 6/4, 5/4 (light yellowish brown, to yellowish brown)
TEXTURE coarse to very coarse
FIRING incompletely oxidized

SURFACE
COLOR 10 YR 7/3 (very pale brown)
TECHNIQUE - TEXTURE - LUSTER slipped; unevenly polished to medium luster; some sherds smooth and burnished to a high luster

FORM
RIM PROFILE composite profile (all other sherds are body sherds)
RIM DIAMETER 1 - 15+ cm. WALL THICKNESS 4 - 6 mm.
SUPPORTS uncertain, but probably including hollow mammiform
OTHER

DECORATION
TECHNIQUE thick paint
COLOR 10 YR 4/6, 4/4; 10 YR 8/1, 7/2 (white, light gray, weak red, to red)
MOTIF repeated tau forms; curvilinear red lines; circumferential red lines; crenellated motifs

COMMENTS This group exhibits red and white zoned and linear pigments on a black slipped or partially slipped surface. Certain decorative aspects of both the Acuitzio Red on Black Group and the Ario Black on Red appear to have been shared; the technical difference between the two groups may or may not have temporal significance.

COMPARATIVE DATA

CERAMIC COMPLEX Mixtlan
WARE Jungapeo Coarse Ware
GROUP Nancho Orange Polychrome Group (Group 7)
POTENTIAL TYPE unspecified
STRATIGRAPHIC POSITION predominately layer B (levels 13-11)

PASTE
COLOR 10 YR 6/4, 5/4 (light yellowish brown, to yellowish brown)
TEXTURE coarse to very coarse
FIRING incompletely oxidized

SURFACE
COLOR 10 YR 7/3 (very pale brown)
TECHNIQUE - TEXTURE - LUSTER slipped; unevenly or evenly polished to medium luster; some sherds smooth and burnished to a high luster

FORM
RIM PROFILE vertical or slightly outslanting
RIM DIAMETER 14 - 18 cm. WALL THICKNESS 4 - 6 mm.
SUPPORTS uncertain
OTHER

DECORATION
TECHNIQUE thick paint, polychrome
COLOR 10 R 4/6, 4/4; 7.5 YR 2/0; 5 YR 6/6, 10 YR 8/1 (white, weak red, red, reddish yellow, to black)
MOTIF bands or lines; vertical teeth-like motifs; amorphous blobs of pigment, applied thickly

COMMENTS This very distinctive group has too few sherds to be fully understandable; some sherds may be trade sherds.

COMPARATIVE DATA

CERAMIC COMPLEX Mixtlan
WARE Jungapeo Coarse Ware
GROUP Salitre Polychrome Group (Group 8)
POTENTIAL TYPE unspecified
STRATIGRAPHIC POSITION predominately layer B (levels 13-11)

PASTE
COLOR 10 YR 6/4, 5/4 (light yellowish brown, to yellowish brown)
TEXTURE coarse to very coarse
FIRING incompletely oxidized

SURFACE
COLOR 10 YR 7/3 (very pale brown)
TECHNIQUE - TEXTURE - LUSTER slipped; unevenly polished to a slight luster; fairly smooth, but polishing strokes are evident

FORM
RIM PROFILE no rim sherds
RIM DIAMETER ? WALL THICKNESS 5 mm.
SUPPORTS uncertain
OTHER

DECORATION
TECHNIQUE thick paint; polychrome
COLOR 10R 4/6; 2.5 YR 2/0 (red to black)
MOTIF comb-like motifs in red and black, often interlocking; curvilinear and free forms

COMMENTS A very small number of sherds make up this group, but all units excavated at Cerro el Chivo contained examples of Salitre Polychrome.

COMPARATIVE DATA This group is also found in published reports on Sinaloa; Sauer and Brand (1932), in their monograph on the widespread Aztatlan complex in far western Mexico, illustrate sherds which are exactly like those in El Jaral Polychrome Group from Cerro el Chivo.

CERAMIC COMPLEX Mixtlan
WARE Andocutin Fine Ware
GROUP La Merced Waxy-Slipped Group (Group 9)
POTENTIAL TYPE unspecified
STRATIGRAPHIC POSITION predominately layer B (levels 13-11)

PASTE
COLOR 7.5 YR 7/4, 6/6 (pink, to reddish yellow)
TEXTURE very fine to silt
FIRING both completely and incompletely oxidized

SURFACE
COLOR 10 YR 5/6, 4/2 (cloudy) (yellowish brown, to dark grayish brown)
TECHNIQUE - TEXTURE - LUSTER slipped or self-slipped; evenly polished to a lustrous finish; smooth and waxy

FORM
RIM PROFILE flat everted; also incurving; direct rim
RIM DIAMETER 15 - 18 cm. WALL THICKNESS 4 - 5 mm.
SUPPORTS uncertain
OTHER

DECORATION
TECHNIQUE one sherd with triangular tool impressions
COLOR
MOTIF tool impressions around exterior rim

COMMENTS The very fine paste is quite distinctive, and the surface of the everted sherds is often rootlet marked and noticeably waxy. The tool impressed sherd may represent another group, but was included here for the present due to similarities in paste texture.

COMPARATIVE DATA

CERAMIC COMPLEX Mixtlan
WARE Jungapeo Coarse Ware
GROUP Truchas Applique Group (Group 10)
POTENTIAL TYPE unspecified
STRATIGRAPHIC POSITION predominately layer B (levels 13-14)

PASTE
COLOR 10 YR 6/4, 5/4 (light yellowish brown to yellowish brown)
TEXTURE coarse to very coarse
FIRING incompletely oxidized

SURFACE
COLOR 10 YR 7/3 (very pale brown)
TECHNIQUE - TEXTURE - LUSTER varies; some sherds slipped, others not; some wiped, others unevenly polished; mostly matte and compacted

FORM
RIM PROFILE no rim sherds
RIM DIAMETER ? WALL THICKNESS 4 - 8 mm.
SUPPORTS uncertain, although one sherd appears to be a part of a ring stand
OTHER

DECORATION
TECHNIQUE some reddish paint (5 YR 5/4 - reddish brown); applique pellets of varying size
COLOR 5 YR 5/4 (reddish brown)
MOTIF rows of pellets sometimes alternated with painted lines

COMMENTS Pellets may be smoothed buttons, flattened out, or irregular rough shapes.

COMPARATIVE DATA Vessels from the Balsas River area to the southwest of Acambaro very often show this applique technique. The few sherds of this kind at Cerro el Chivo may be trade sherds. Flat and hollow figurines from Colima also show similar applique buttons.

CERAMIC COMPLEX Mixtlan/Lerma
WARE El Jaral Red Paste Ware
GROUP Tarandacuao Dark Slipped Group (Group 3)
POTENTIAL TYPE unspecified
STRATIGRAPHIC POSITION layers B, C, D (levels 13-6)

PASTE
COLOR 2.5 YR 5/8; 5 YR 7/6, 4/4 (red, reddish yellow, to reddish brown)
TEXTURE coarse to very coarse
FIRING usually completely oxidized, or nearly so

SURFACE
COLOR 2.5 YR 4/4. 4/2; 10 YR 4/1 (weak red, reddish brown, to dark gray)
TECHNIQUE - TEXTURE - LUSTER slipped; unevenly polished to a matte or slightly lustrous finish; smooth to compacted

FORM
RIM PROFILE no rim sherds
RIM DIAMETER WALL THICKNESS
SUPPORTS uncertain
OTHER

DECORATION
TECHNIQUE no decoration
COLOR
MOTIF

COMMENTS This small group is composed solely of body sherds, and as such must be considered liable to future re-definition.

COMPARATIVE DATA

CERAMIC COMPLEX Mixtlan/Lerma
WARE Jungapeo Coarse Ware
GROUP Iramuco Polychrome Group (Group 4)
POTENTIAL TYPE Iramco Polychrome A
STRATIGRAPHIC POSITION layers B, C, D (levels 13-6)

PASTE
COLOR 10 YR 6/4, 5/4 (light yellowish brown to yellowish brown)
TEXTURE coarse to very coarse
FIRING incompletely oxidized

SURFACE
COLOR 10 YR 7/3 (very pale brown)
TECHNIQUE - TEXTURE - LUSTER slipped; unevenly polished; matte to lustrous, polishing strokes evident; many sherds eroded

FORM
RIM PROFILE various; everted (beaded); straight outslanting; outcurving
RIM DIAMETER 14 - 30+ cm. WALL THICKNESS 4 - 10 mm.
SUPPORTS Uncertain, although two annular base fragments occur among -- the Iramuco Polychrome sherds
OTHER

DECORATION
TECHNIQUE thick, carelessly applied polychrome paint, on interior, exterior and lip
COLOR 10 R 4/6, 4/4; 7.5 YR 2/0 (weak red, red, and black)
MOTIF broad bands; interlocking toothed motif on lip; chain motif in black on interior or exterior wall; crosshatching

COMMENTS The careless, smeared appearance of the red and black on cream pigments of this group is diagnostic; the smearing was apparently done by stick-polishing the wet pigments.

COMPARATIVE DATA Some Iramuco Polychrome sherds exhibit a range of colors similar to that found in Chupicuaro Painted ceramics; crosshatching, lip decoration and other shared modes also suggest a generic relationship between the two styles. The two pastes are dissimilar, however.

CERAMIC COMPLEX Lerma
WARE Rincon Sandy Ware
GROUP Paso Ancho Red Rim Group (Group 11)
POTENTIAL TYPE Paso Ancho Red Rim A
STRATIGRAPHIC POSITION predominately layers C, D, E (levels 10-5)

PASTE
COLOR 10 YR 6/4, 5/4 (light yellowish brown, to yellowish brown)
TEXTURE coarse and sandy
FIRING incompletely oxidized

SURFACE
COLOR 20 YR 6/4, 5/4 (light yellowish brown)
TECHNIQUE - TEXTURE - LUSTER self-slipped or unslipped; exteriors unevenly polished, slight luster; interiors wiped, scraped and matte

FORM
RIM PROFILE sharply incurving, sometimes with thickened lip
RIM DIAMETER 16 - 24+ cm. WALL THICKNESS 5 - 7 mm.
SUPPORTS uncertain
OTHER

DECORATION
TECHNIQUE red painted rims; one sherd with square tool impressions
COLOR 10 R 4/6, 4/4 (weak red, to red)
MOTIF red painted rims; tool impressions in a band below lip on exterior

COMMENTS This type crosscuts two ceramic complexes; in group and paste, it has more in common with the Lerma complex, but according to stratigraphic percentages it has been placed near the end of the Mixtlan complex.

COMPARATIVE DATA Some Chupicuaro Painted sherds show a similar, but generally smaller, rim profile.

CERAMIC COMPLEX Lerma
WARE Rincon Sandy Ware
GROUP Paso Ancho Red Rim Group (Group 11)
POTENTIAL TYPE Paso Ancho Red Rim B
STRATIGRAPHIC POSITION predominately layers C, D, E (levels 10-5)

PASTE
COLOR 10 YR 6/4, 5/4 (light yellowish brown, to yellowish brown)
TEXTURE coarse and sandy
FIRING incompletely oxidized

SURFACE
COLOR 10 YR 6/4, 5/4 (light yellowish brown)
TECHNIQUE - TEXTURE - LUSTER painted on rim only; unevenly polished; interior scraped and sandpapery; matte; exterior compacted

FORM
RIM PROFILE either outcurving or everted
RIM DIAMETER 18 - 24 cm. WALL THICKNESS 6 - 12 mm.
SUPPORTS uncertain, but one large, straight solid associate
OTHER 5 large strap handles

DECORATION
TECHNIQUE rim painted in red or brown; scoring; tool impressions
COLOR (10 YR 5/4, 4/4); (2.5 YR 5/6, 4/6) (weak red, to red)
MOTIF red rims; some tool impression on lip; deep scoring around exterior collar

COMMENTS This potential type exhibits a rather wide range of sherd thickness and general aspect, as well as stratigraphic distribution; it may be subdivided in a larger sample.

COMPARATIVE DATA Certain coarse, rim sherds intermediate between the Chupicuaro Painted and Chupicuaro Monochrome groups resemble this potential type. The lack of a good slip, polish, or burnishing, plus a sandy paste, set Paso Ancho Red Rim B apart. Surface finds of this potential type show the same watery red-orange paint that characterizes the very diagnostic potential type Cantinas Red-Orange A; in Paso Ancho Red Rim B it is applied in oblique, parallel bands or smears on the exterior collar or under the rim. Tool impression on the lip is usually present also.

CERAMIC COMPLEX Lerma
WARE Rincon Sandy Ware
GROUP Paso Ancho Red Rim Group (Group 11)
POTENTIAL TYPE Paso Ancho Red Rim C
STRATIGRAPHIC POSITION predominately layers C, D, E (levels 10-5)

PASTE
COLOR 10 YR 6/4. 5/4 (light yellowish brown, to yellowish brown)
TEXTURE coarse and sandy
FIRING incompletely oxidized

SURFACE
COLOR 10 YR 6/4, 5/4 (light yellowish brown)
TECHNIQUE - TEXTURE - LUSTER exterior slipped and unevenly polished to slight luster; smooth, but crackled; interior unslipped, scraped while plastic

FORM
RIM PROFILE incurving, with slight thickening at lip
RIM DIAMETER 24+ cm. WALL THICKNESS 7 - 10 mm.
SUPPORTS uncertain
OTHER one strap handle fragment

DECORATION
TECHNIQUE no decoration
COLOR
MOTIF

COMMENTS The distinctive attributes of this type are the crackled reddish-brown slip and the rough, scraped interior surfaces.

COMPARATIVE DATA

CERAMIC COMPLEX Lerma
WARE Rincon Sandy Ware
GROUP Paso Ancho Red Rim D
POTENTIAL TYPE Paso Ancho Red Rim D
STRATIGRAPHIC POSITION predominately layers C, D, E (levels 10-5)

PASTE
COLOR 10 YR 6/4, 5/4 (light yellowish brown to yellowish brown)
TEXTURE coarse; sandy
FIRING incompletely oxidized

SURFACE
COLOR 10 YR 6/4, 5/4 (light yellowish brown)
TECHNIQUE - TEXTURE - LUSTER painted zones unevenly polished to a slight luster; other zones crudely slipped or unslipped; compacted, matte

FORM
RIM PROFILE composite silhouette; very flattened S - shape
RIM DIAMETER 24 - 32+ cm. WALL THICKNESS 10 - 12 mm.
SUPPORTS uncertain, but perhaps small, solid nubbin
OTHER

DECORATION
TECHNIQUE paint; red only, smeared in application or polishing
COLOR 2.5 YR 4/8, 4/6 (red)
MOTIF red rims; vertical lines dropping from rim; crosshatching below interior rim band; broad curving bands exterior

COMMENTS

COMPARATIVE DATA This type exhibits the same watery red-orange paint used on the very diagnostic Cantinas Red-Orange; apparently, this type was a coarse ware in production at the same time, or nearly so. This view is supported by the stratigraphy.

CERAMIC COMPLEX Lerma
WARE Trindad Smudged Ware
GROUP Garita Black-Brown Group (Group 12)
POTENTIAL TYPE Garita Black-Brown A (Plain)
STRATIGRAPHIC POSITION predominately layers C, D, E (levels 10-5)

PASTE
COLOR 10 YR 6/4, 5/4 (light yellowish brown, to yellowish brown)
TEXTURE fine to medium
FIRING usually incompletely oxidized; some smudging

SURFACE
COLOR 10 YR 6/3, 5/2, 4/2, 4/1; 7.5 YR 2/0 (pale brown, grayish brown, dark grayish brown, dark gray, to black)
TECHNIQUE - TEXTURE - LUSTER unslipped or self-slipped smoothed or unevenly polished; compacted to smooth; matte to slight luster

FORM
RIM PROFILE simple vertical or slightly outslanting
RIM DIAMETER 18 - 24 cm. WALL THICKNESS 4 - 7 mm.
SUPPORTS uncertain
OTHER

DECORATION
TECHNIQUE no decorated sherds
COLOR
MOTIF

COMMENTS Consistencey of rim profile and thinner sherd walls are the hallmarks of this potential type.

COMPARATIVE DATA Garita Black-Brown A (plain) appears to be the undecorated forerunner or counterpart to Garita Black-Brown B (Incised). It might also be confused with certain direct rim sherds in the Chupicuaro Monochrome Group, but the finer paste and thin sherd walls of Garita Black-Brown A seem to affiliate it with the later complexes at Acambaro. This potential type seems to cross-cut two ceramic complexes, Mixtlan and Lerma; although this might be ascribed to the vagaries of deposition, it should be kept in mind that the ceramic stratigraphy from AC/C/NE/1 at Cerro el Chivo was remarkably clear and precise.

CERAMIC COMPLEX Lerma
WARE Trinidad Smudged Ware
GROUP Garita Black-Brown Group (Group 12)
POTENTIAL TYPE Garita Black-Brown B (Incised)
STRATIGRAPHIC POSITION predominately layers C, D, E (levels 10-5)

PASTE
COLOR 10 YR 6/4, 5/4 (light yellowish brown, to yellowish brown)
TEXTURE generally fine; some medium
FIRING mostly incompletely oxidized; smudged

SURFACE
COLOR 10 YR 6/3, 5/2, 4/2, 4/1; 7.5 YR 2/0 (pale brown, grayish brown, dark grayish brown, dark grayish, dark gray, to black)
TECHNIQUE - TEXTURE - LUSTER self-slipped (floated); unevenly polished; compacted, some sherds smooth; matte, some slightly lustrous; both interior and exterior surfaces are so finished

FORM
RIM PROFILE straight outslanting; some almost vertical
RIM DIAMETER 14 - 24+ cm. WALL THICKNESS 4 - 9 mm.
SUPPORTS small, solid nubbin-like; usually unpolished
OTHER some vessels have no supports; some grater bottoms

DECORATION
TECHNIQUE exterior incision; white or orange pigment-filled incised lines
COLOR
MOTIF very numerous; repeated panes of zigzag, Z shapes, checkerboard, ovals, circles, taus, concentric circles and diamonds; parallel oblique lines

COMMENTS This potential type is highly diagnostic of the Lerma ceramic complex. Standardization of ceramic attributes such as vessel form, supports, surface finish, paste and design style are very evident.

The majority of Garita Black-Brown B (Incised) sherds have medium width incision (3/4 - 1 1/2 mm.), but some show fine line incision (1/4 - 3/4 mm.). Slight differences in decorative motif also seem to correspond to this technical difference. Most sherds seem to have had white pigment filling the incised lines; a few sherds have orange pigment. Most of this filling is now eroded away.

COMPARATIVE DATA Similar incised ceramics are found in Amapa, Nayarit (Bell 1971:709) and in the Zacatecas-Durango area (J.C. Kelley, 1971, Fig. 2 following p. 801).

CERAMIC COMPLEX Lerma
WARE Santa Ana Sandy Ware
GROUP Cantina Red-Orange Group (Group 13)
POTENTIAL TYPE Cantinas Red-Orange A
STRATIGRAPHIC POSITION predominately layers C, D, E (levels 10-5)

PASTE
COLOR 10 YR 7/4, 7/3, 7/2 (very pale brown, to light gray)
TEXTURE medium
FIRING either completely or incompletely oxidized

SURFACE
COLOR 10 YR 7/4, 7/3, 7/2 (very pale brown, to light gray)
TECHNIQUE - TEXTURE - LUSTER self-slipped; interiors polished or burnished to a high luster (if not eroded); exteriors compacted, matte

FORM
RIM PROFILE straight, outslanting
RIM DIAMETER 18 - 26 cm. WALL THICKNESS 5 - 9 mm.
SUPPORTS small, solid nubbin-like
OTHER a few sherds show plate-like forms

DECORATION
TECHNIQUE paint (watery red-orange; usually crazed or crackled) one sherd incised
COLOR 10 R 4/8 (red); 2.5 YR 4/8 (red)
MOTIF parallel oblique lines; chevrons; spirals; crosshatching with dots; circles with hatching (all basically linear motifs)

COMMENTS On most of the sherds of this potential type, the red-orange paint is crazed or crackled and has a high luster if not eroded. A smaller number of sherds show paint that has sunk into the clay matrix with no crazing apparent and a dull luster; these latter sherds often have different decorative motifs as well.

Along with Garita Black-Brown B (Incised), Cantinas Red-Orange A is highly diagnostic of the Lerma ceramic complex.

COMPARATIVE DATA At first glance, Cantinas Red-Orange A may be mistaken for Chupicuaro Painted B; rim profile and especially decorative motifs are remarkably similar. However, the exterior walls of Cantinas Red-Orange A sherds invariably have a wide, wavy red line or two on a matte, compacted surface, while Chupicuaro sherds always have highly burnished, slipped exteriors. Different pastes, pigments, and support forms also distinguish the two.

In general aspect, Cantinas Red-Orange A shows many stylistic affinities with other widespread red on buff ceramic industries of the early Postclassic period. Standardization of ceramic modes such as vessel form, supports and decorative motif is noticeable. Mold made figurines and spindle whorls appear in the Acambaro ceramic stratigraphy at about this time.

CERAMIC COMPLEX Lerma
WARE Aporo Cream Slipped Coarse Ware
GROUP Encarnacion Red Zoned Group (Group 14)
POTENTIAL TYPE Encarnacion Red Zoned A
STRATIGRAPHIC POSITION predominately layers C, D, E (levels 10-5)

PASTE
COLOR 10 YR 7/3, 6/3 (very pale brown, to pale brown)
TEXTURE very coarse (blocky quartz inclusions)
FIRING either completely or incompletely oxidized

SURFACE
COLOR 10 YR 7/3, 6/4 (very pale brown, to light yellowish brown)
TECHNIQUE - TEXTURE - LUSTER exceptionally thick cream slip; polished smooth and lustrous, some highly lustrous, fine burnishing marks (#) may be evident

FORM
RIM PROFILE simple vertical, or bowl shape
RIM DIAMETER 15 - 20 cm. WALL THICKNESS 6 - 8 mm.
SUPPORTS small, solid nubbin
OTHER

DECORATION
TECHNIQUE paint
COLOR 10 R 4/6 (red)
MOTIF zonally decorated areas; half circles, circles, ovals or other smooth forms (non-linear motifs, as opposed to those of Cantinas Red-Orange A)

COMMENTS The thick cream slip characteristic of this ware should be watched for, although attributes of form are shared with Cantinas Red-Orange A.

COMPARATIVE DATA

CERAMIC COMPLEX Lerma
WARE Aporo Cream Slipped Ware
GROUP Encarnacion Red Zoned Group (Group 14)
POTENTIAL TYPE Encarnacion Red Zoned B
STRATIGRAPHIC POSITION predominately layers C, D, E (levels 10-5)

PASTE
COLOR 10 YR 7/3, 6/3 (very pale brown to pale brown)
TEXTURE very coarse (blocky quartz inclusions)
FIRING either completely or incompletely oxidized

SURFACE
COLOR 10 YR 7/3, 6/4 (very pale brown, to light yellowish brown)
TECHNIQUE - TEXTURE - LUSTER exceptionally thick cream slip polished fairly smooth and lustrous; fine burnishing marks (#) may be evident

FORM
RIM PROFILE composite silhouette; flattened S - shape
RIM DIAMETER 10 - 24 cm. WALL THICKNESS 6 - 9 mm.
SUPPORTS uncertain
OTHER

DECORATION
TECHNIQUE paint
COLOR 10 R 4/6 (red)
MOTIF red rim, red oblique band or crosshatching on interior; wavy red bands on exterior

COMMENTS See remarks under previous potential type.

COMPARATIVE DATA In attributes of form, this type resembles Paso Ancho Red Rim D; they may be generally related. Surface finds confirm Encarnacion Red Zoned B as a Aporo Cream Slipped Coarse Ware is crucial here.

CERAMIC COMPLEX Lerma
WARE Aporo Cream Slipped Coarse Ware
GROUP Encarnacion Red Zoned Group (Group 14)
POTENTIAL TYPE Encarnacion Red Zoned C (Resist)
STRATIGRAPHIC POSITION predominately layers C, D, E (levels 10-5)

PASTE
COLOR 10 YR 7/3, 6/3 (very pale brown, to pale brown)
TEXTURE very coarse (blocky quartz)
FIRING incompletely oxidized

SURFACE
COLOR 10 YR 7/3, 6/4 (very pale brown, to light yellowish brown)
TECHNIQUE - TEXTURE - LUSTER exceptionally thick cream slip; polished smooth and lustrous; fine burnishing marks (#) may be evident

FORM
RIM PROFILE straight or slightly curved outslanting
RIM DIAMETER 16 - 20 cm. WALL THICKNESS 4 - 9 mm.
SUPPORTS small, solid nubbin
OTHER

DECORATION
TECHNIQUE resist technique; red paint
COLOR 2.5 YR 4/6; 7.5 2/0 (red, to black)
MOTIF zoned red or red rim; curving lines or spirals in resist carbon; slight darkening or resist with lacquered appearance, on exterior

COMMENTS Although some sherds of this potential type exhibit resist decoration only, and others have both resist and red paint, the small size of the sample prohibits the formation of separate taxa; the sherds with only resist decoration may well be part of a vessel that is red paint elsewhere on it.

COMPARATIVE DATA Whole vessels from the Valley of Toluca (in the collections of the Museum of the American Indian, Heye Foundation) resemble the Encarnacion Red Zoned C (Resist) sherds from Acambaro in the resist motifs as well as the use of red paint and resist together.

