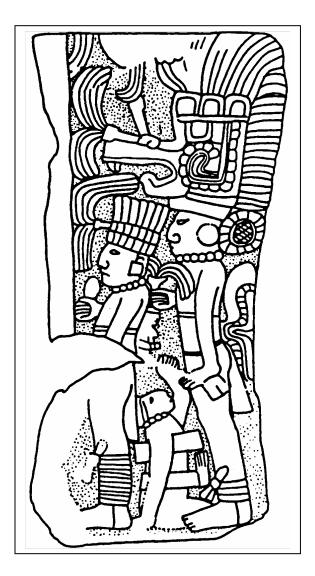
#### YAXUNA ARCHAEOLOGICAL SURVEY A REPORT OF THE 1988 FIELD SEASON by David Freidel

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by David A. Freidel

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#### Introduction

Yaxuná is a second-class center and community (site 16Qd(8): 3; S. Garza T. and E.B. Kurjack, 1980) situated approximately 20 km south and west of