CERAMIC COMPLEX Acambaro
WARE Canje Coarse Ware
GROUP Blanco Eroded Group (Group 15 4)
POTENTIAL TYPE Blanco Eroded B
STRATIGRAPHIC POSITION predominately layer F (levels 1-4)

PASTE
COLOR 10 YR 7/3, 6/3 (very pale brown, to pale brown)
TEXTURE coarse and sandy
FIRING completely oxidized, some smudging

SURFACE
COLOR 10 YR 7/3, 6/4 (very pale brown, to light yellowish brown)
TECHNIQUE - TEXTURE - LUSTER slipped or self-slipped; unevenly polished to compacted or smooth; slightly lustrous (most sherds eroded)

FORM
RIM PROFILE simple bowl shape, or outslanting
RIM DIAMETER 15 - 18 cm. WALL THICKNESS 6 - 8 mm.
SUPPORTS probably small, solid nubbin; some loop legs
OTHER

DECORATION
TECHNIQUE paint
COLOR red
MOTIF broad bands, mostly interior

COMMENTS Most sherds are highly eroded.

COMPARATIVE DATA This type is probably generically related to Encarnacion Red Zoned A. The thick cream slip is absent, however, and most sherds are greatly eroded. The red paint is also of a lighter hue.

CERAMIC COMPLEX Acambaro
WARE Canje Coarse Ware
GROUP Blanco Eroded Group (Group 15)
POTENTIAL TYPE Blanco Eroded A
STRATIGRAPHIC POSITION predominately layer F (level 1-4)

PASTE
COLOR 10 YR 7/3, 6/3 (very pale brown, to pale brown)
TEXTURE coarse and sandy
FIRING mostly completely oxidized

SURFACE
COLOR 10 YR 7/3, 6/4 (very pale brown, to light yellowish brown)
TECHNIQUE - TEXTURE - LUSTER slipped or self-slipped; unevenly polished to compacted or smooth; slightly lustrous (most sherds eroded)

FORM
RIM PROFILE composite silhouette; flattened S - shape
RIM DIAMETER 20+ cm. WALL THICKNESS 5 - 9 mm.
SUPPORTS uncertain
OTHER

DECORATION
TECHNIQUE paint
COLOR 2.5 YR 4/6; 5 YR 5/6 (yellowish red, to red)
MOTIF wide bands, circumferential, exterior and interior

COMMENTS Classification of this and several other potential types and groups in the Acambaro ceramic complex was made appreciably more difficult by the high degree of erosion exhibited by all sherds.

COMPARATIVE DATA This potential type is obviously related to Encarnacion Red Zoned B; its stratigraphic position and different paste and surface finish, however, place it in the Acambaro ceramic complex. The generic relation between it and former potential types should be clarified in a larger sample. Ceramic stratigraphy at nearby Zinapecuaro also shows this style of red on buff pottery as late (Moedano 1946).

CERAMIC COMPLEX Acambaro
WARE Queranda White Ware
GROUP Ojo de Aqua (Group 16)
POTENTIAL TYPE unspecified
STRATIGRAPHIC POSITION layer F (levels 4-1)

PASTE
COLOR 7.5 YR 7/6 (reddish yellow); 5 YR 6/6 (reddish yellow); 7.5 YR 6/4 (light brown)
TEXTURE very compact; fine, sparse inclusions
FIRING almost glassy; incompletely oxidized

SURFACE
COLOR 7.5 YR 7/6 (reddish yellow); 5 YR 6/6 (reddish yellow); 7.5 YR 6/4 (light brown)
TECHNIQUE - TEXTURE - LUSTER slipped or self-slipped; even to unevenly polished; compacted to smooth, slight luster

FORM
RIM PROFILE various; straight, slightly incurving and outcurving
RIM DIAMETER 14 - 24 cm. WALL THICKNESS 5 - 9 mm.
SUPPORTS solid, loop legs
OTHER

DECORATION
TECHNIQUE some painted in red, some incised
COLOR 10 R 5/8 (red)
MOTIF paint carelessly applied in blotches or zonally; incised lines

COMMENTS

COMPARATIVE DATA Tziutzuntzan (Pollard 1972)

CERAMIC COMPLEX Acambaro
WARE Purva Orange Ware
GROUP Buena Vista Orange Group (Group 17)
POTENTIAL TYPE Buena Vista Orange A (Incised)
STRATIGRAPHIC POSITION layer F (levels 4-1)

PASTE
COLOR 2.5 YR 5/8; 5 YR 7/6, 4/4 (red, reddish yellow, to reddish brown)
TEXTURE medium to coarse
FIRING mostly completely oxidized

SURFACE
COLOR 5 YR 6/6; 7.5 6/6; 10 YR 6/4 (reddish yellow to light yellowish brown)
TECHNIQUE - TEXTURE - LUSTER mostly unslipped, some self-slipped; unevenly polished to compacted or sandpapery; mostly matte

FORM
RIM PROFILE straight, slightly outslanting
RIM DIAMETER 22+ cm. WALL THICKNESS 5 - 10 mm.
SUPPORTS short, straight solid; thick straight solid; loop legs
OTHER

DECORATION
TECHNIQUE medium width incision
COLOR
MOTIF various; mostly panels of vertical, horizontal or oblique lines; some with elongated wave form filled with hatching

COMMENTS This potential type is very diagnostic of the Acambaro ceramic complex. A freshly broken cross-section often shows one or more pink bands in the orange paste, just as incompletely oxidized sherds of other wares have gray or black bands toward the center.

COMPARATIVE DATA The Buena Vista Orange Group lay above an unbroken white calcareous layer in AC/C/NE/1 at Cerro el Chivo, isolated thus from preceding ceramic styles; nevertheless, certain decorative motifs (elongated wave forms filled with hatching) executed by incising are shared by both Garita Black-Brown B (Incised) and Buena Vista Orange A (Incised), suggesting a continuity of some kind; in other ceramic technology, the two potential types differ dramatically.

CERAMIC COMPLEX Acambaro
WARE Purva Orange Ware
GROUP Buena Bista Orange Group (Group 17)
POTENTIAL TYPE Buena Vista Orange B (Grooved)
STRATIGRAPHIC POSITION layer F (levels 4-1)

PASTE
COLOR 2.5 YR 5/8; 5 YR 7/6, 4/4 (red, reddish yellow, to reddish brown)
TEXTURE medium to coarse
FIRING mostly completely oxidized

SURFACE
COLOR 5 YR 6/6; 7.4 YR 6/6; 10 YR 6/4 (reddish yellow to light yellowish brown)
TECHNIQUE - TEXTURE - LUSTER mostly unslipped; some self-slipped; unevenly polished to compacted or sandpapery; mostly matte

FORM
RIM PROFILE straight, slightly outslanting
RIM DIAMETER 20 - 24+ cm. WALL THICKNESS 7 - 8 mm.
SUPPORTS straight solid or loop leg solid
OTHER some grater bottoms

DECORATION
TECHNIQUE finger groves on exterior
COLOR
MOTIF circumferential finger grooves (one or two) on exterior; some grater bottoms

COMMENTS Along with Buena Vista Orange A (Incised), this potential type is very diagnostic of the Acambaro ceramic complex.

COMPARATIVE DATA Buena Vista Orange A (Incised) and B (Grooved) both exhibit straight sided, outslanting bowl forms with either straight solid or loop legs. Grater bottoms occur in both potential types. Similar pottery has been found at the nearby sites of Zinapecuaro and Querendaro to the west. Collections examined in the National Museum of of Anthropology in Mexico City.

CERAMIC COMPLEX Acambaro
WARE Bejucos Coarse Ware
GROUP Iglesias Eroded Group (Group 18)
POTENTIAL TYPE unspecified
STRATIGRAPHIC POSITION layer F (levels 4-1)

PASTE
COLOR 10 YR 7/4, 7/3 (very pale brown)
TEXTURE coarse to very coarse and granular
FIRING mostly completely oxidized

SURFACE
COLOR 10 YR 6/4, 7/4, 6/3 (very pale brown, pale brown, to light yellowish brown) 7.5 YR 7/4 (pink); 10 YR 8/4
TECHNIQUE - TEXTURE - LUSTER mostly unslipped; wiped, scraped; grainy, sandpapery; matte; wash or slip is compacted, uneven, matte

FORM
RIM PROFILE various; everted, outcurving, outslanting
RIM DIAMETER 14 - 24+ cm. WALL THICKNESS 6 - 11 mm.
SUPPORTS various: long solid, stubby solid, loop legs, some hollow
OTHER many strap handles

DECORATION
TECHNIQUE some olla necks show heavy vertical pattern polishing, exterior; some reed punched circles
COLOR
MOTIF possible pattern polishing

COMMENTS This amorphous group is composed of all those coarse, eroded plain ware sherds that are characteristic of the upper levels at Cerro el Chivo.

Some of these sherds are probably "floaters", now eroded beyond easy recognition. All distinctive forms characteristic of other groups, like Chupicuaro Monochrome Group E, have been separated and assigned to their separate groups.

COMPARATIVE DATA

CERAMIC COMPLEX Acambaro
WARE Canje Coarse Ware
GROUP Copandero Excised Group (Group 19)
POTENTIAL TYPE Copandero Excised A
STRATIGRAPHIC POSITION layer F (levels 4-1)

PASTE
COLOR 10 YR 7/3, 7/4 (very pale brown, to pale brown)
TEXTURE coarse to medium
FIRING usually completely oxidized

SURFACE
COLOR 10 YR 7/3, 6/4 (very pale brown; light yellowish brown)
TECHNIQUE - TEXTURE - LUSTER self-slipped; polished to smooth or compacted; slightly lustrous; some sherds eroded

FORM
RIM PROFILE straight outflaring
RIM DIAMETER 22 - 24 cm. WALL THICKNESS 5 - 7 mm.
SUPPORTS short or long solid; loop leg solid
OTHER some grater bottoms

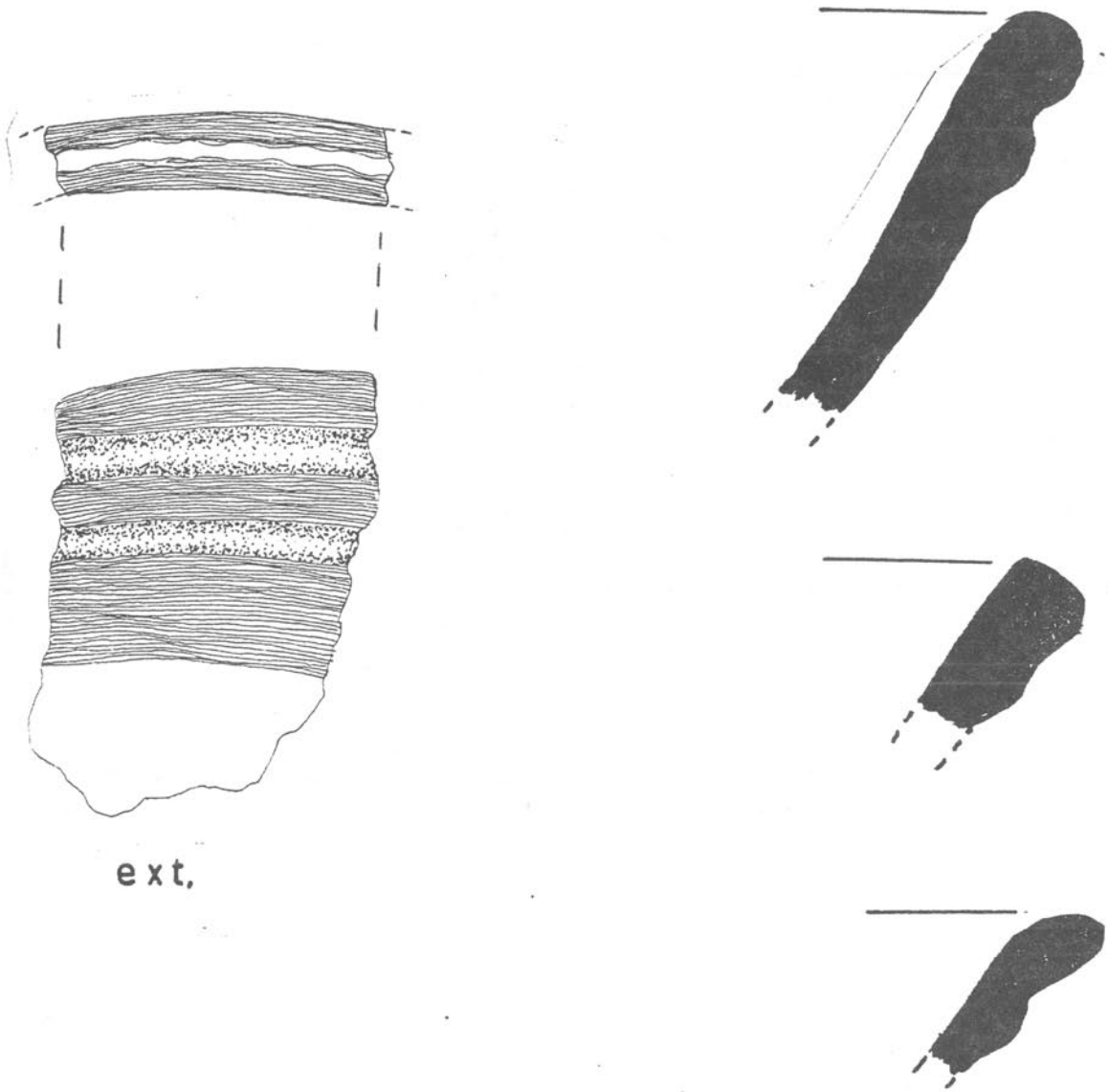
DECORATION
TECHNIQUE incised or excised (carved); stylus or knife
COLOR
MOTIF geometric, rectilinear motifs in panels on exterior; cartouche motifs filled with incised or fingernail pressed crosshatching

COMMENTS

COMPARATIVE DATA A continuum of decorative technique, motif and surface color seems to exist between Buena Vista Orange A (Incised) and Copandero Excised A; stratigraphic evidence suggests, however, that the latter type may be later in time.

Figure 36

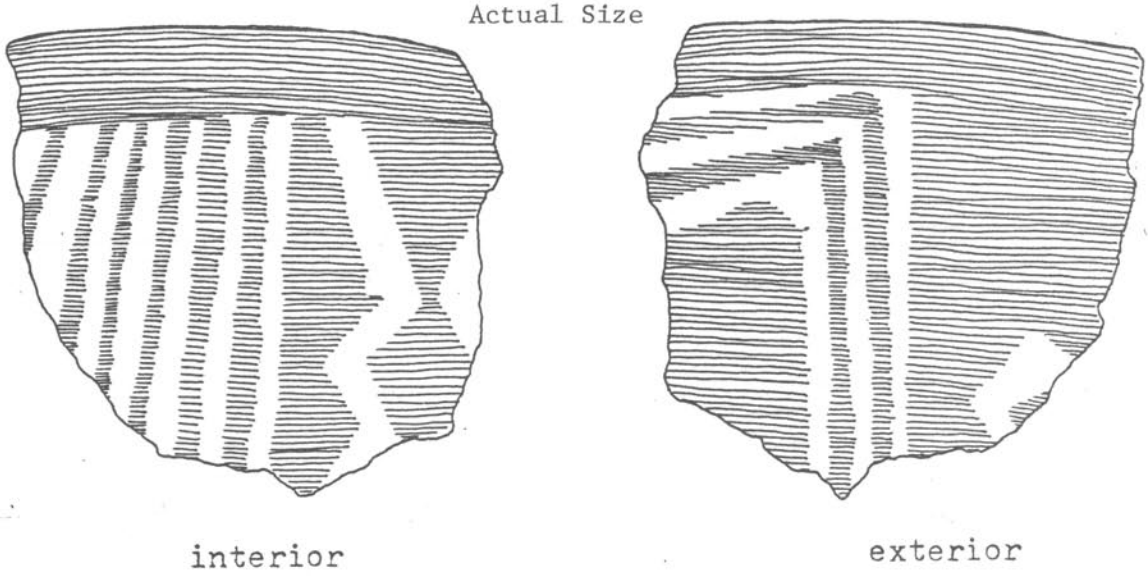
Actual Size



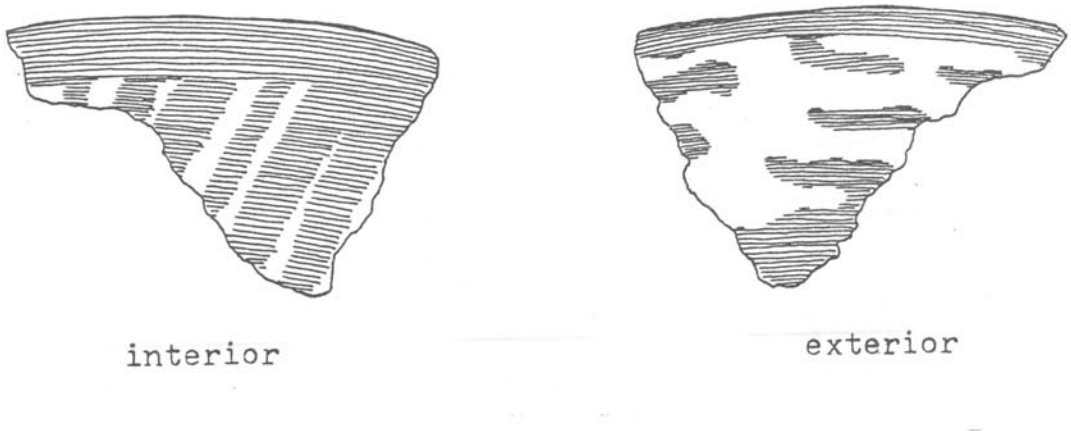
Potential Type Chupicuaro Painted A

Figure 37

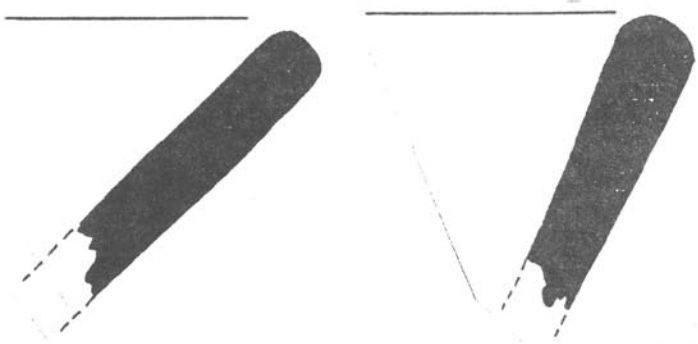
Actual Size



interior exterior



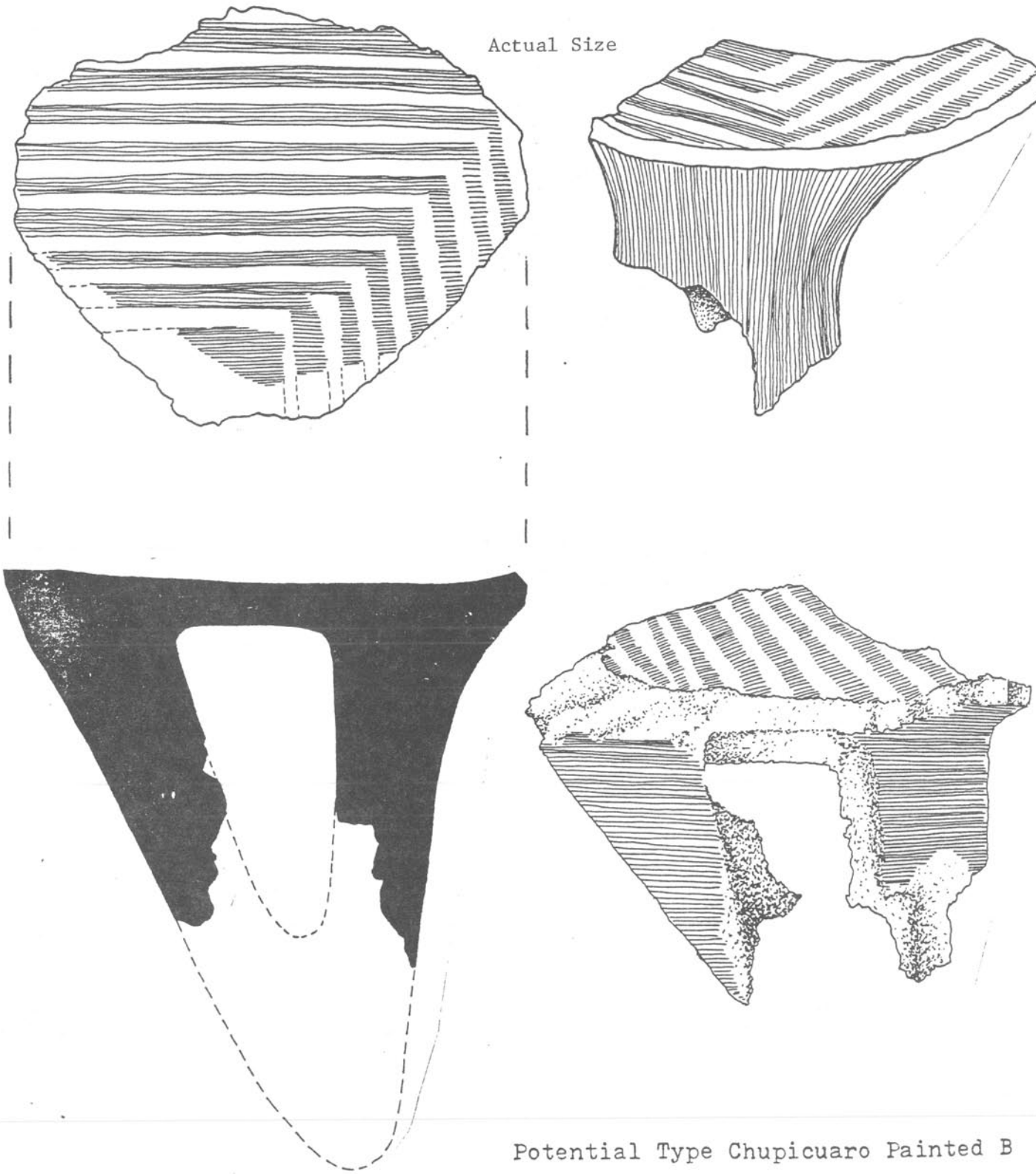
interior exterior



SPIDER-LEG TRIPODS

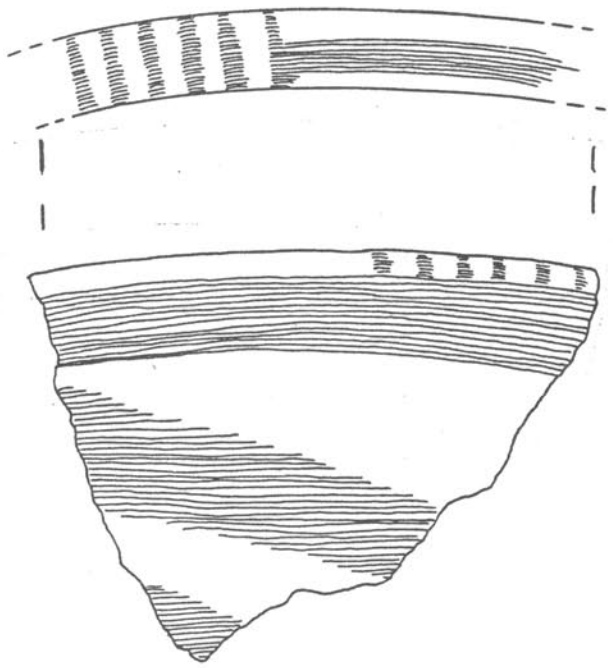
Potential Type Chupicuaro Painted B

Figure 38

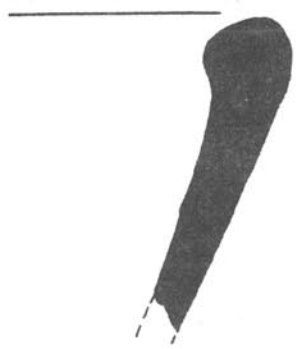


Potential Type Chupicuaro Painted B

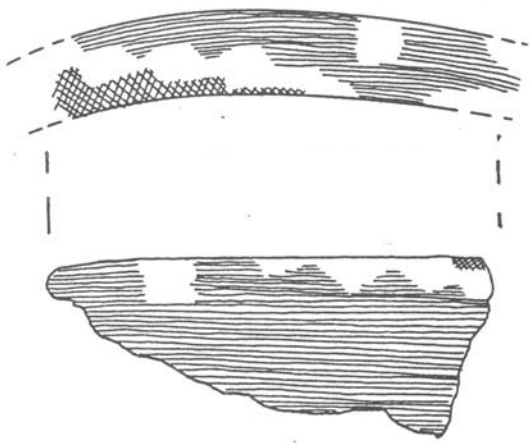
Figure 39

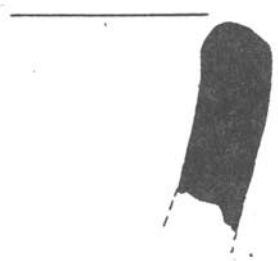


Actual Size

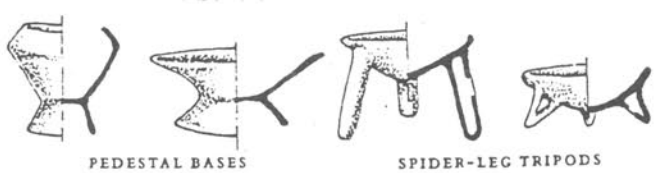


exterior



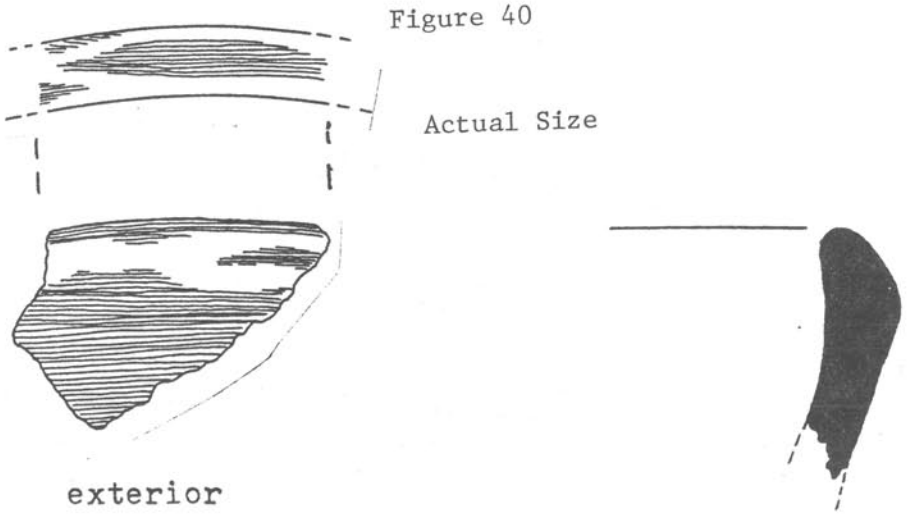


interior



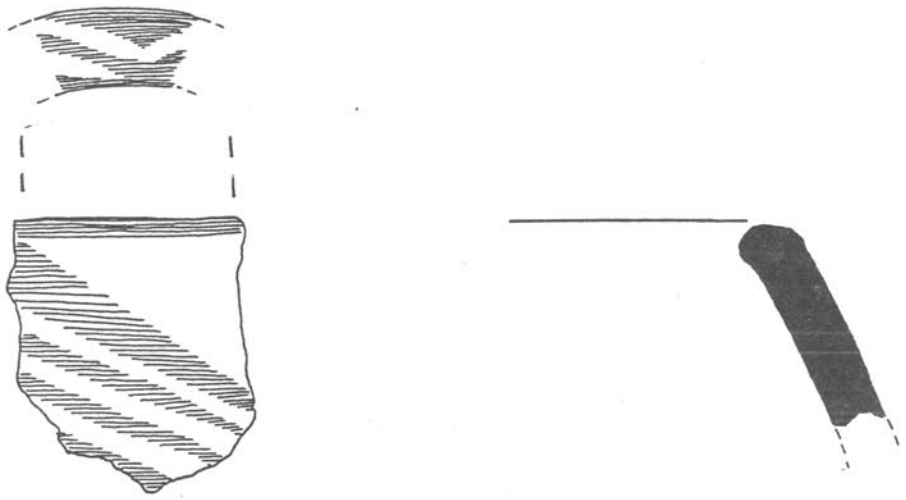
Potential Type
Chupicuaro Painted C

Figure 40



Actual Size

exterior



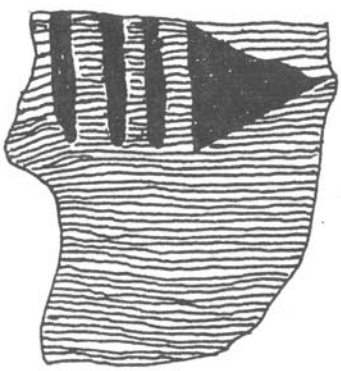
exterior

exterior

Potential Type Chupicuaro Painted C

Figure 41

Actual Size



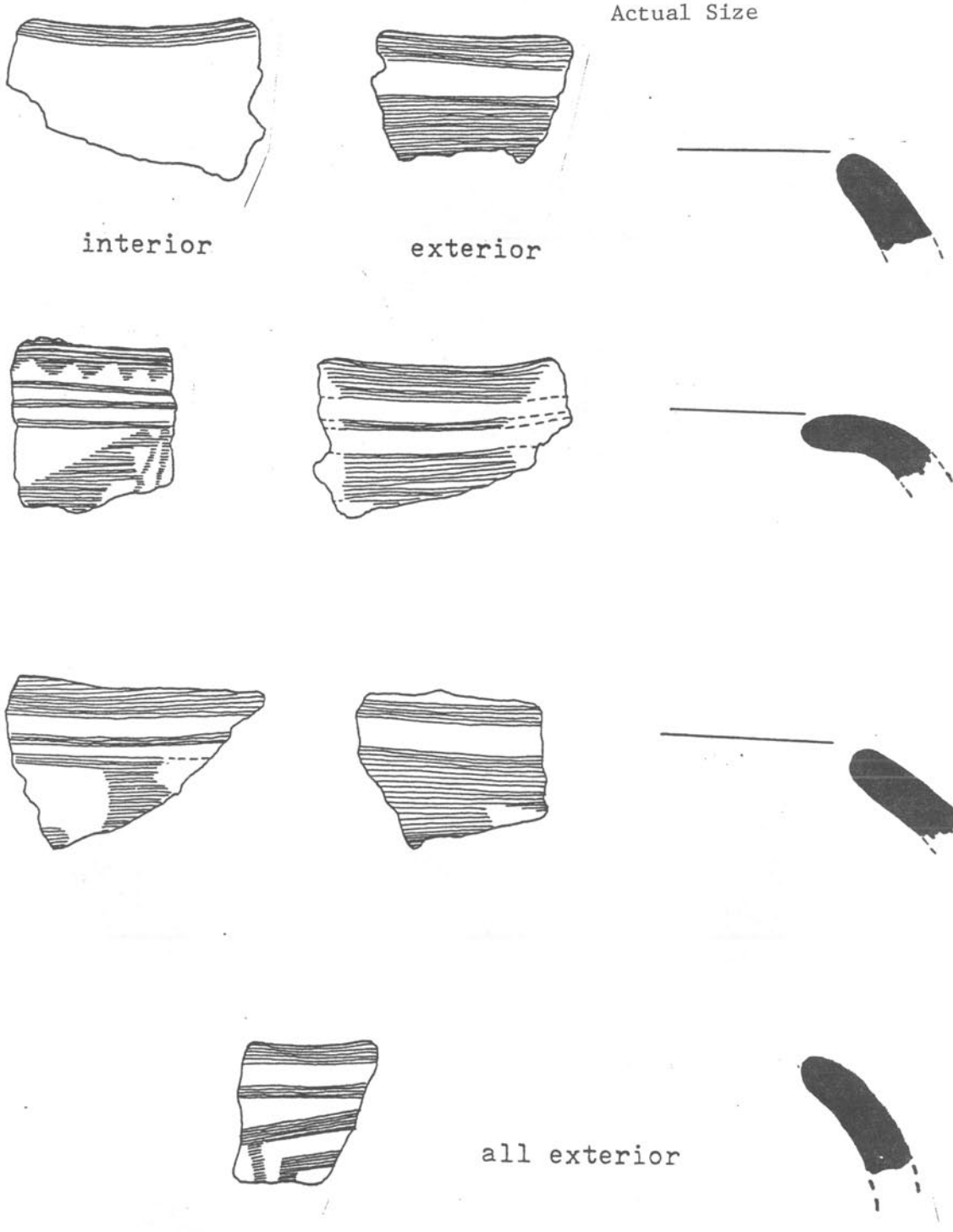
interior

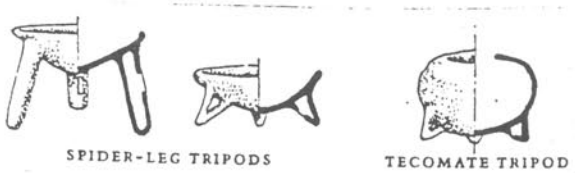
BASAL-BREAK BOWLS

Potential Type Chupicuaro Painted D

Figure 42

Actual Size

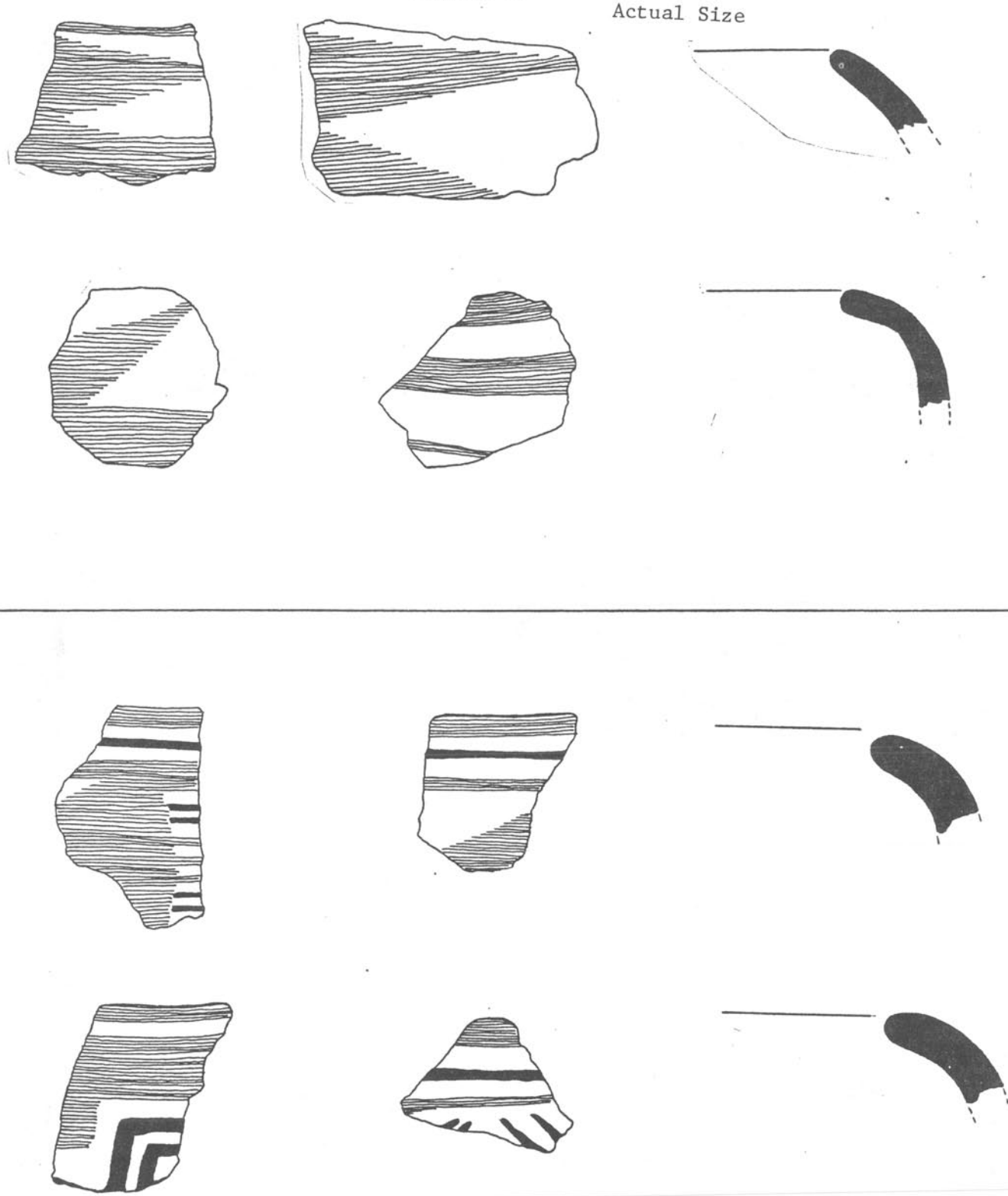




Potential Type Chupicuaro Painted E

Figure 43

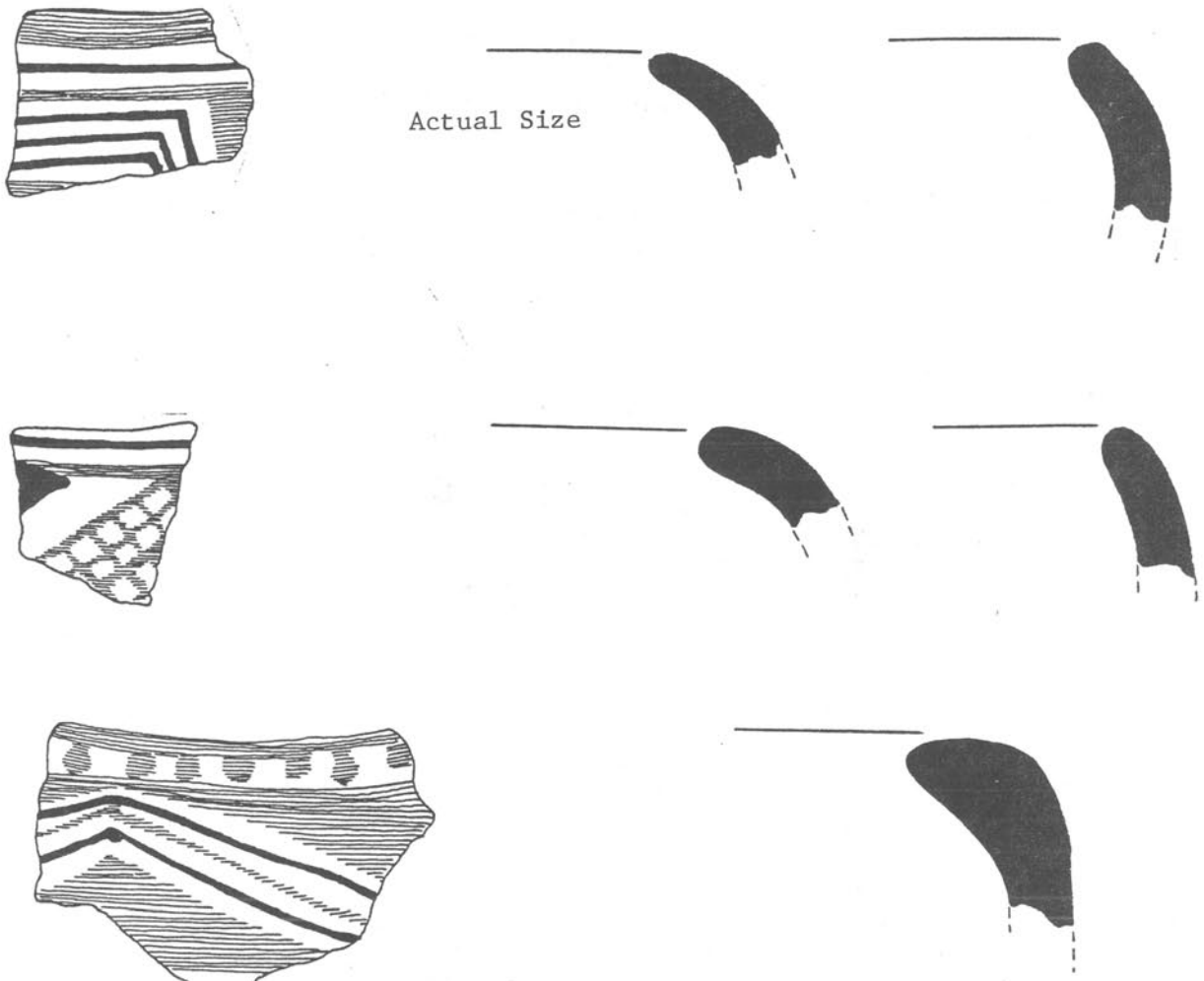
Actual Size



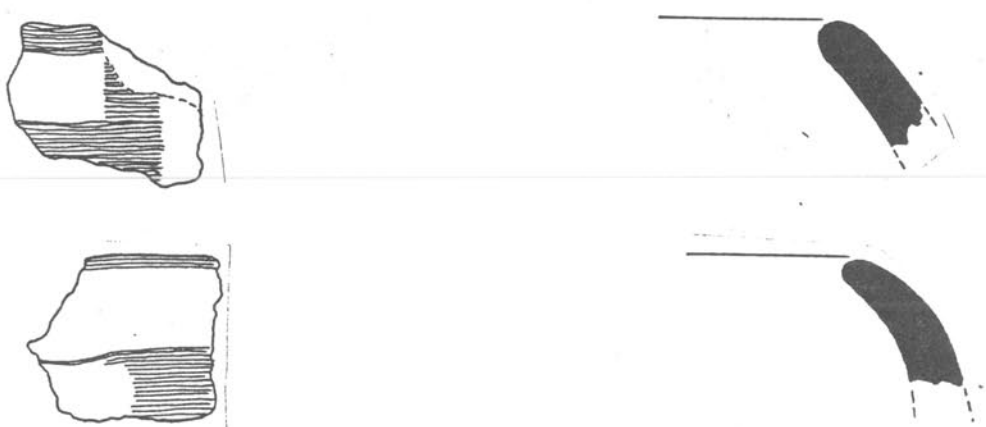
all exterior

Potential Type Chupicuaro Painted E

Figure 44

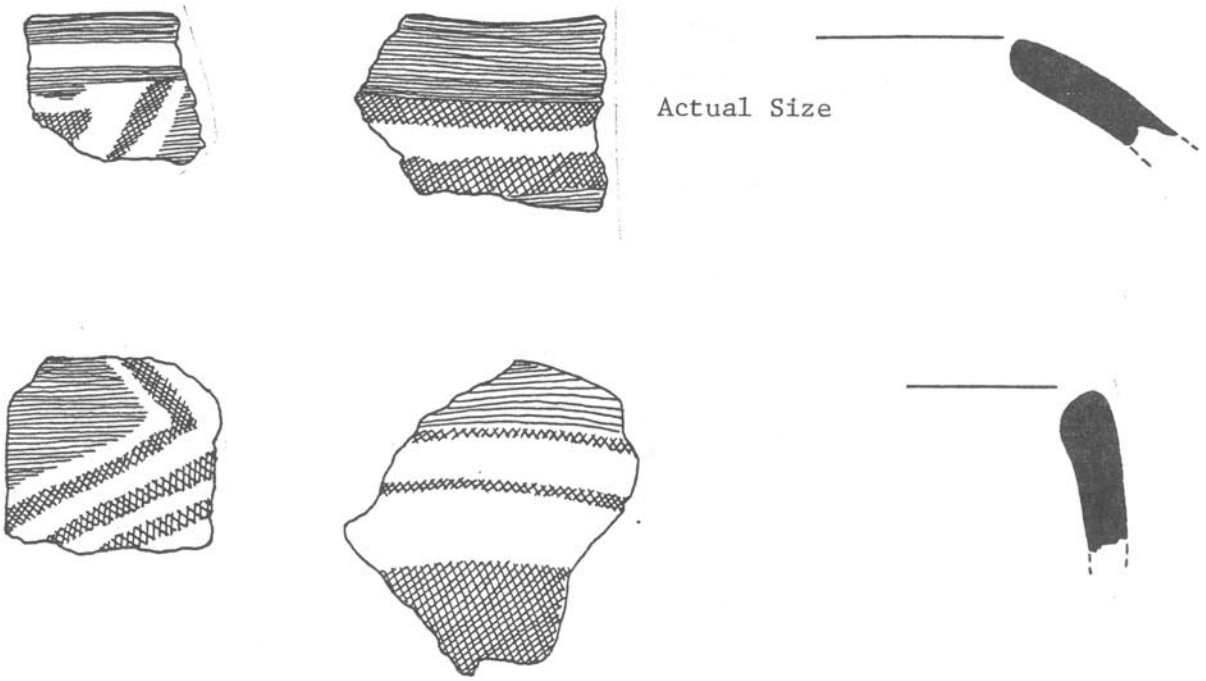


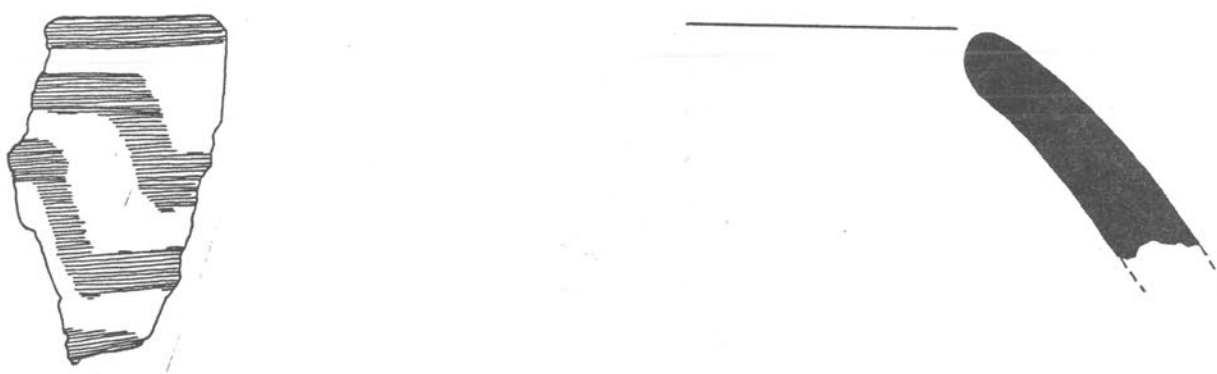
all exterior



Potential Type Chupicuaro Painted E

Figure 45



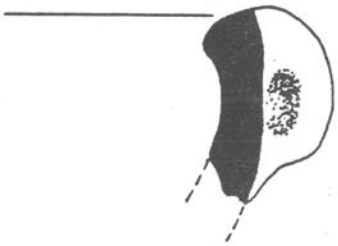


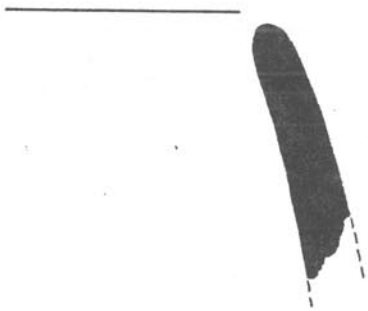
all exterior

Potential Type Chupicuaro Painted E

Figure 46

Actual Size

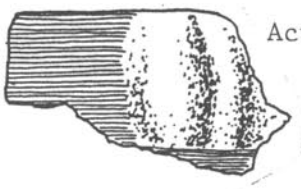




all exterior

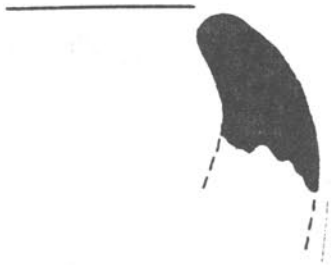
Potential Type Chupicuaro Painted E

Figure 47



Actual Size

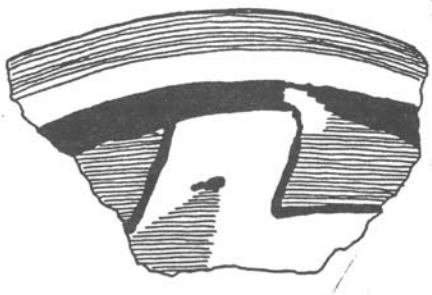
exterior



Potential Type Chupicuaro Painted E

Figure 48

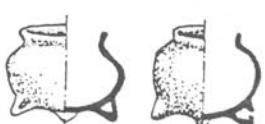
Actual Size



interior

interior

BODY-BREAK BOWL

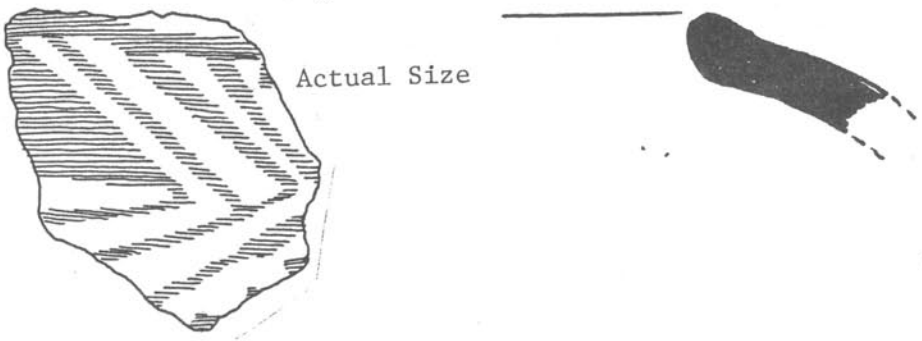


GLOBULAR TRIPODS

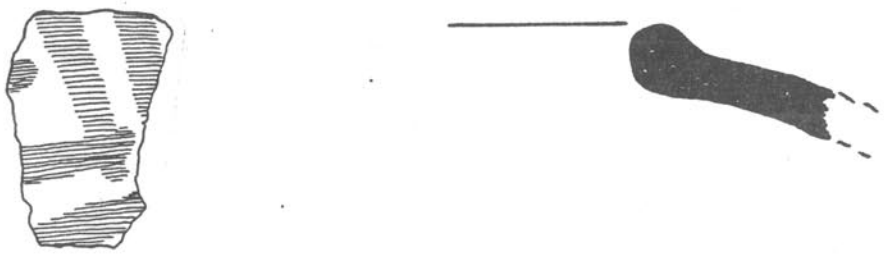
BODY-BREAK TRIPOD

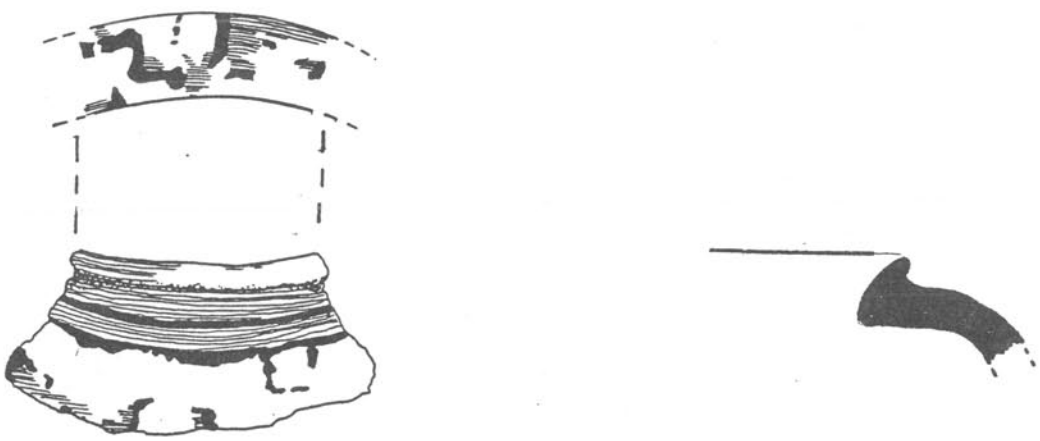
Potential Type Chupicuaro Painted F

Figure 49

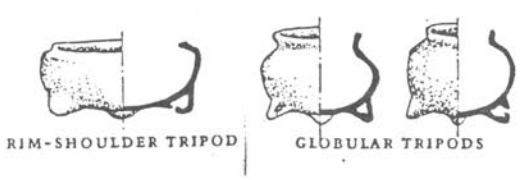


Actual Size





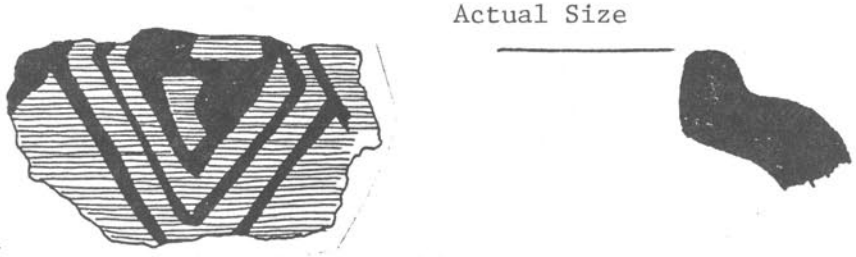
all exterior



Potential Type Chupicuaro Painted G

Figure 50

Actual Size



all exterior

Potential Type
Chupicuaro Painted G

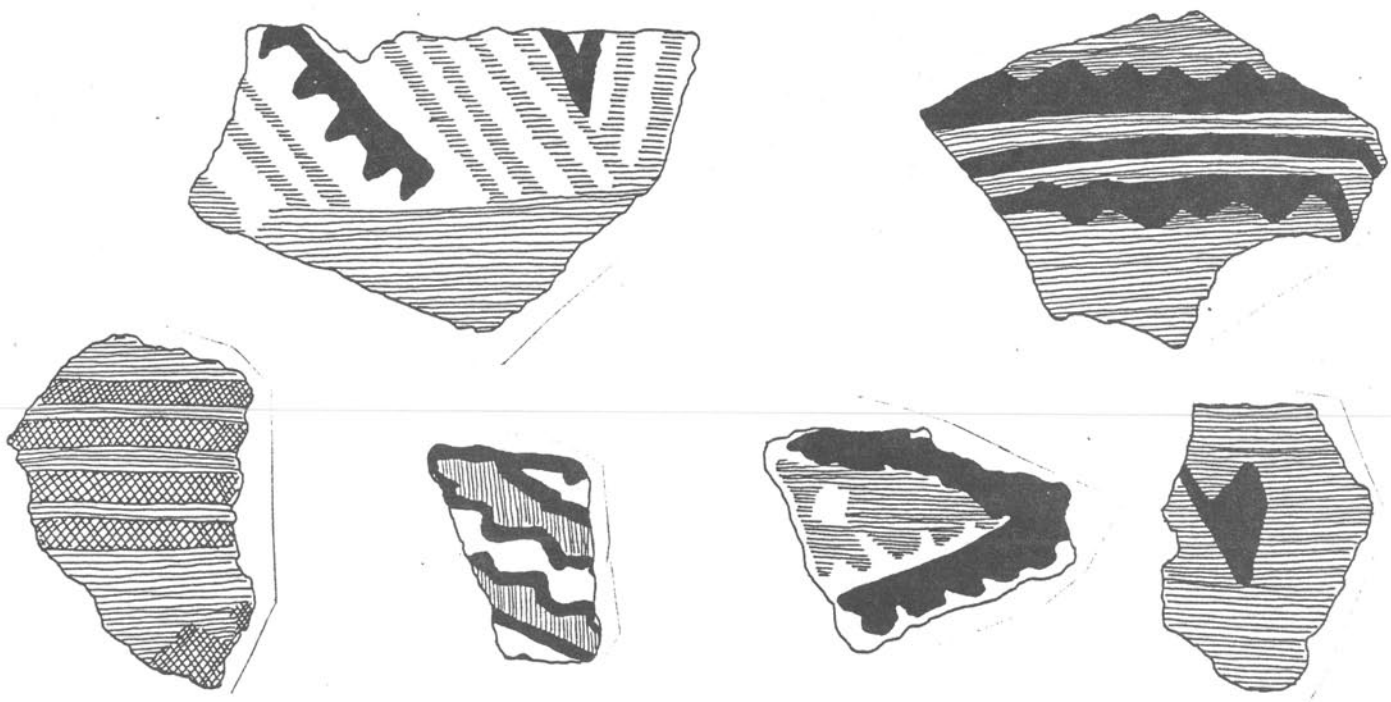
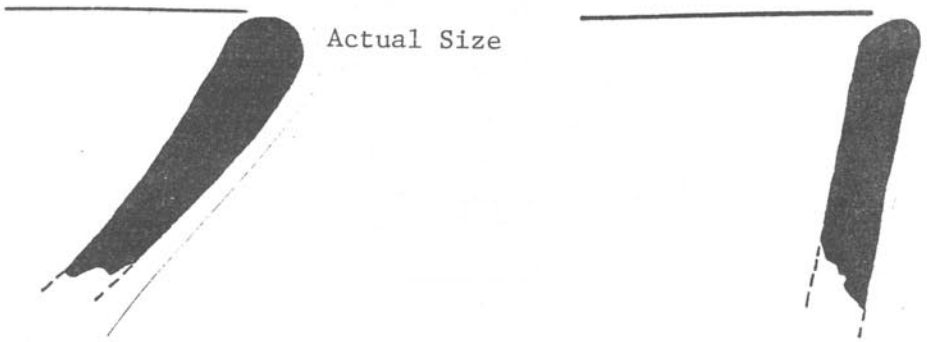
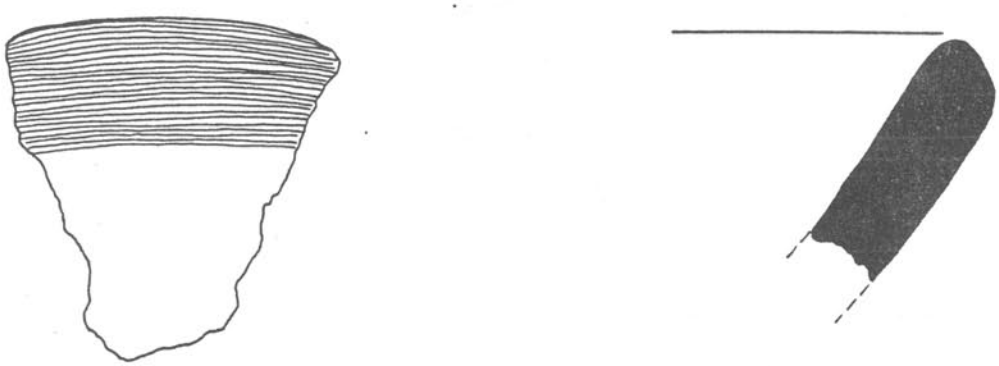
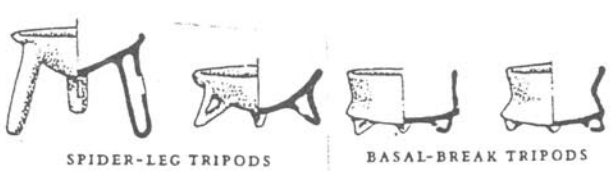


Figure 51



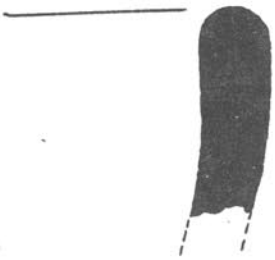




Potential Type Chupicuaro Painted

Figure 52

Actual Size



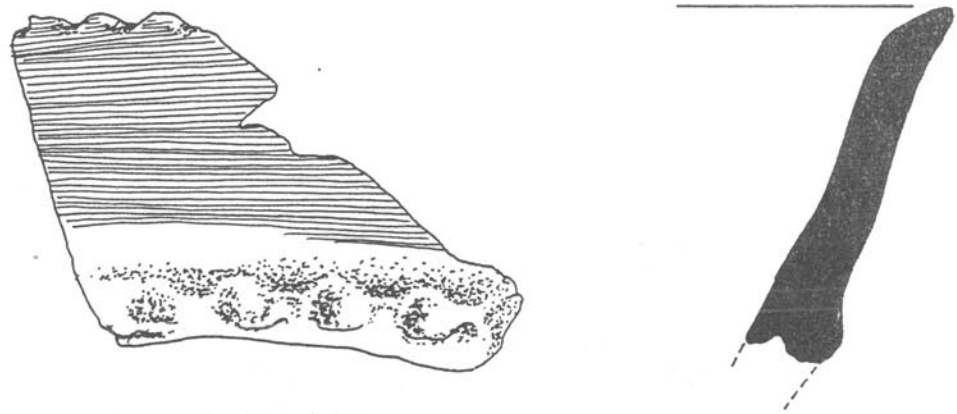
interior

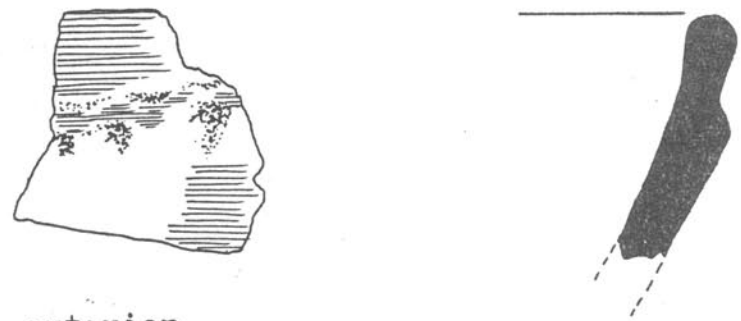
exterior

Potential Type Chupicuaro Painted H

Figure 53

Actual Size



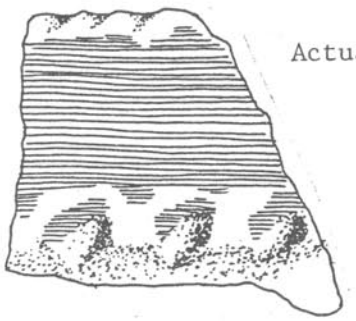



BASAL-BREAK BOWLS

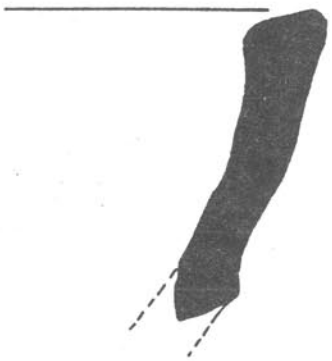

BASAL-BREAK TRIPODS

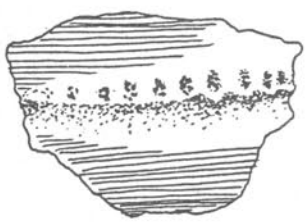
Potential Type Chupicuaro Painted I

Figure 54



Actual Size



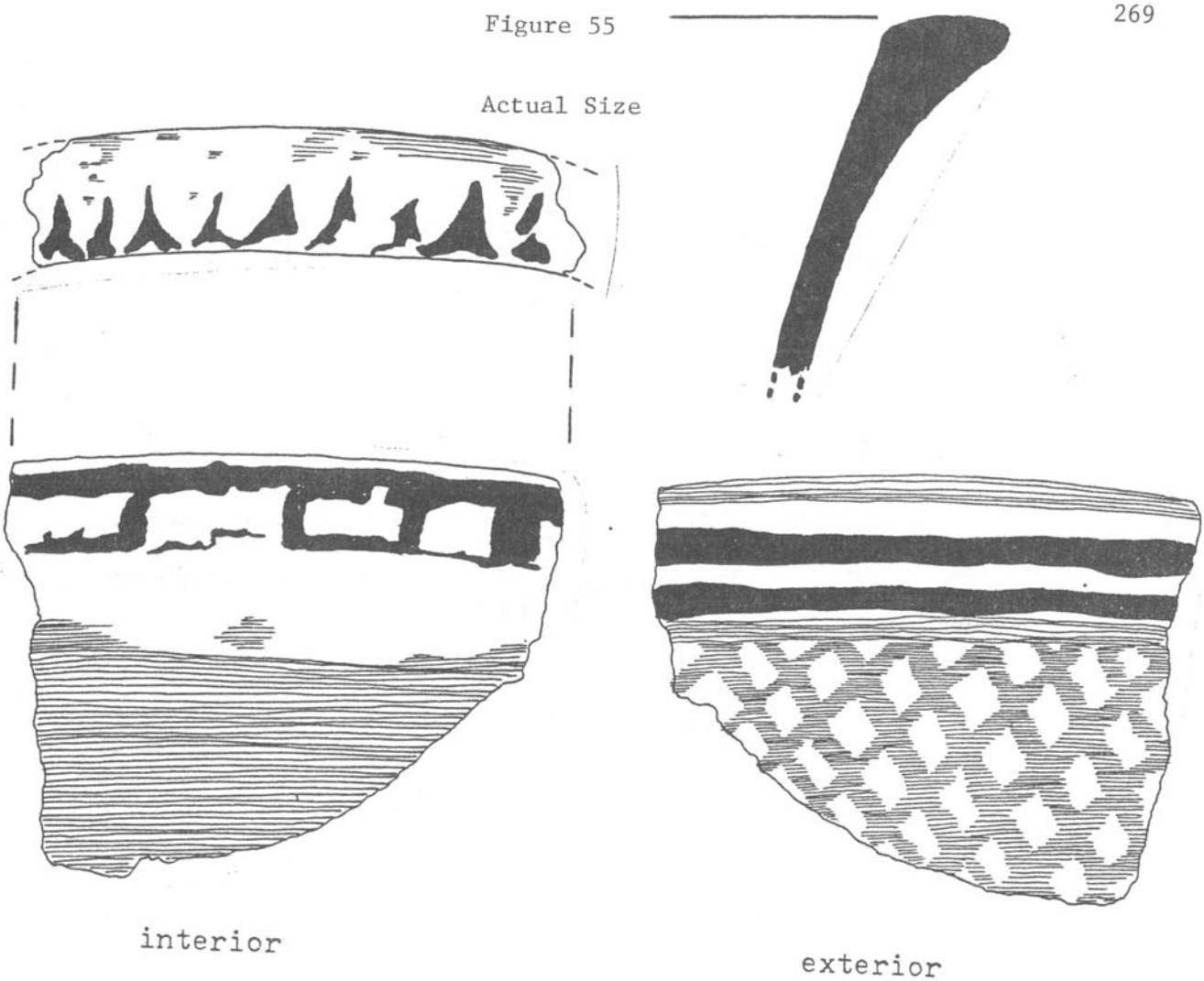


all exterior

Potential Type Chupicuaro Painted I

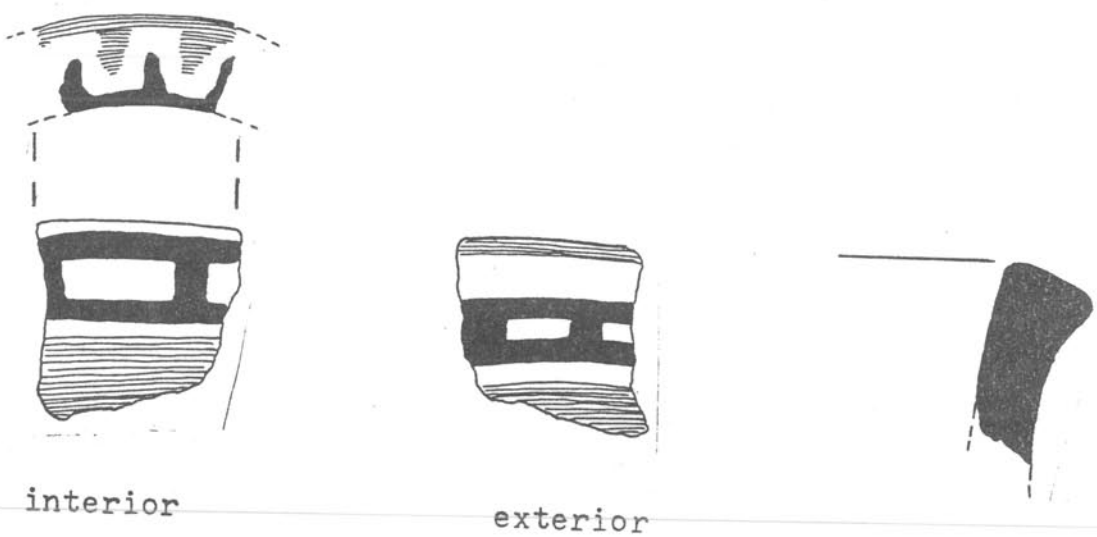
Figure 55

Actual Size



interior

exterior



interior

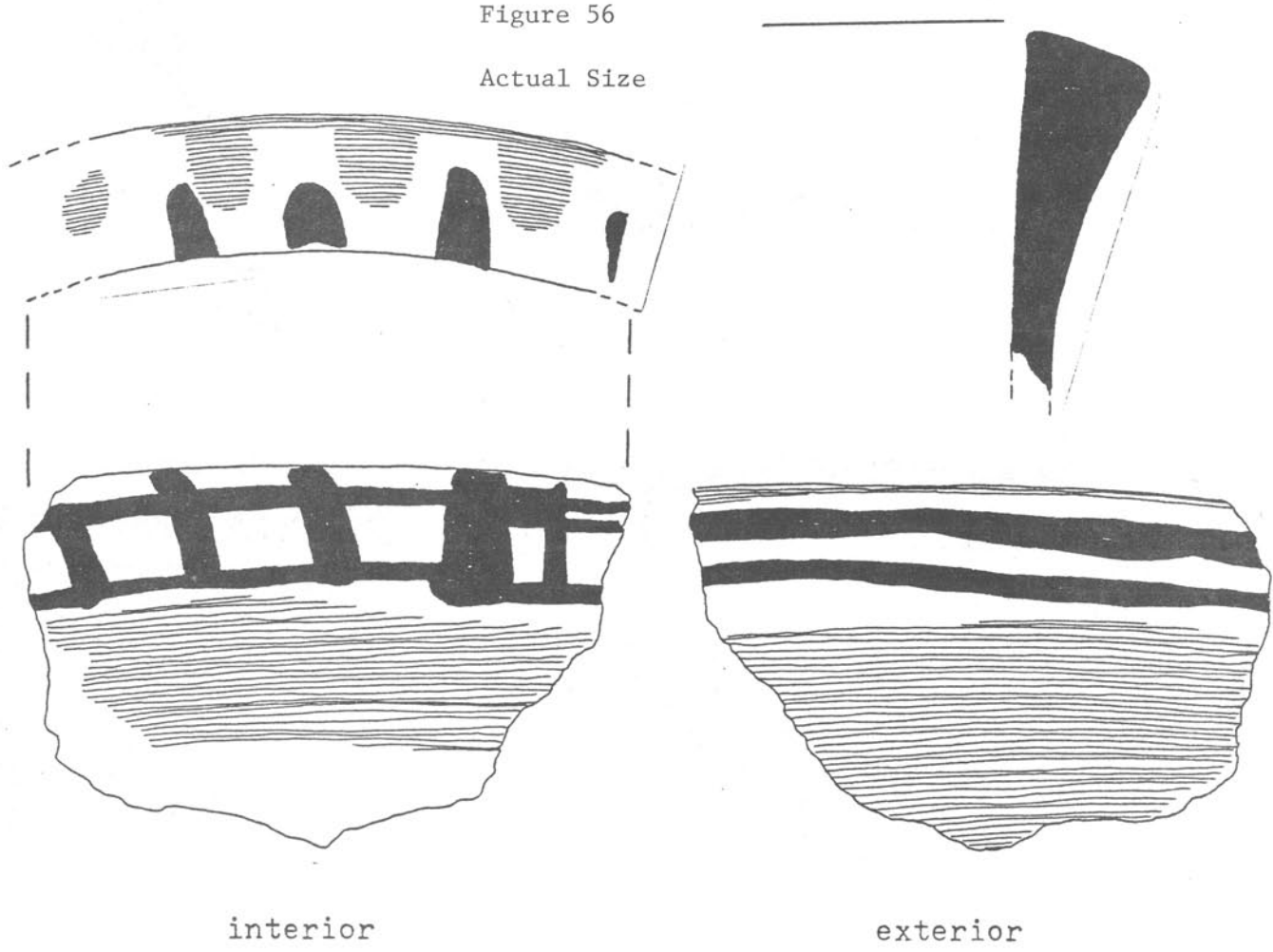
exterior

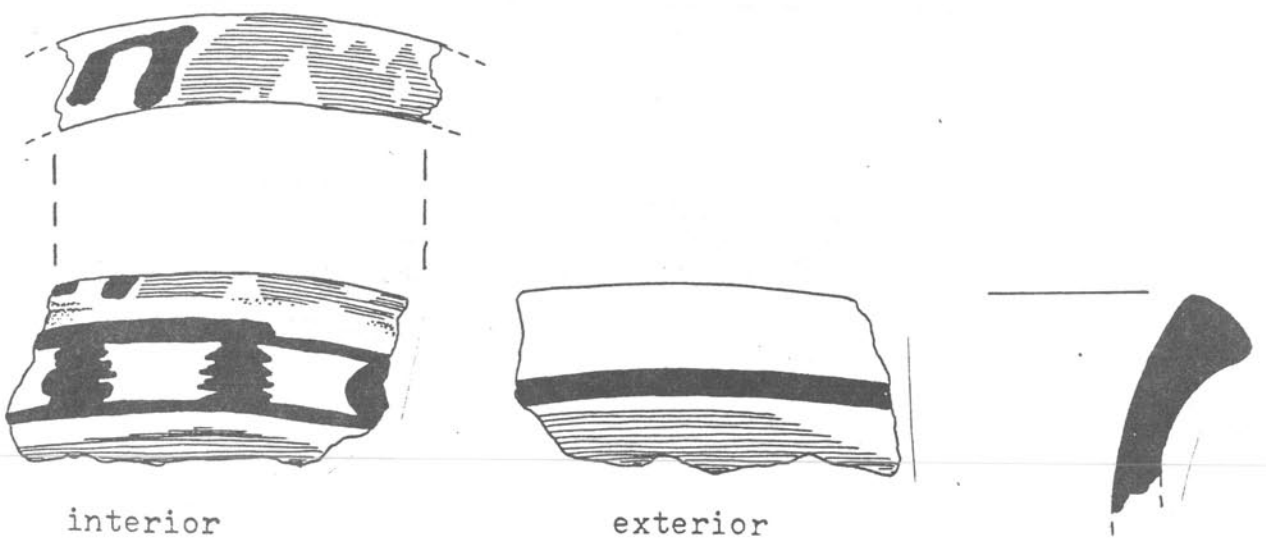
BASAL-BREAK BOWLS

Potential Type Iramuco Polychrome A

Figure 56

Actual Size

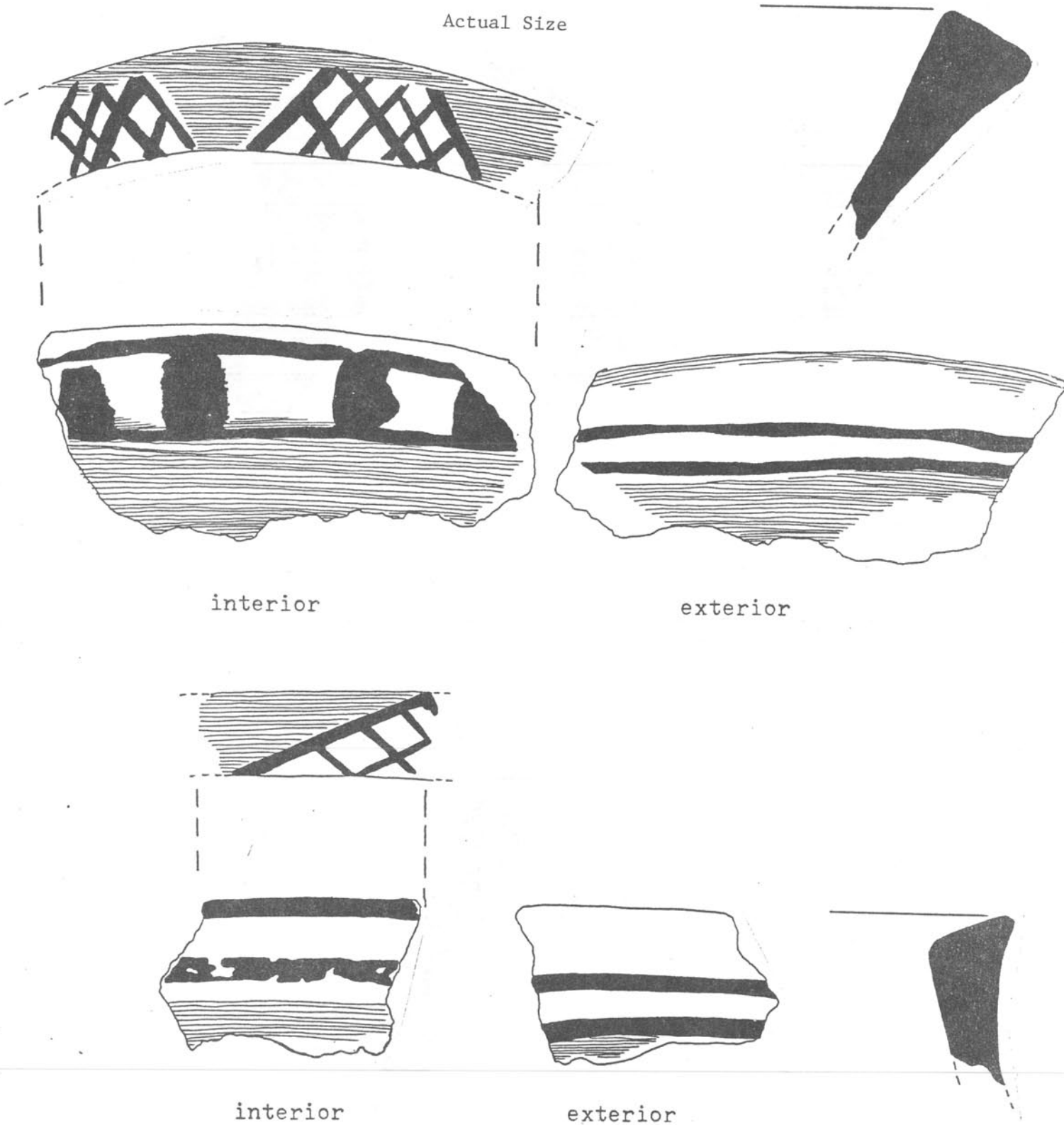




Potential Type Iramuco Polychrome A

Figure 57

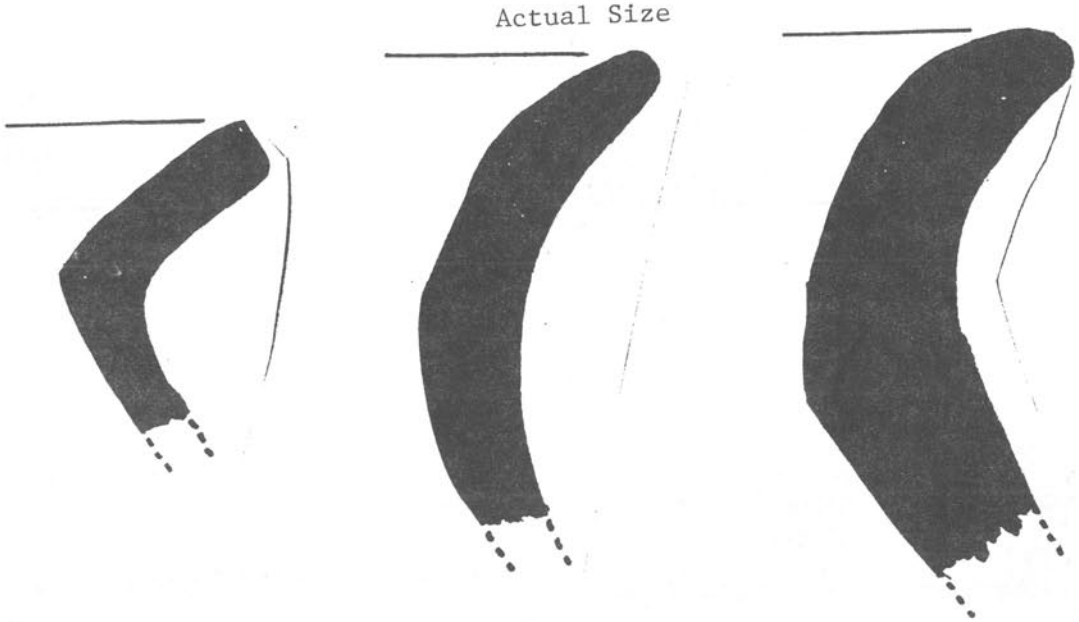
Actual Size



Potential Type Iramuco Polychrome A

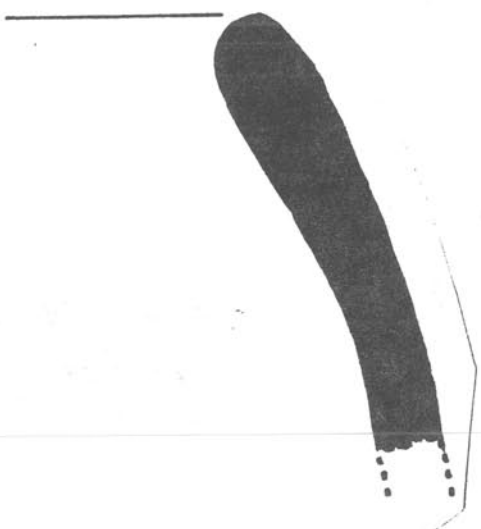
Figure 58

Actual Size



OLLAS

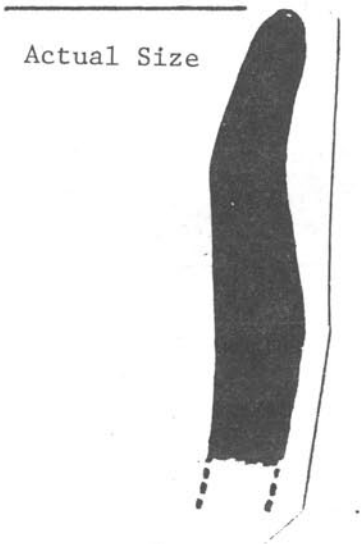
Potential Type Paso Ancho Red Rim B



TECOMATE TRIPOD

Potential Type Paso Ancho Red Rim C

Figure 59

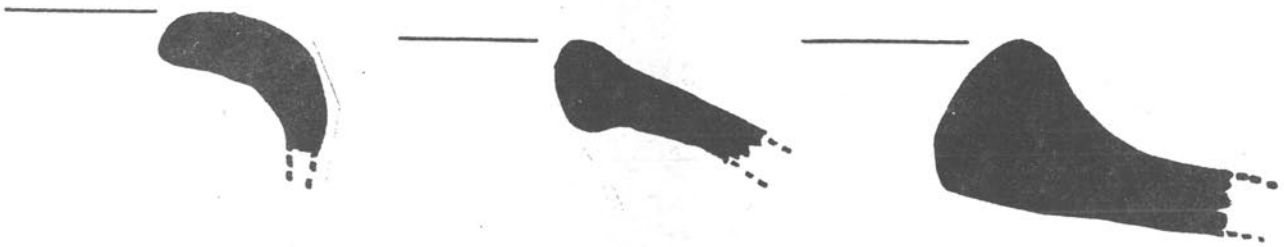


NO VESSEL FORM SUGGESTED

Potential Type Paso Ancho Red Rim D

Figure 60

Actual Size



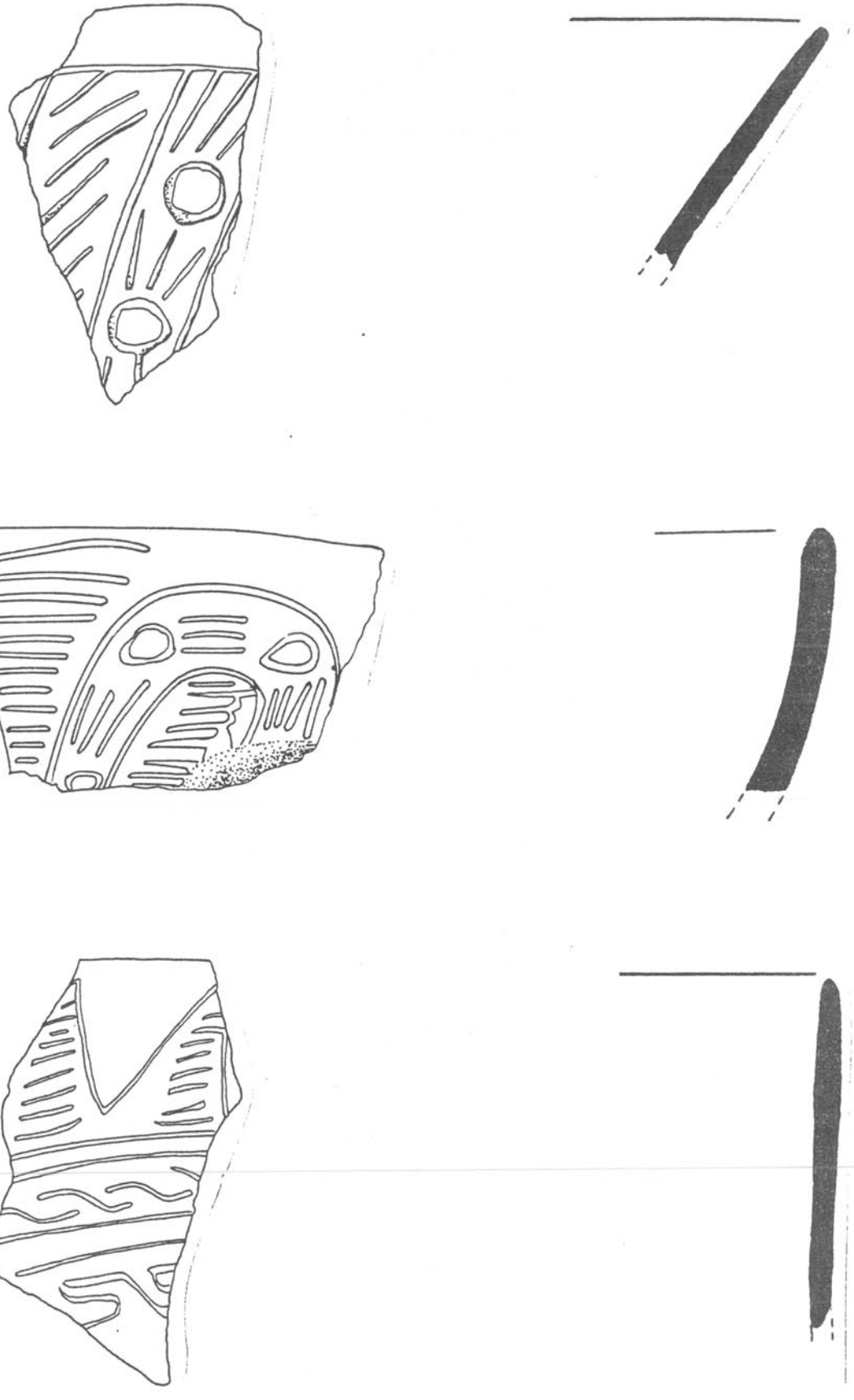
Potential Type Paso Ancho Red Rim A

Figure 61

Potential Type
Garita Black-Brown A (Plain)

Figure 62

Actual Size

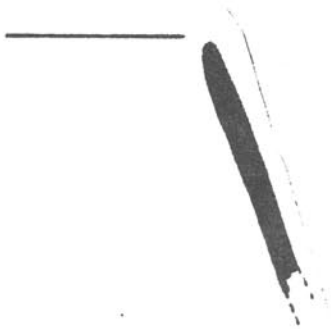


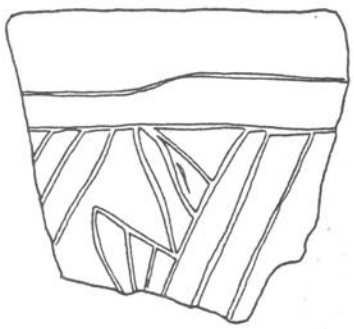
all exterior

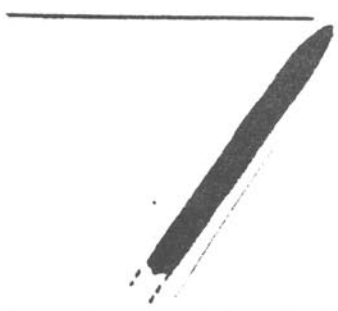
Potential Type Garita Black-Brown B (Incised)

Figure 63

Actual Size





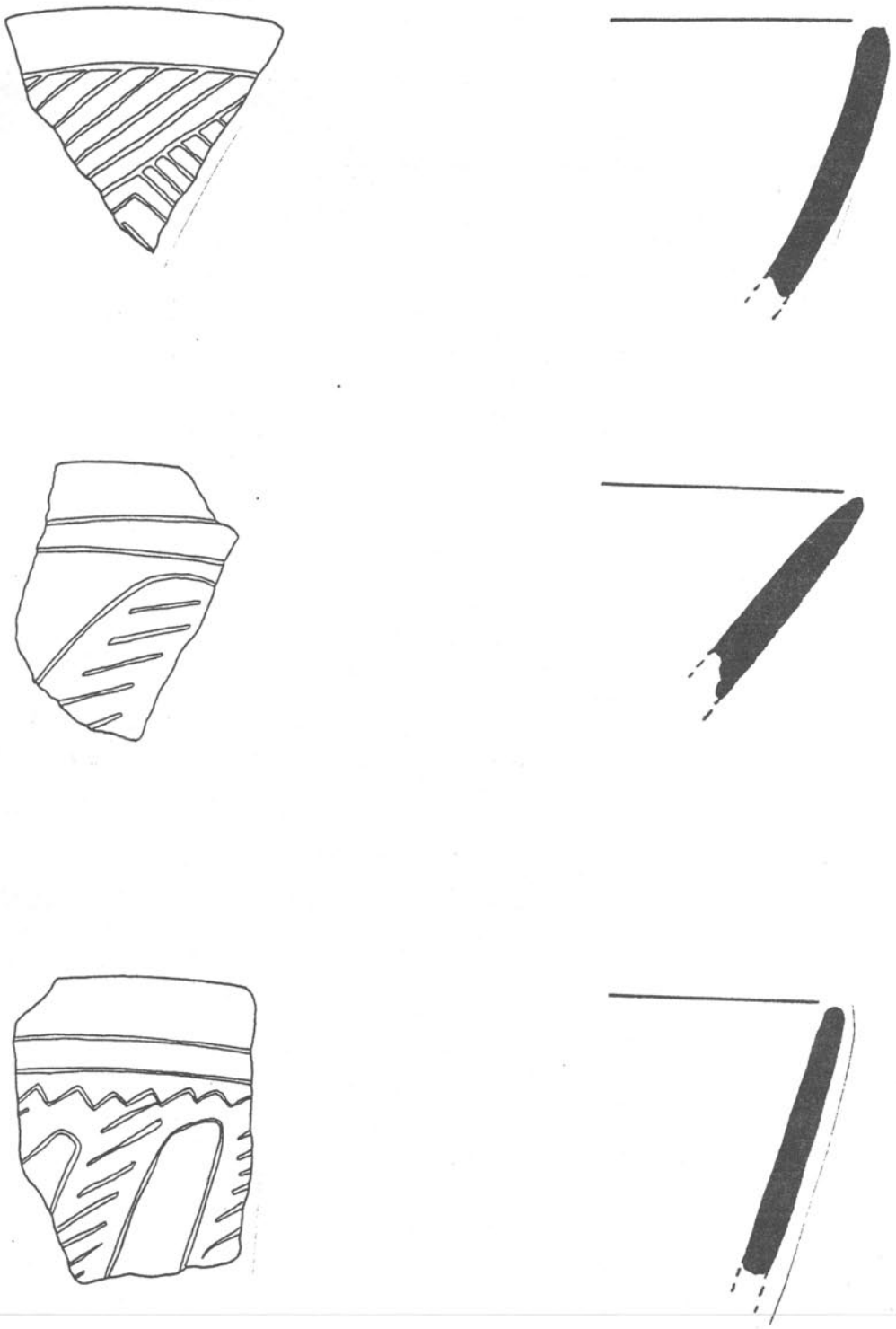


all exterior

Potential Type Garita Black-Brown B (Incised)

Figure 64

Actual Size

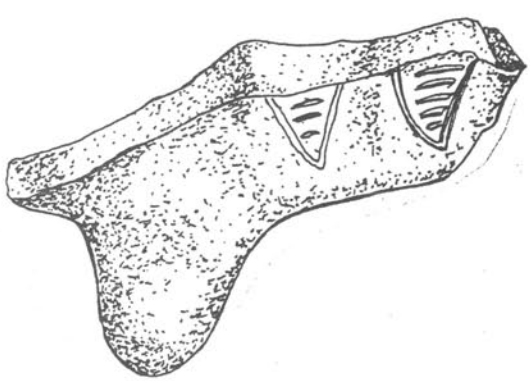


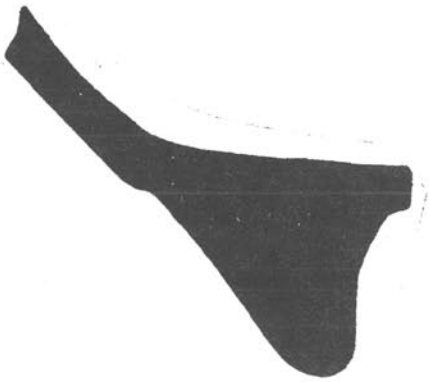
all exterior

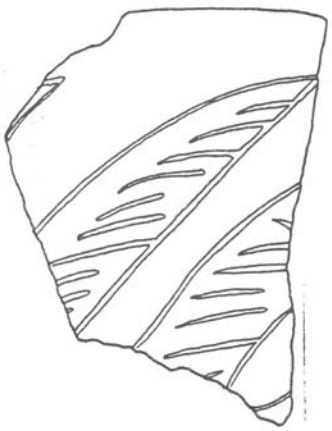
Potential Type Garita Black-Brown B (Incised)

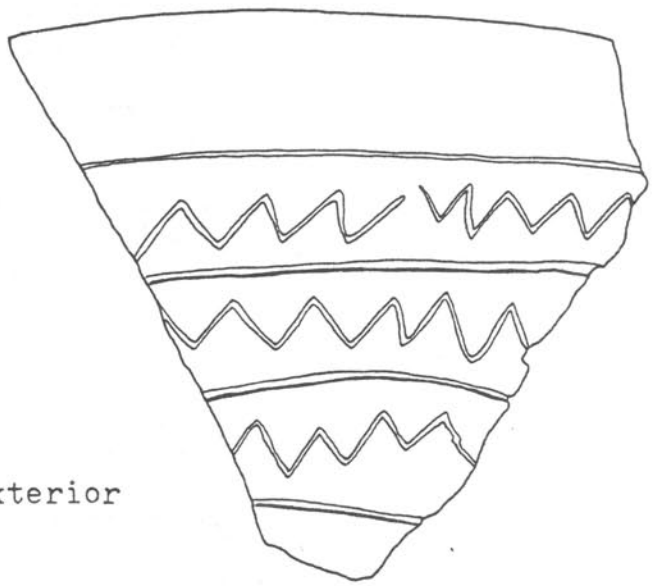
Figure 65

Actual Size

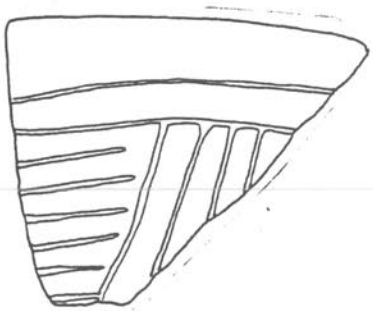








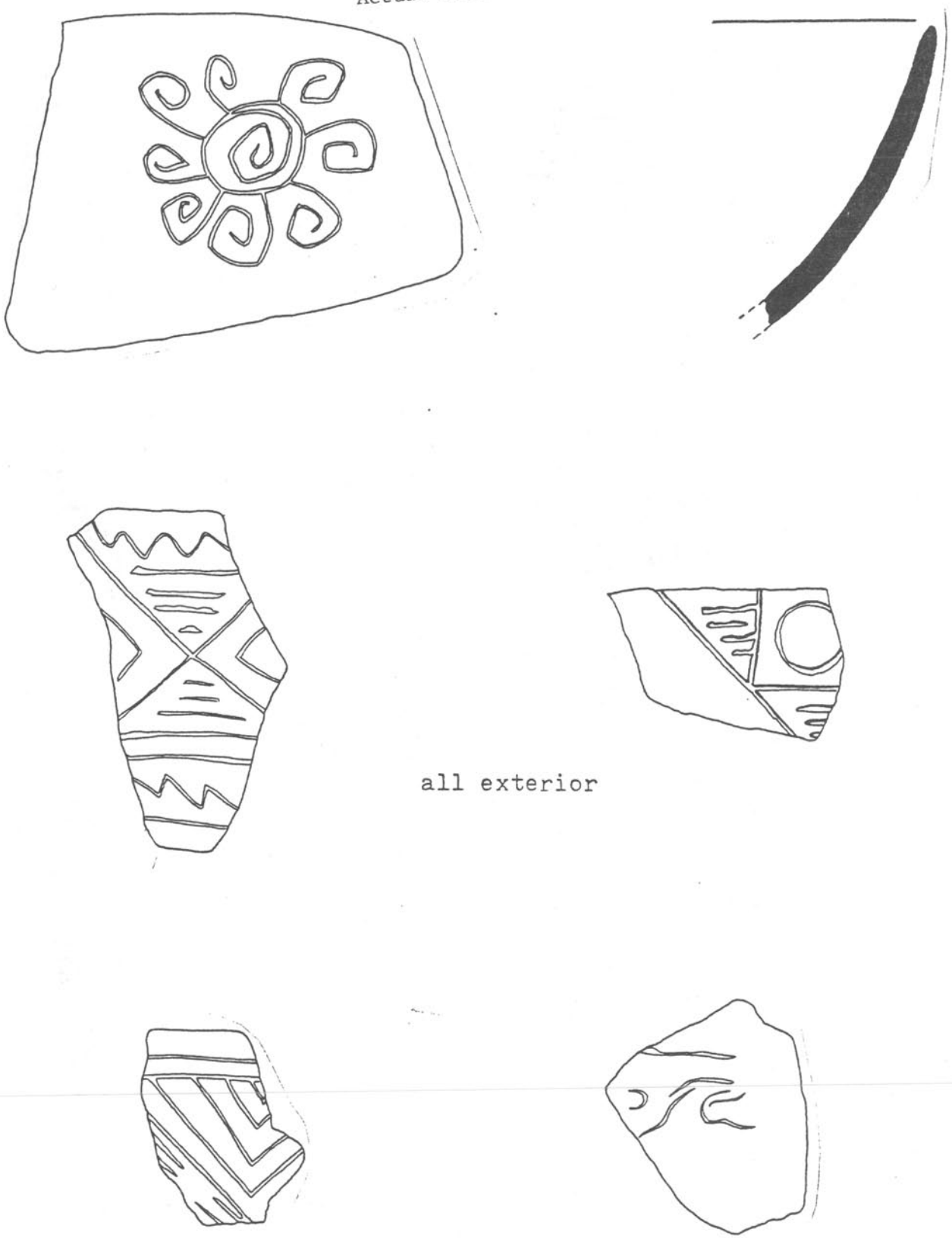
all exterior



Potential Type Garita Black-Brown B (Incised)

Figure 66

Actual Size

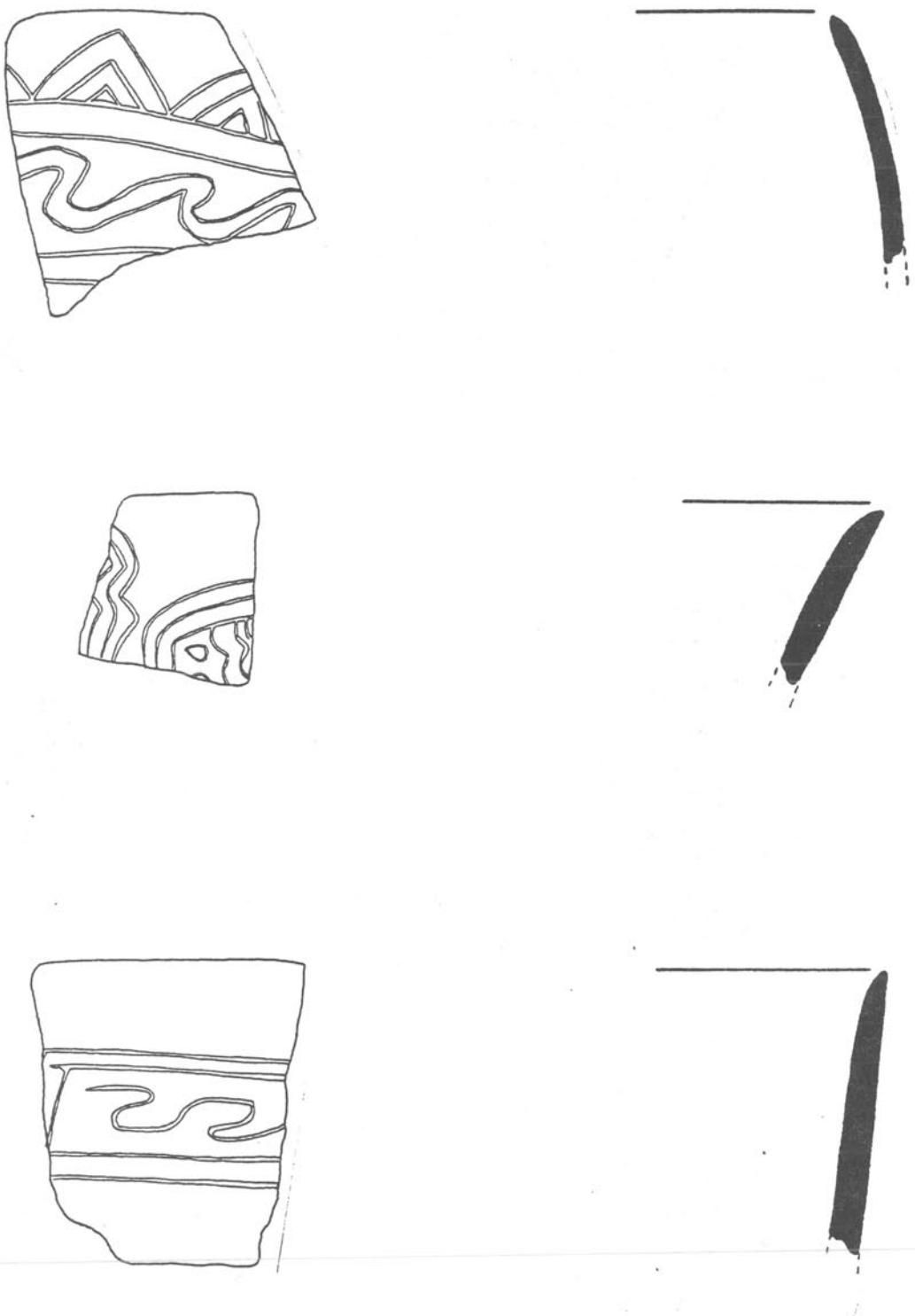


all exterior

Potential Type Garita Black-Brown B (Incised)

Figure 67

Actual Size

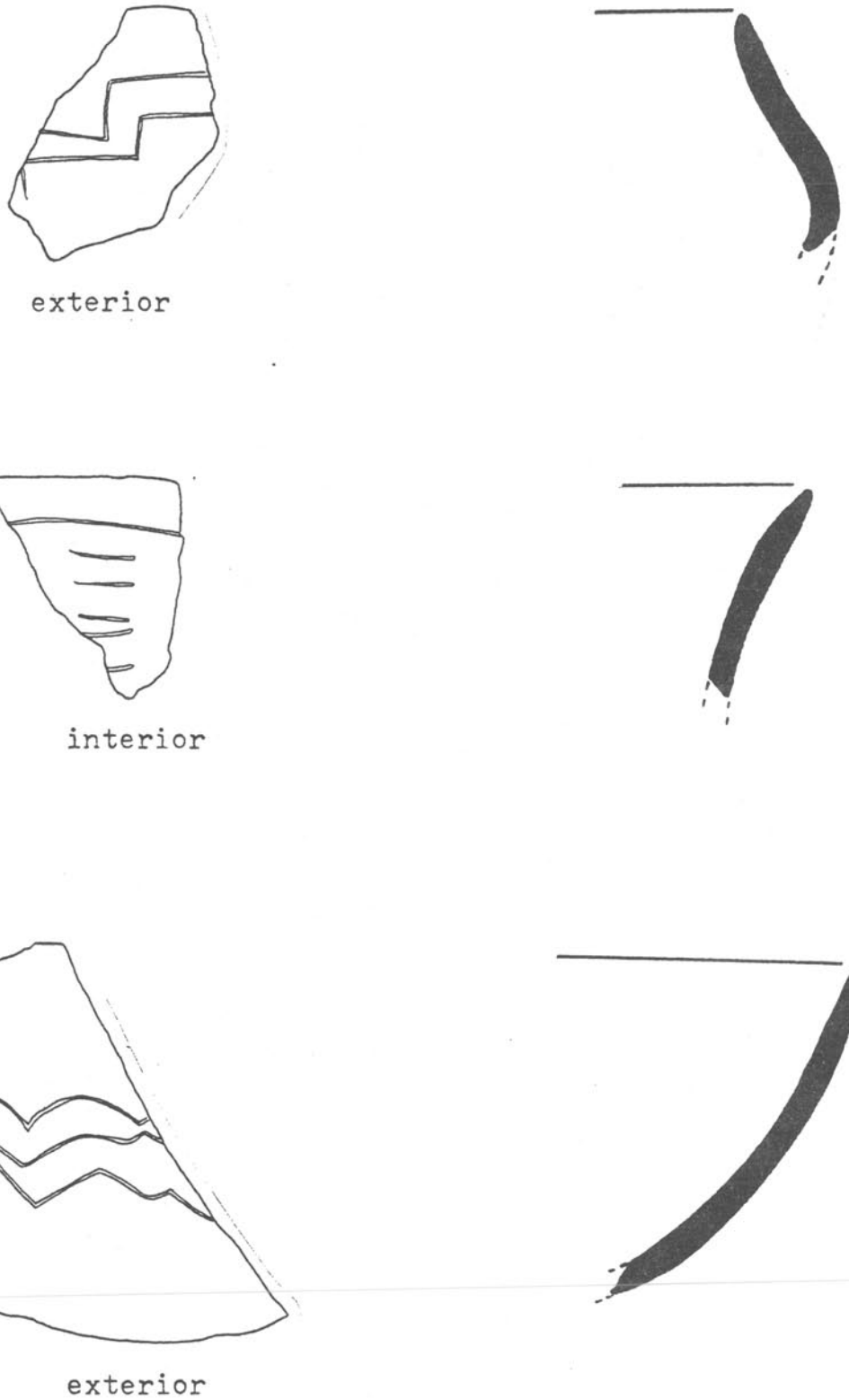


all exterior

Potential Type Garita Black-Brown B (Incised)

Figure 68

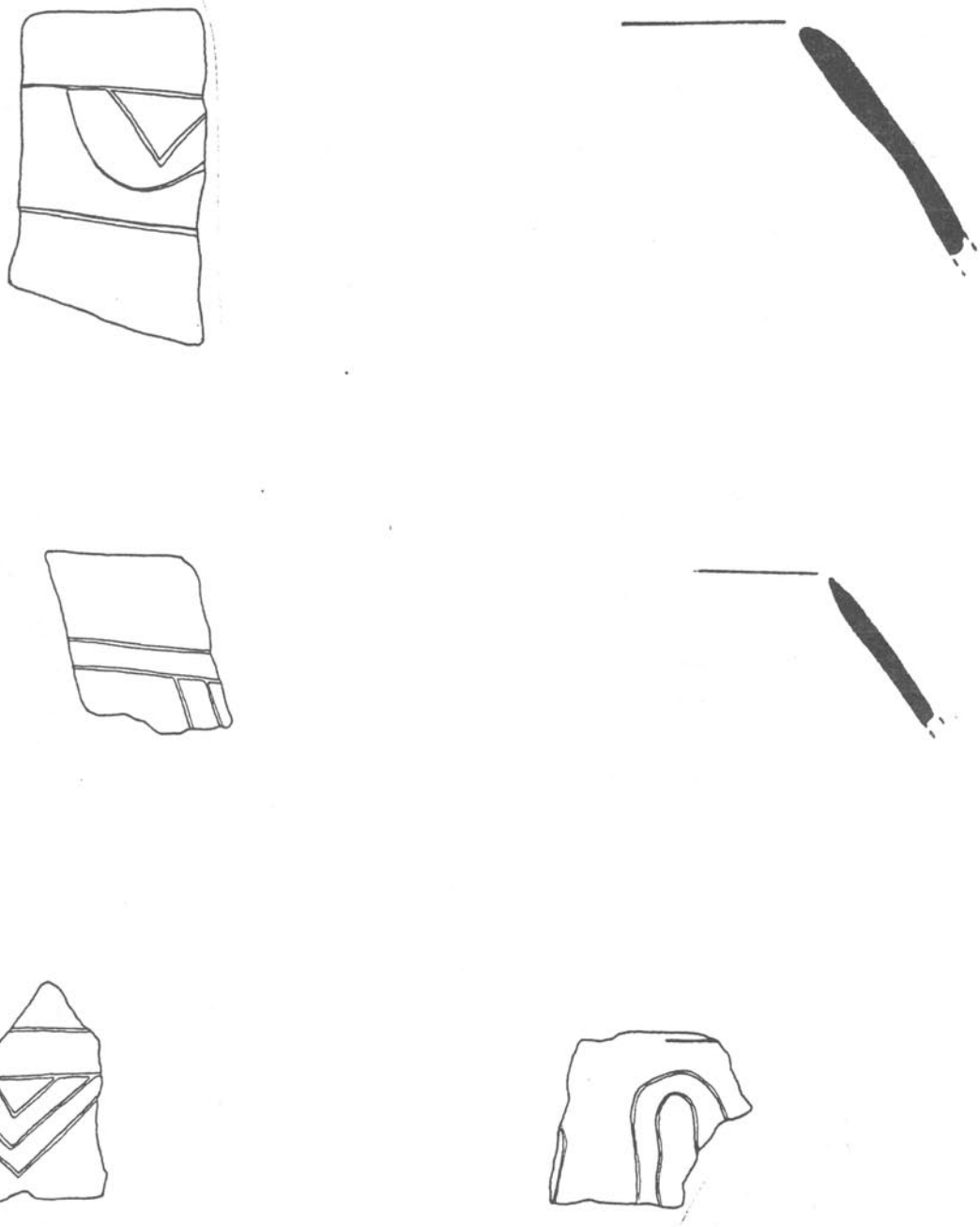
Actual Size



Potential Type Garita Black-Brown B (Incised)

Figure 69

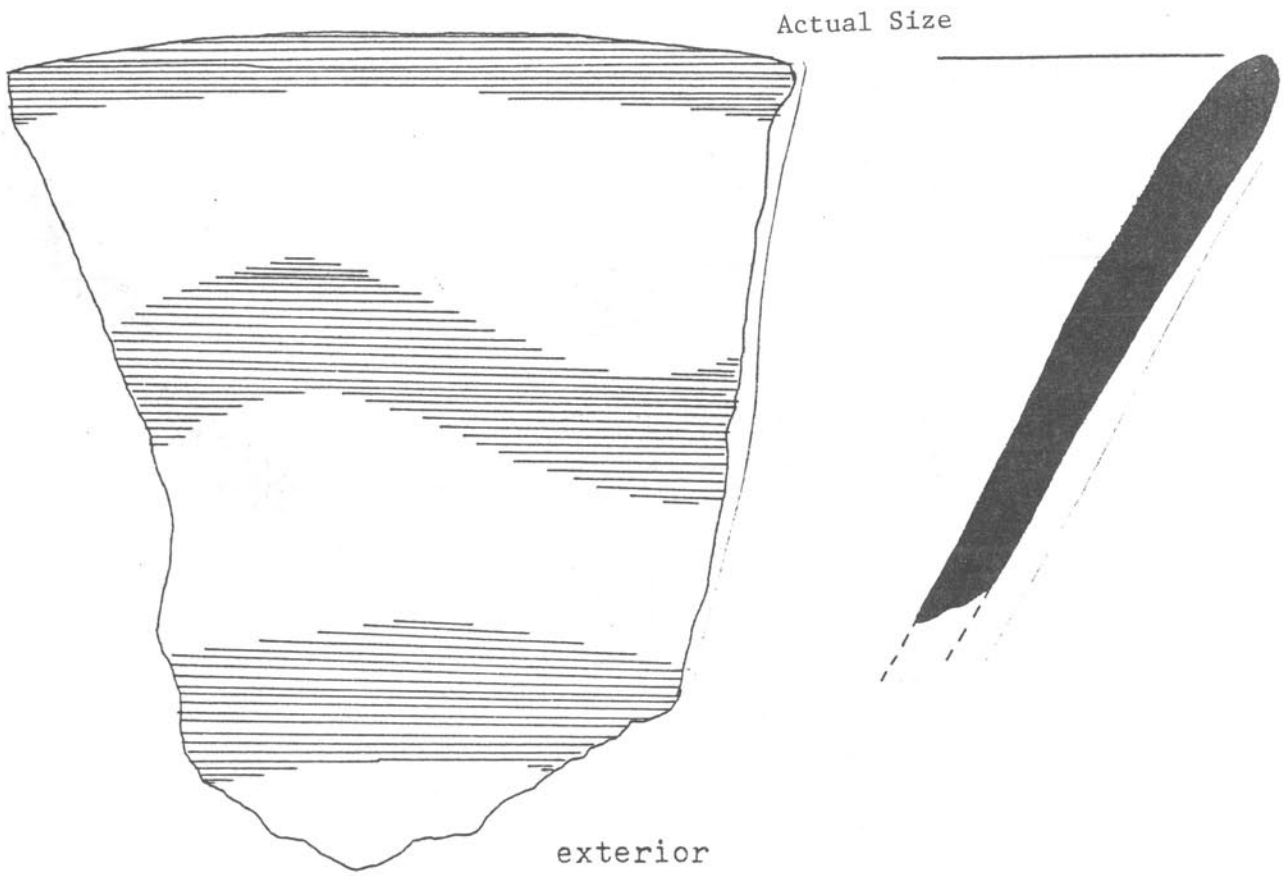
Actual Size

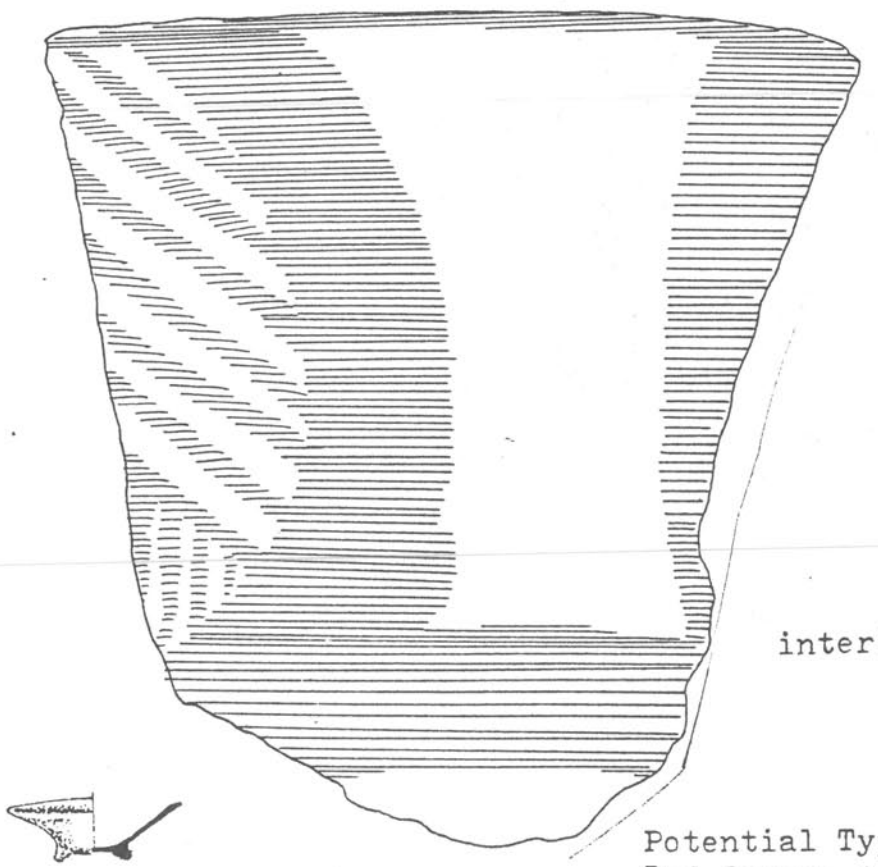


all exterior

Potential Type Garita Black-Brown B (Incised)

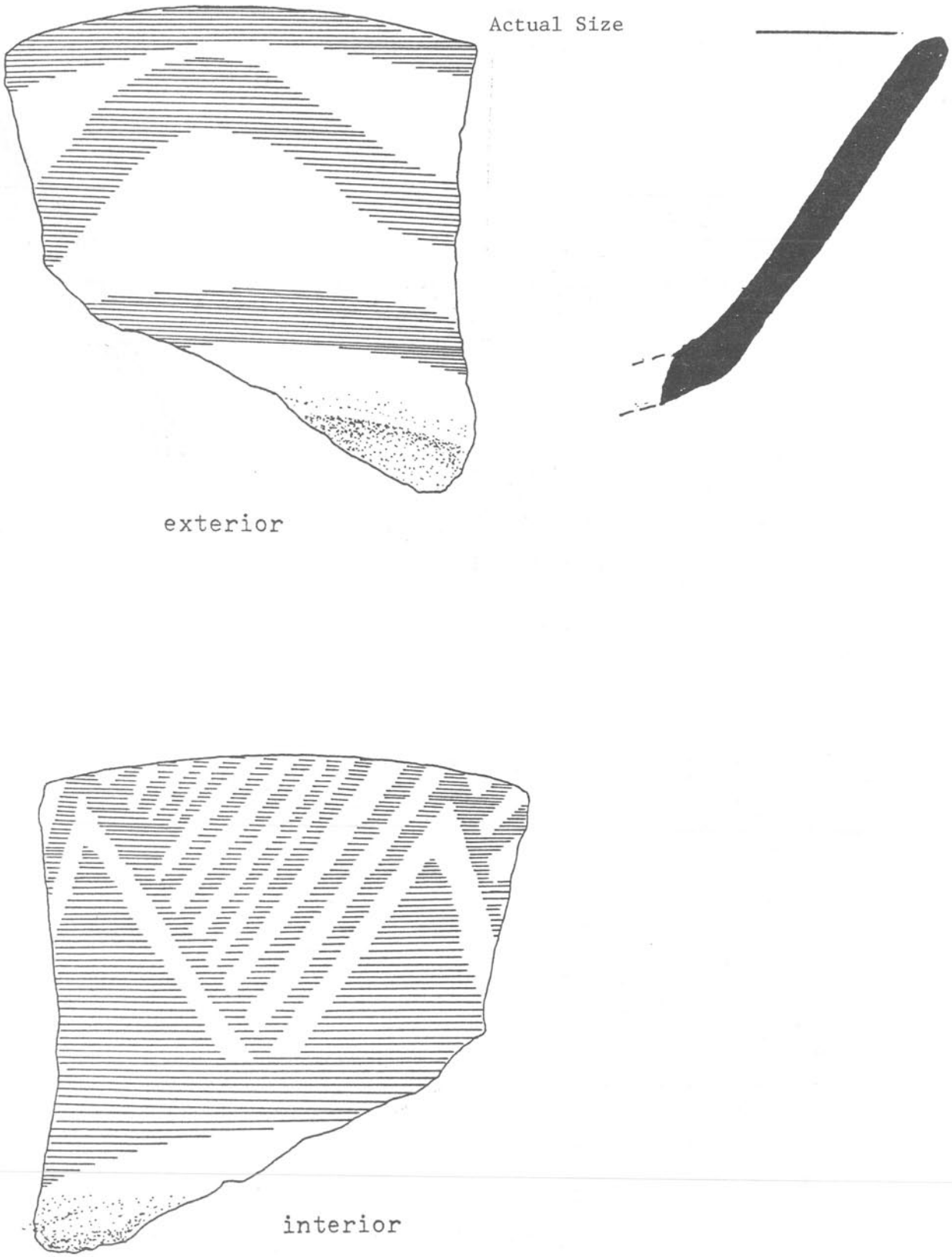
Figure 70





Potential Type Cantinas
Red-Orange A

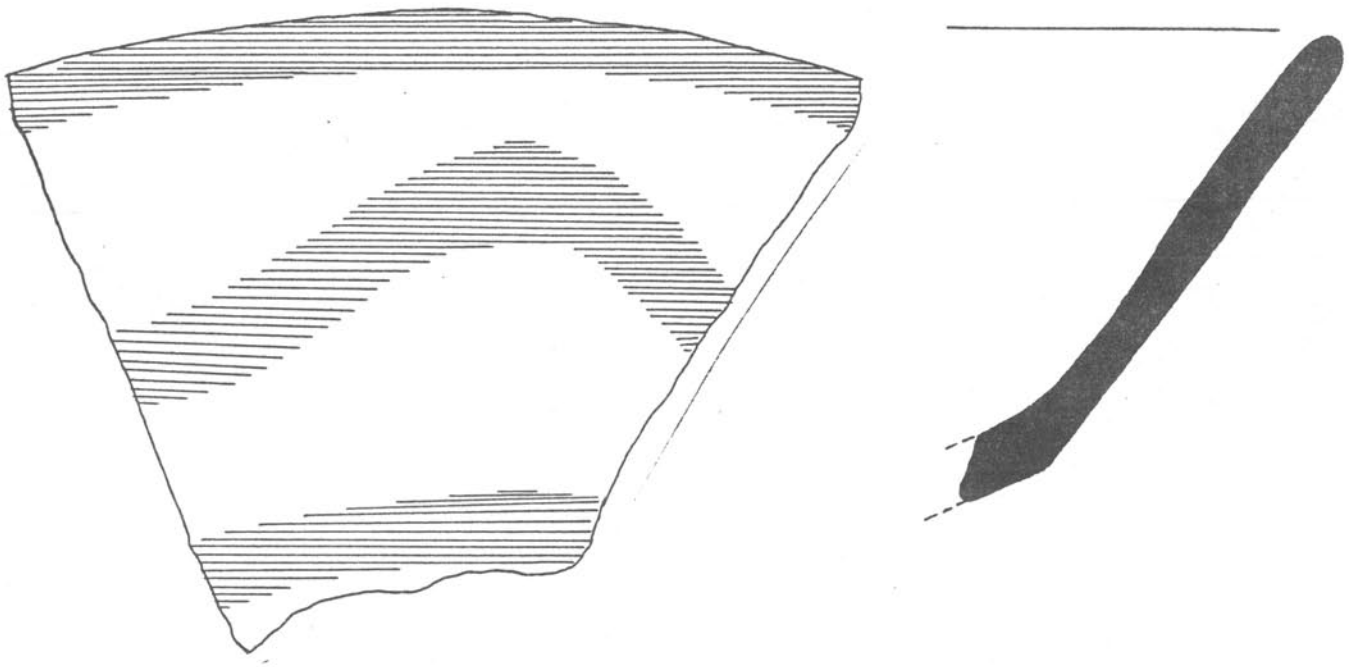
Figure 71



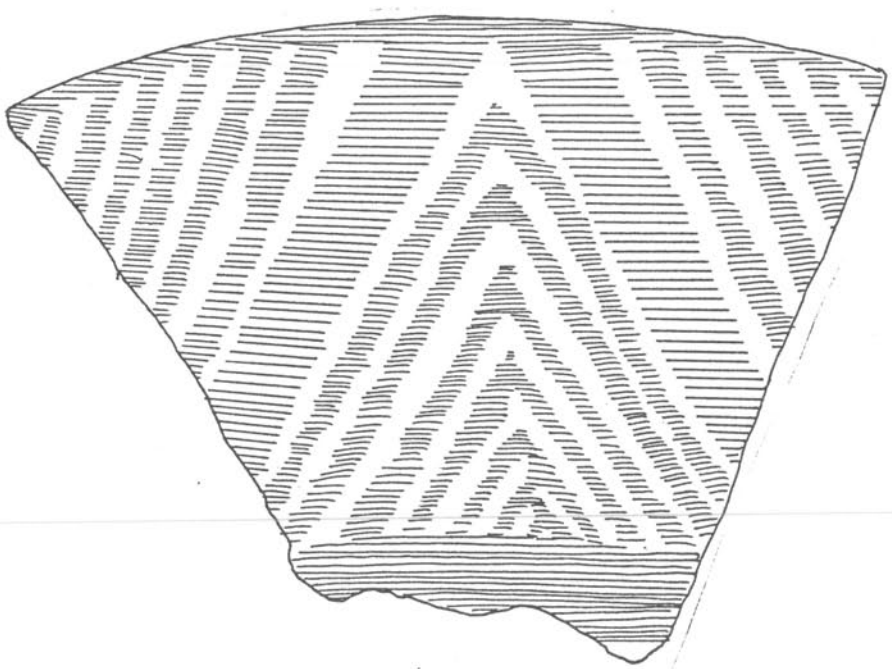
Potential Type Cantinas Red-Orange A

Figure 72

Actual Size



exterior

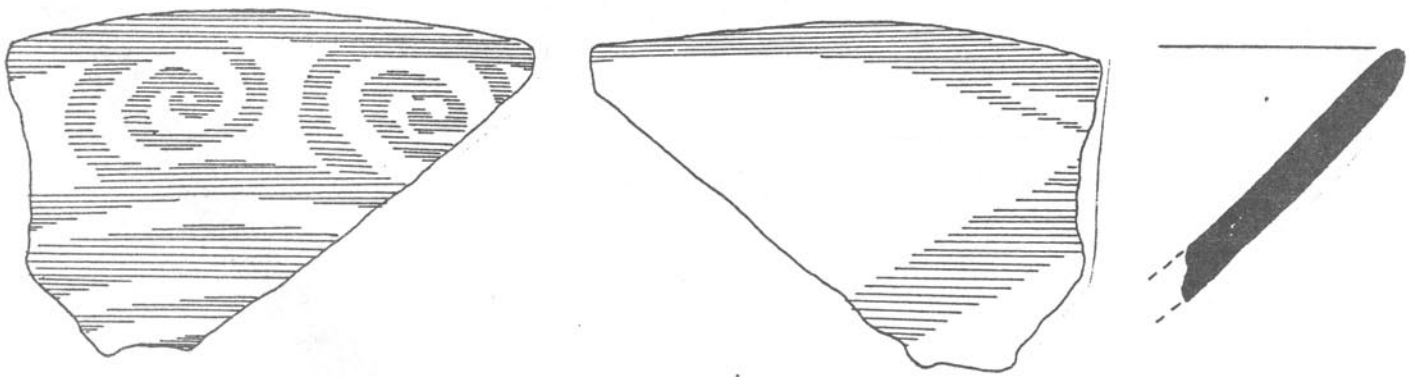


interior

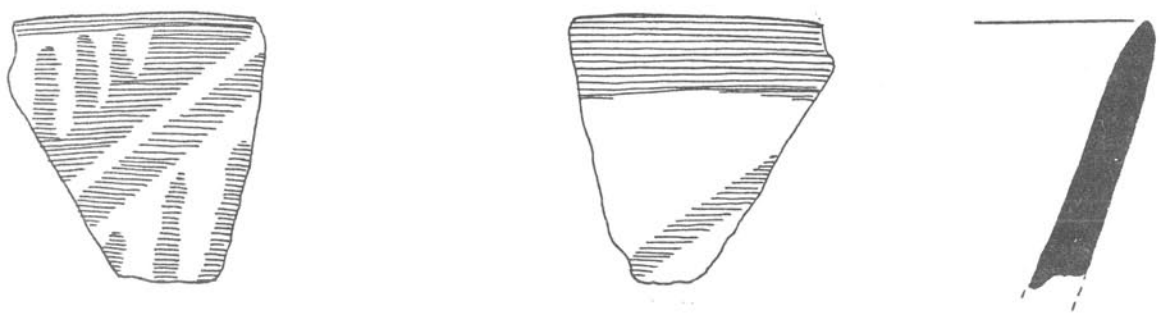
Potential Type Cantinas Red-Orange A

Figure 73

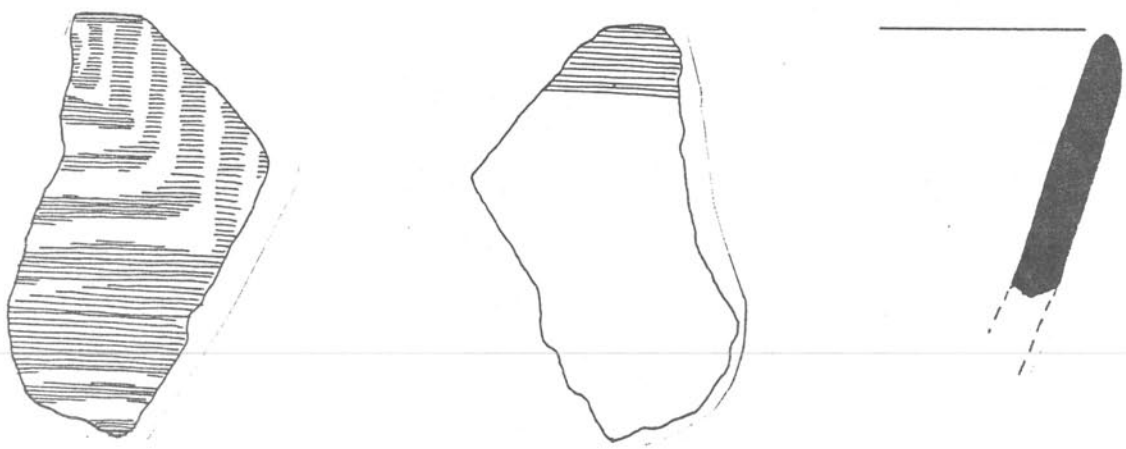
Actual Size



interior exterior



interior exterior

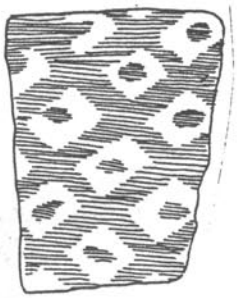


interior exterior

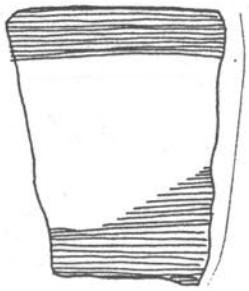
Potential Type Cantinas Red-Orange A

Figure 74

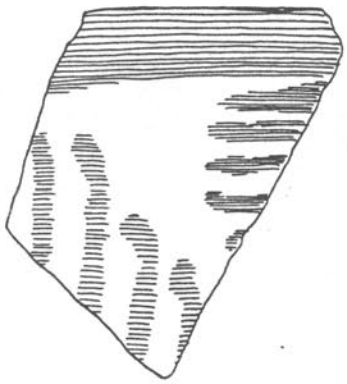
Actual Size



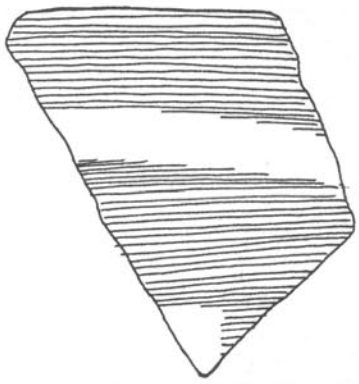
interior



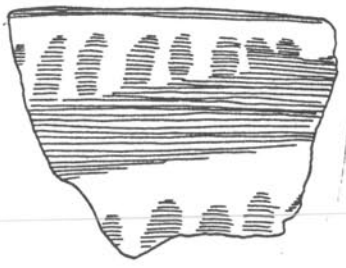
exterior



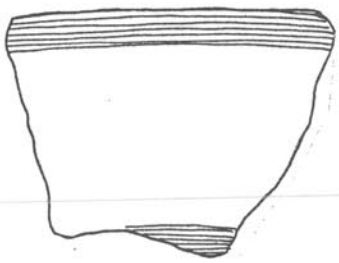
interior



exterior



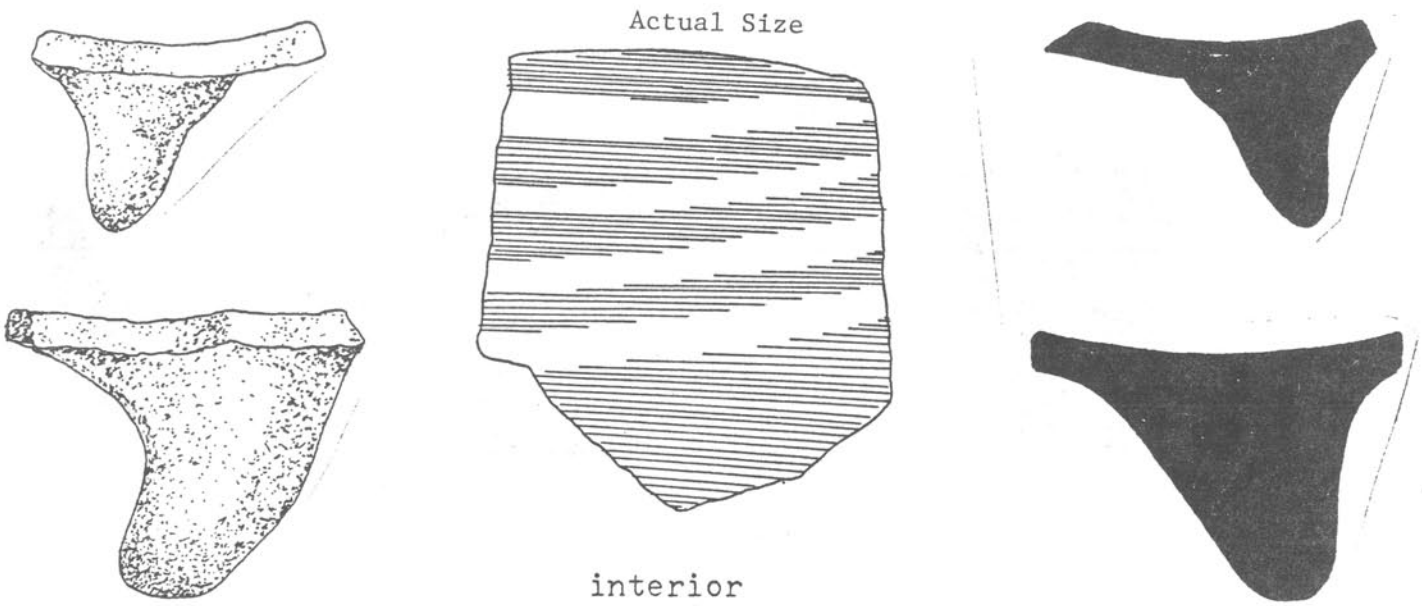
interior

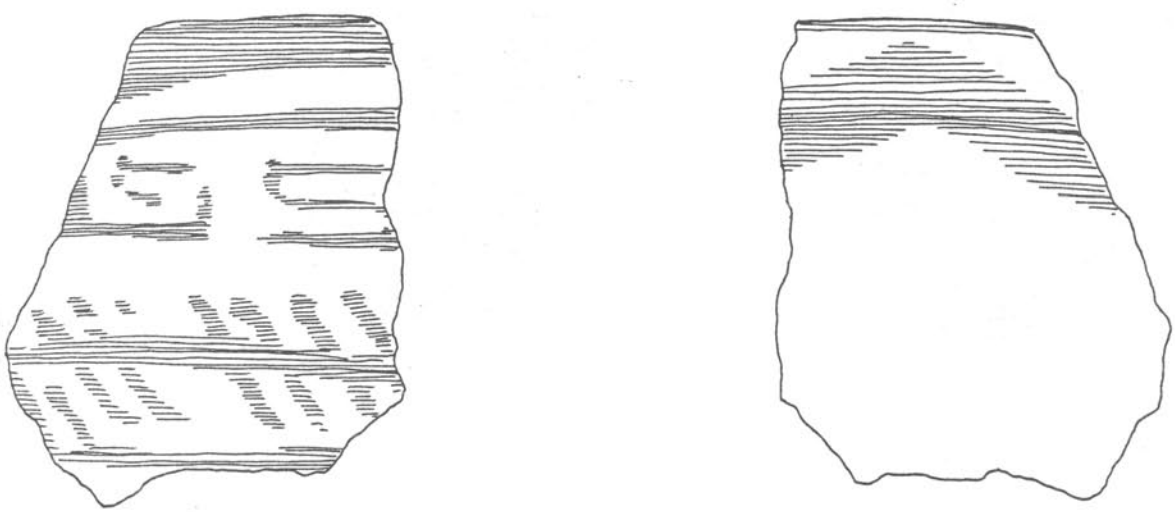


exterior

Potential Type Cantinas Red-Orange A

Figure 75


Actual Size
interior


interior
exterior

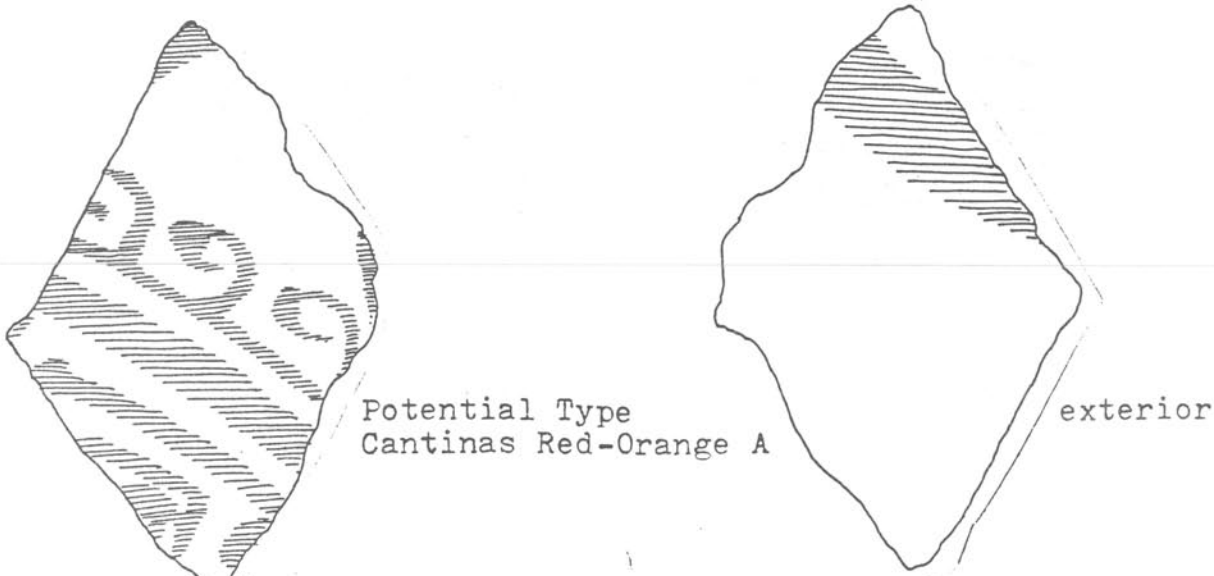
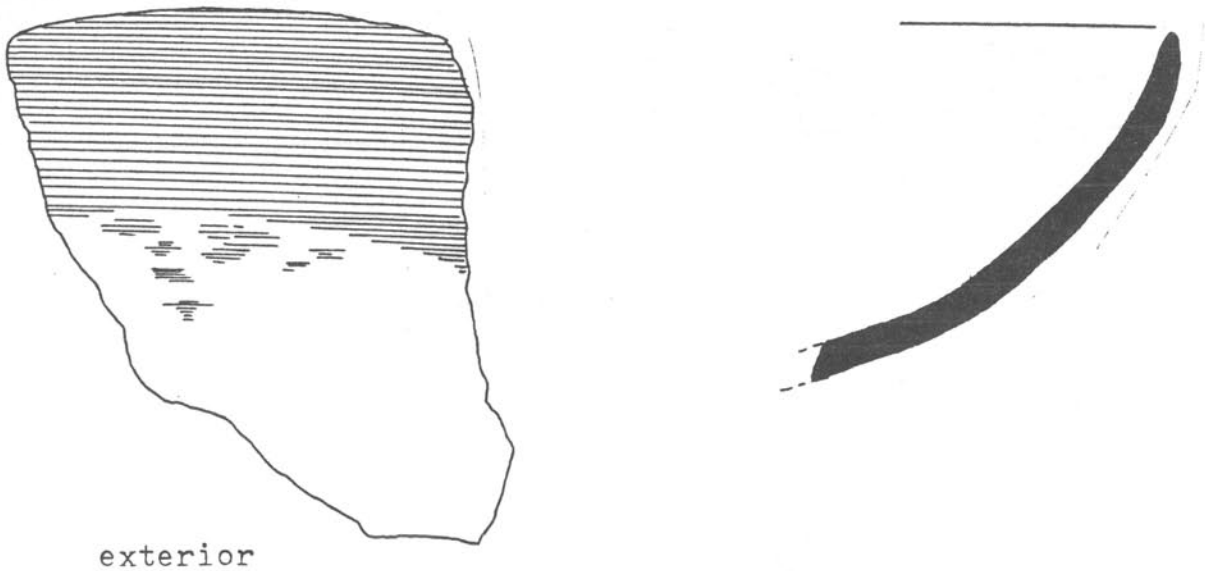
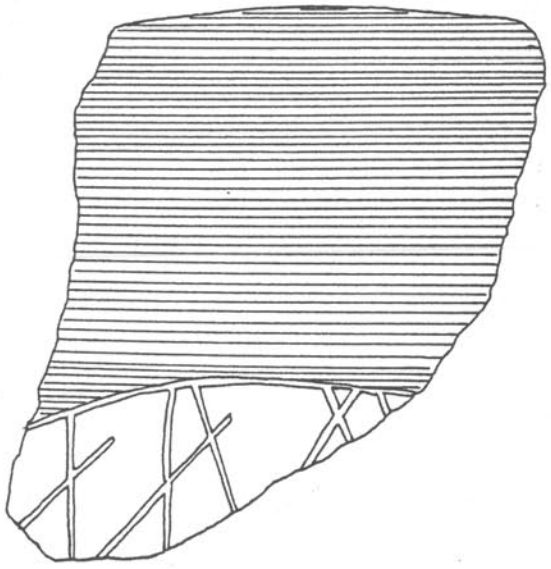

interior
Potential Type
Cantinas Red-Orange A
exterior

Figure 76

Actual Size



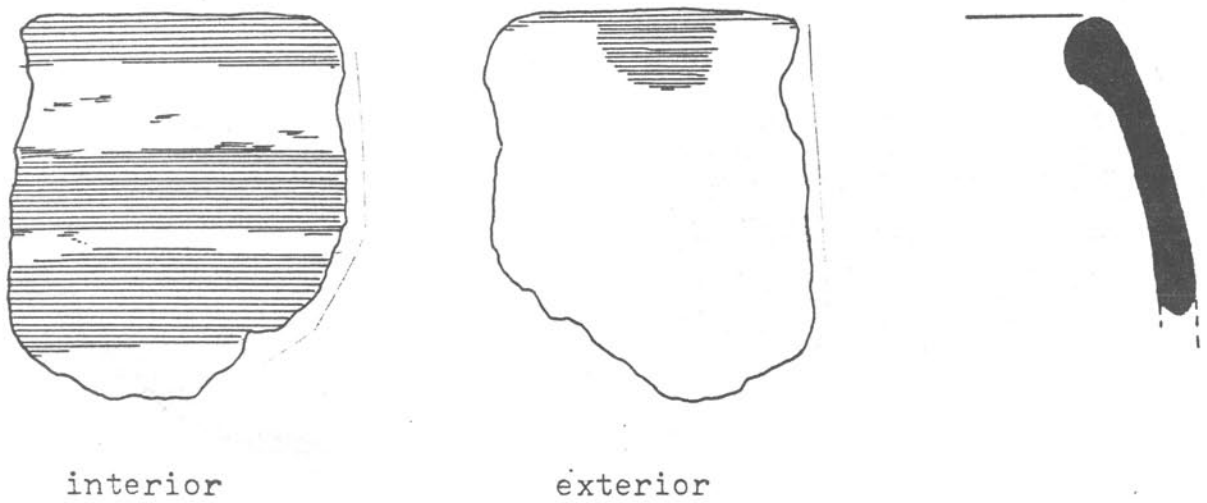
exterior

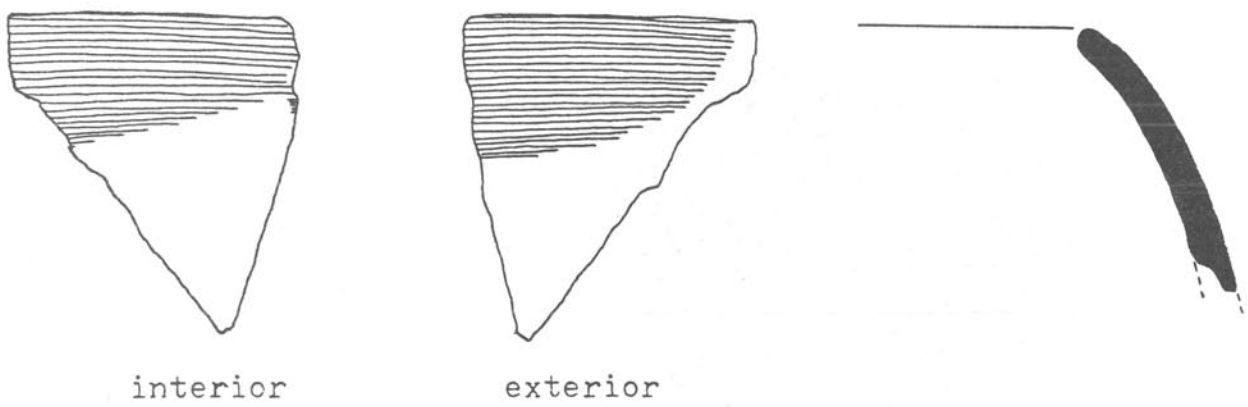


interior

Potential Type Encarnacion Red Zoned A

Figure 77
Actual Size

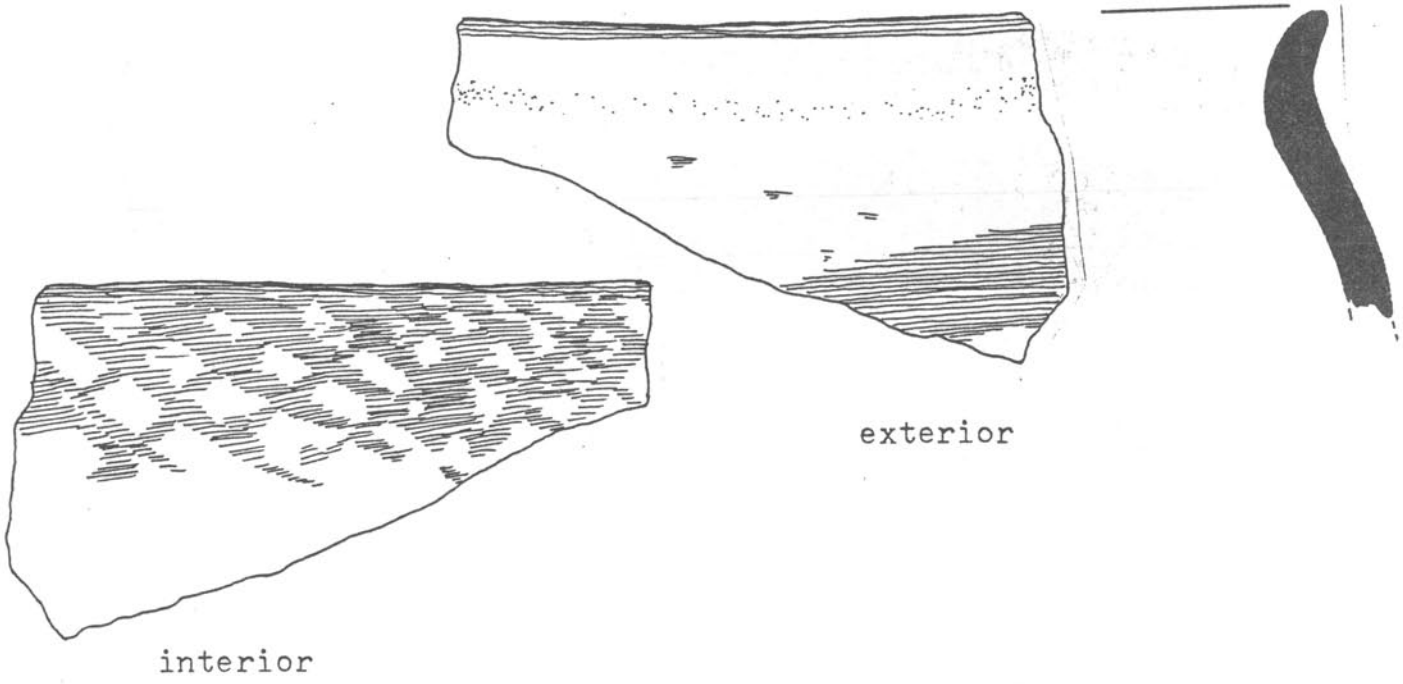


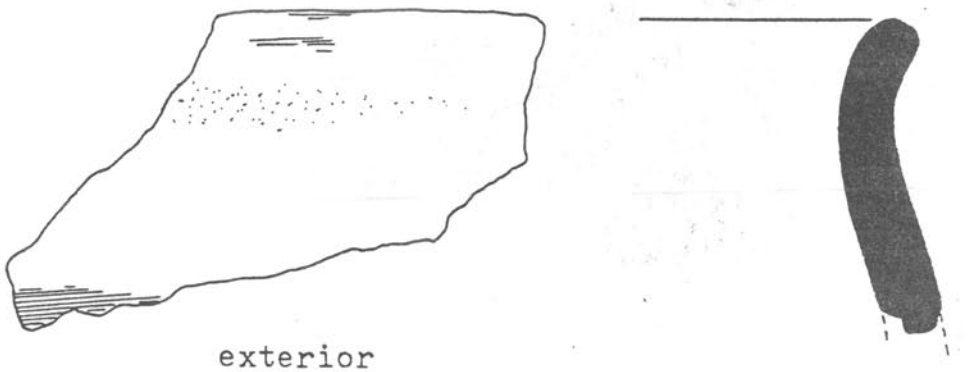


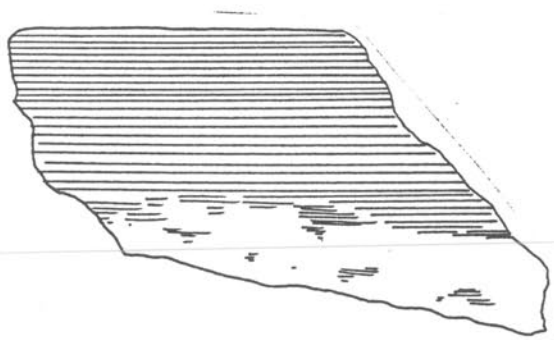
Potential Type Encarnacion Red Zoned A

Figure 78

Actual Size





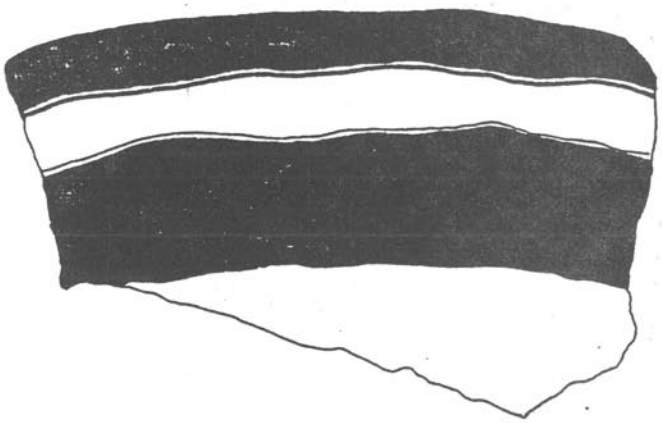


NO VESSEL FORM SUGGESTED

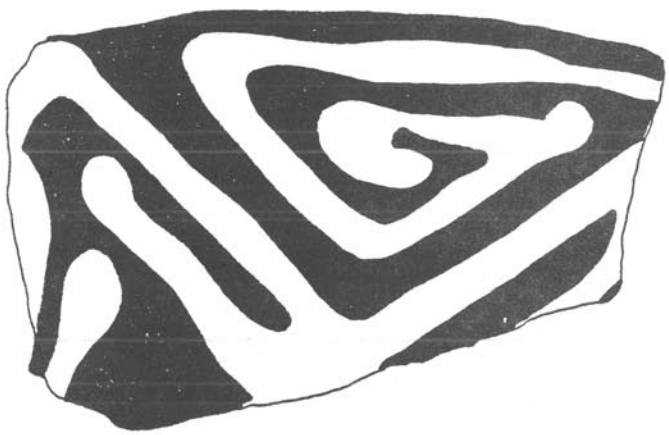
Potential Type Encarnacion Red Zoned B

Figure 79

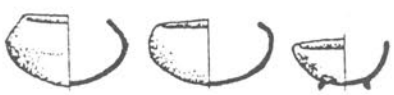
Actual Size



Exterior



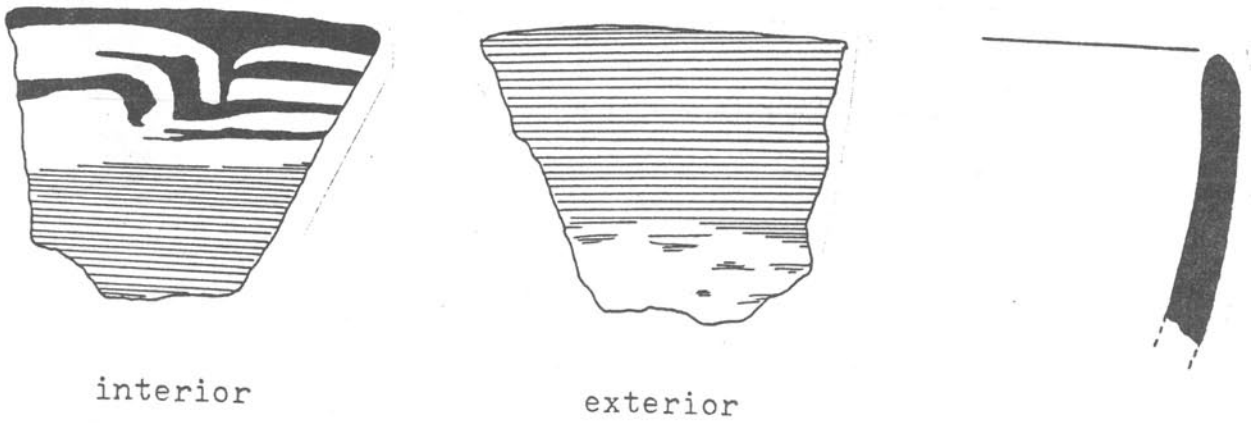
interior



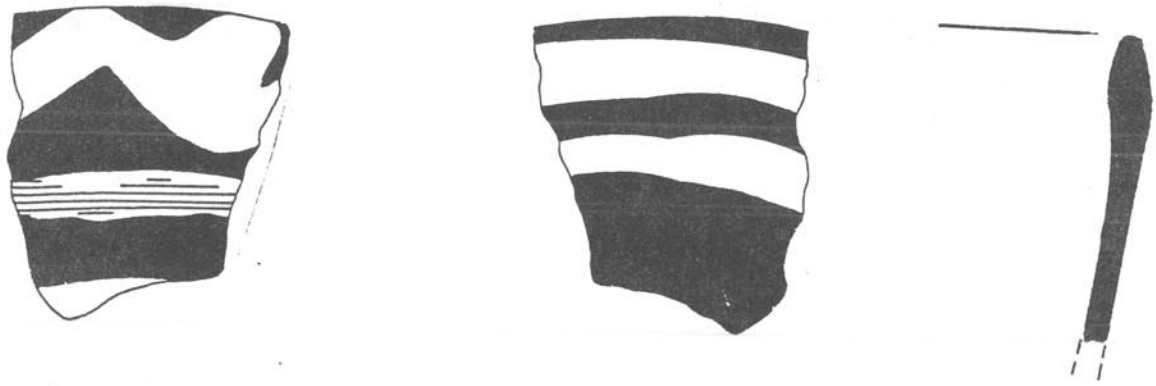
Potential Type Encarnacion Red Zoned C (Resist)

Figure 80

Actual Size



interior exterior

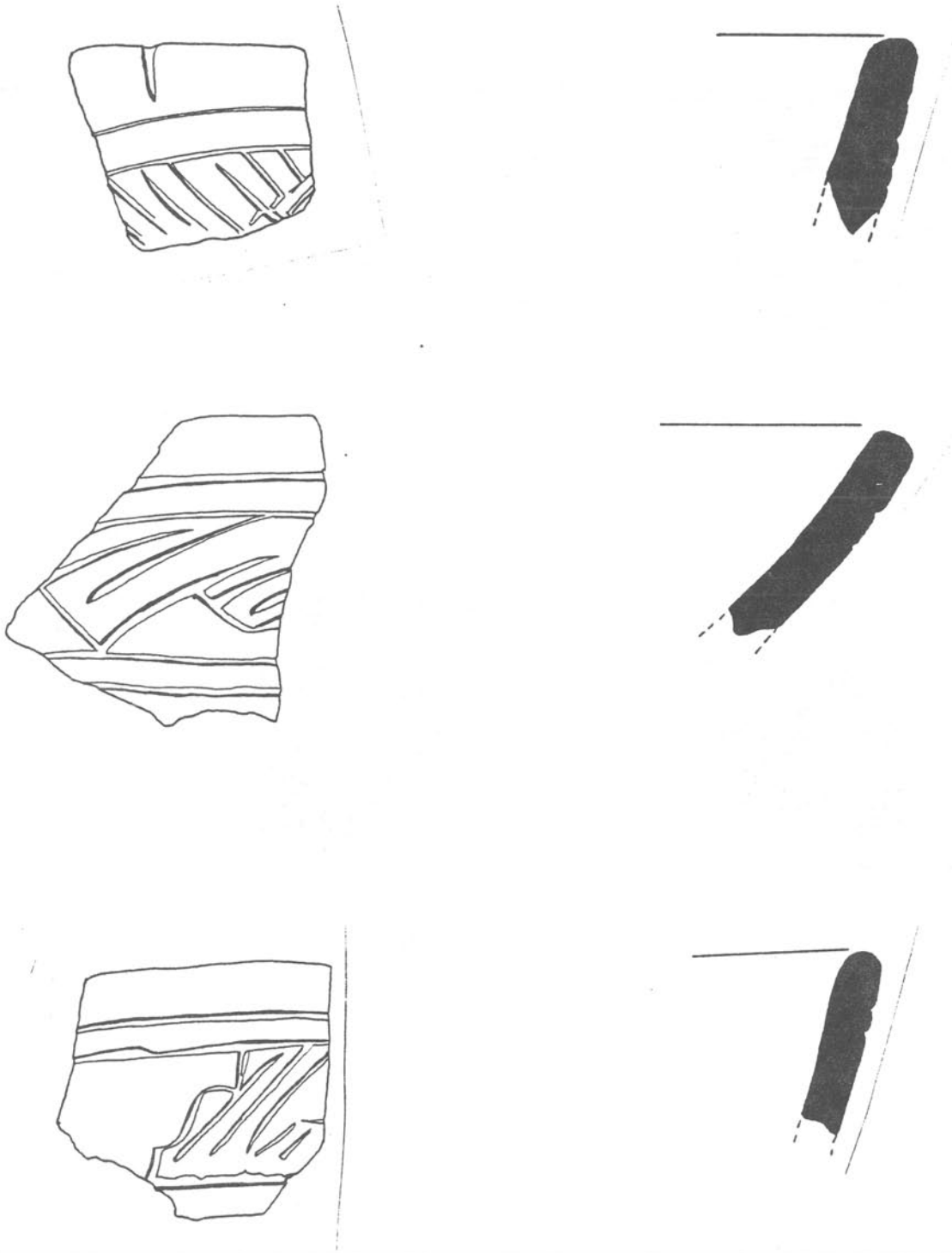


interior exterior

Potential Type Encarnacion Red Zoned C (Resist)

Figure 81

Actual Size

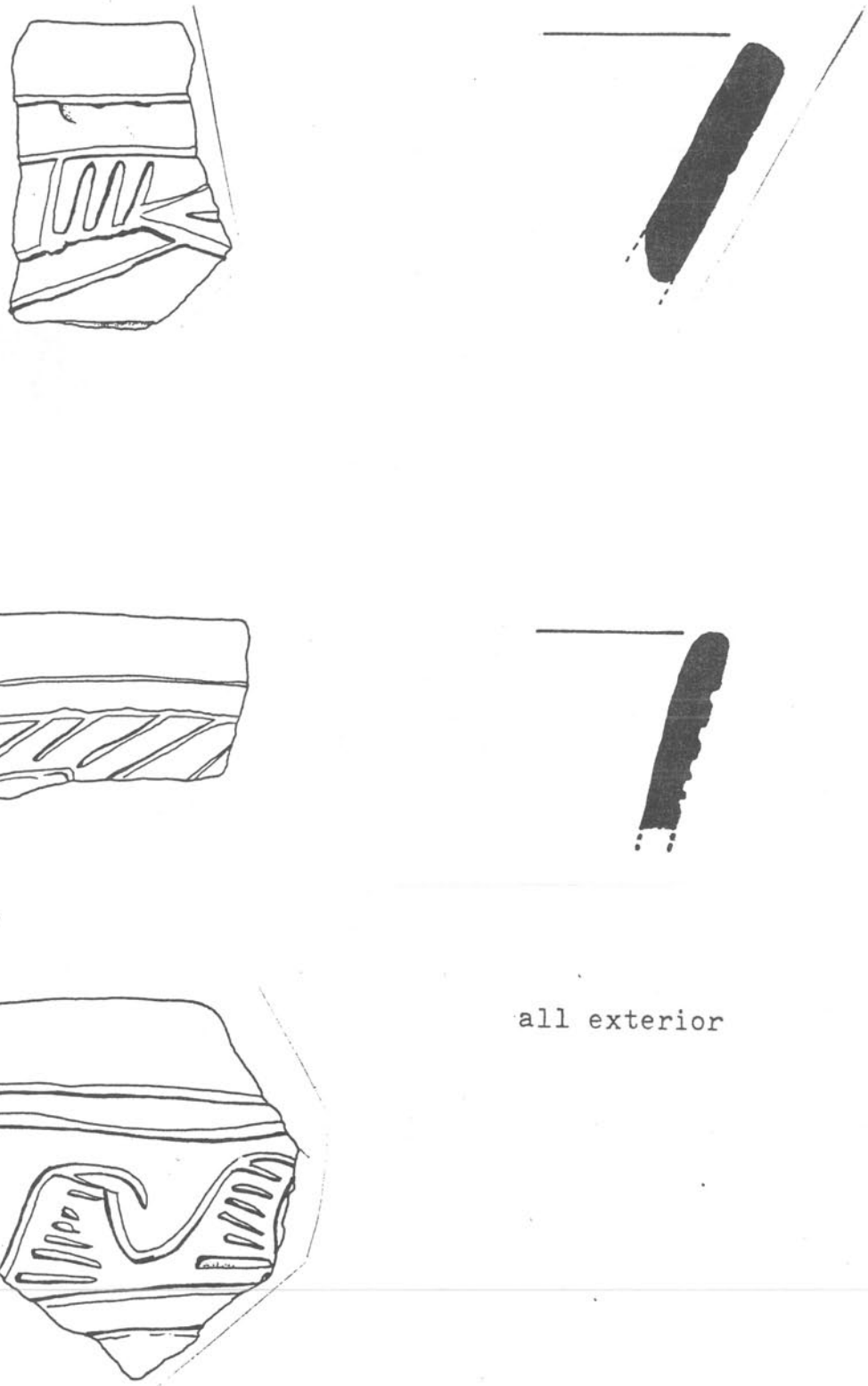


all exterior

Potential Type Buena Vista Orange A (Incised)

Figure 82

Actual Size

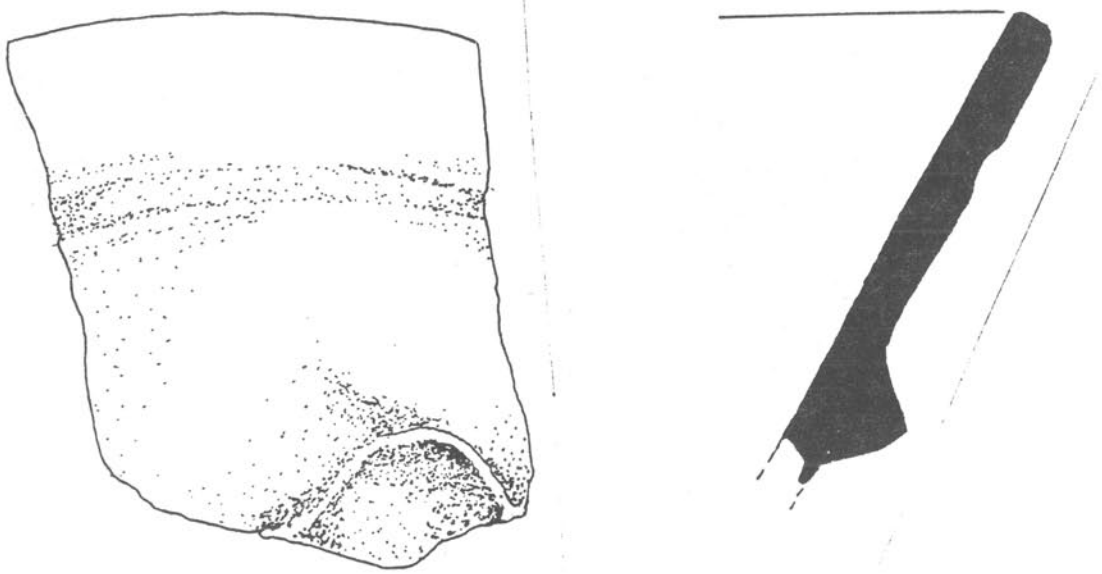


all exterior

Potential Type Buena Vista Orange A (Incised)

Figure 83

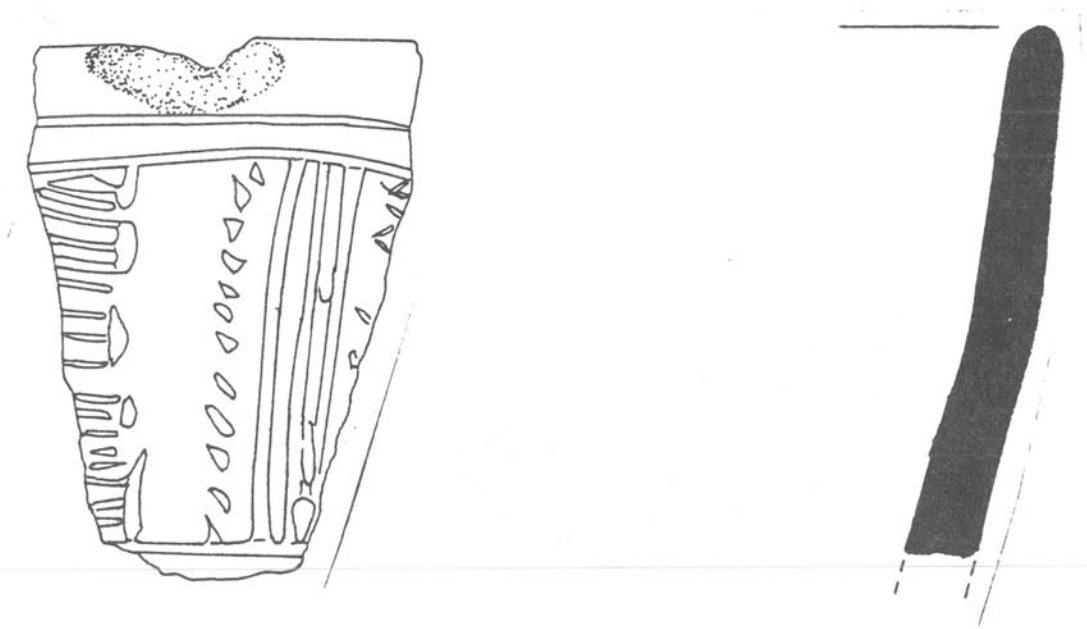
Actual Size



exterior

Potential Type Buena Vista Orange B(Grooved)

Figure 84



exterior

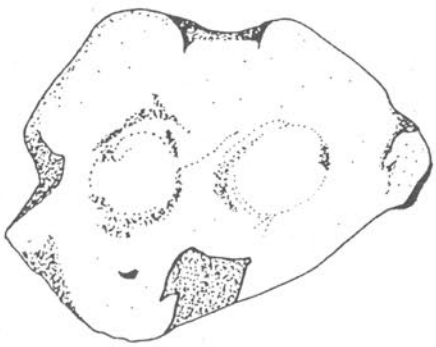
Potential Type Copandero Excised A

APPENDIX IV

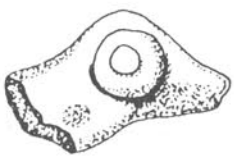
AC/C/NE/1

Figure 85

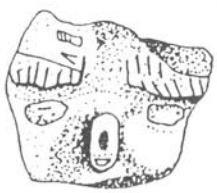
LEVEL 1

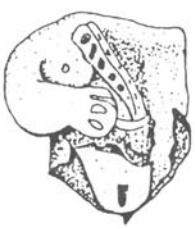


LEVEL 3

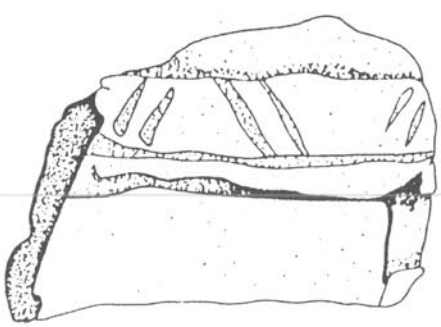


LEVEL 6



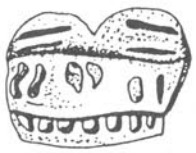


LEVEL 8

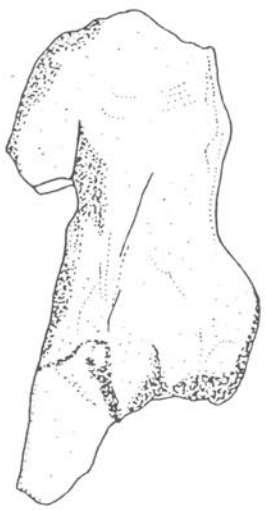


AC/C/NE/1

LEVEL 9

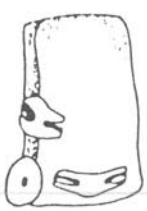


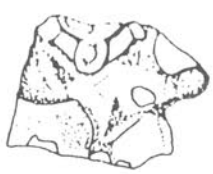
LEVEL 10



LEVEL 11

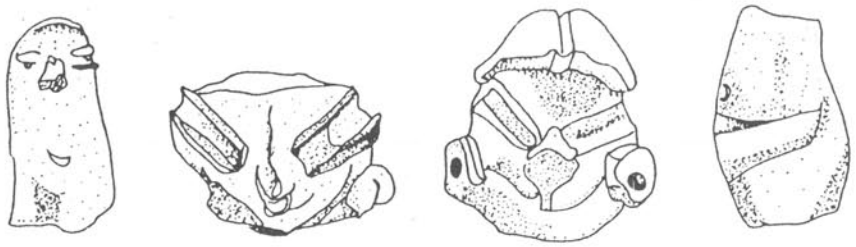
LEVEL 12





AC/C/NE/1

LEVEL 13

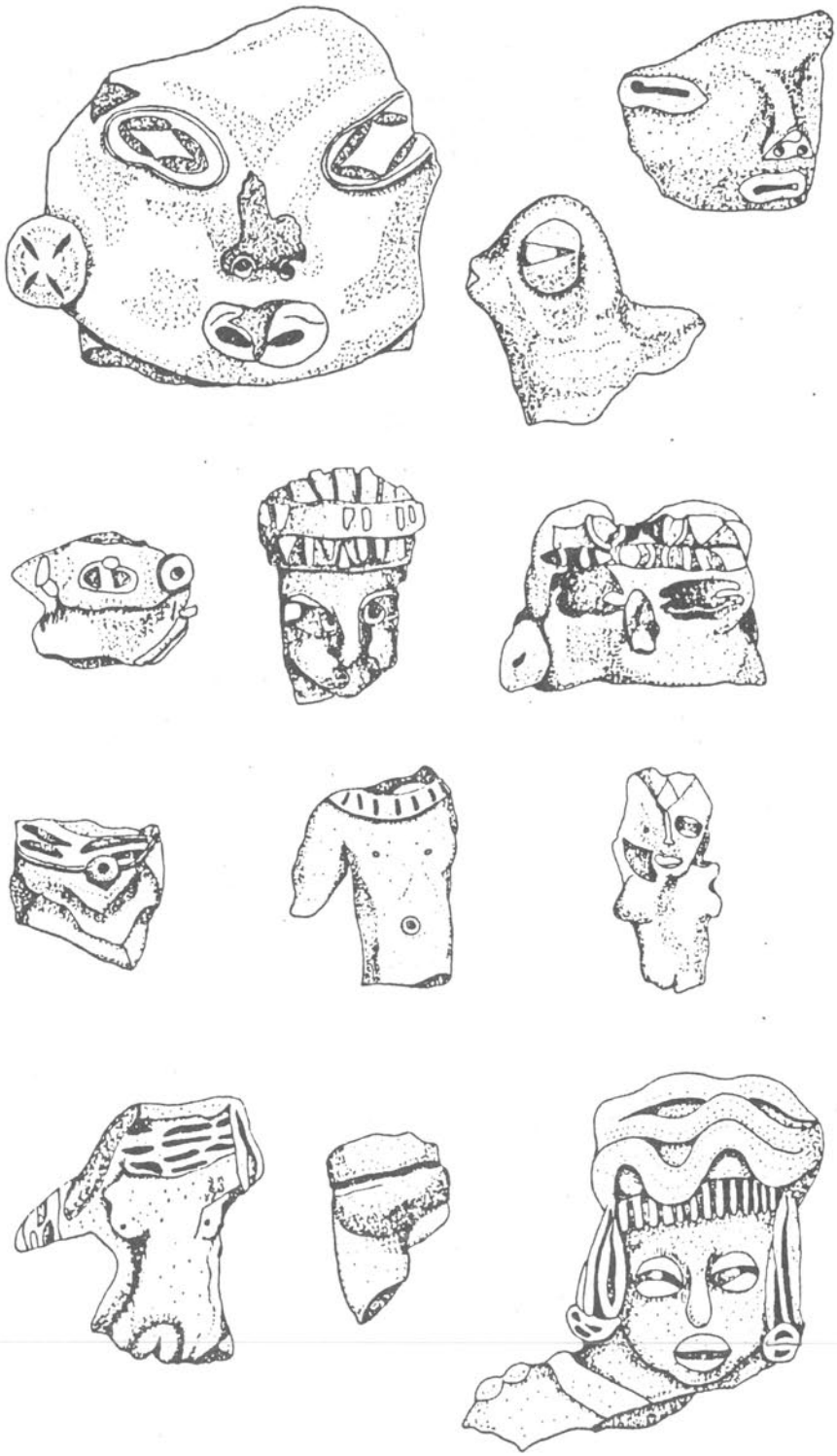


LEVEL 14

LEVEL 15

Figure 86

AC/E



AC/E

Figure 87

AC/C/SW/1

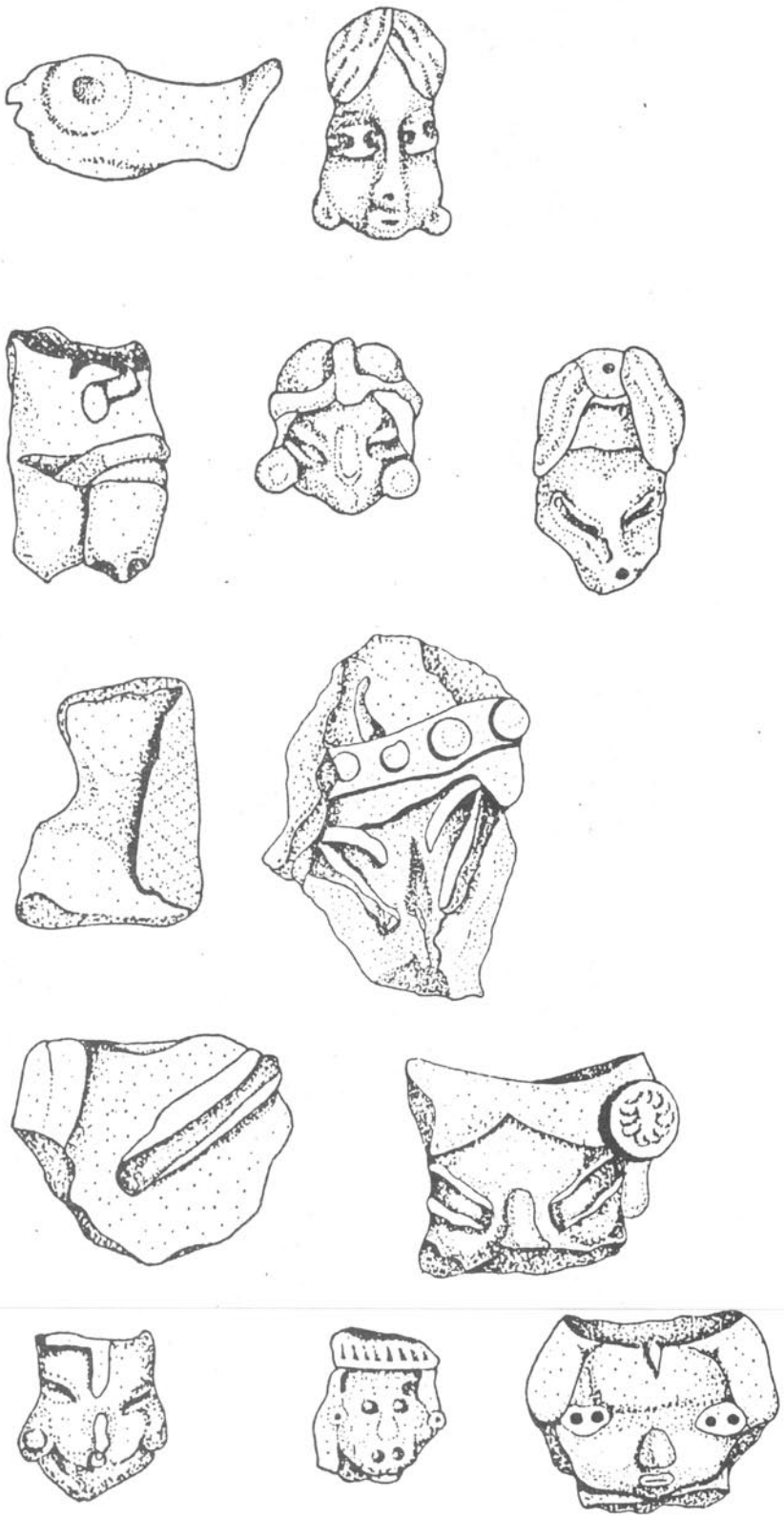


Figure 88

AC/C/NW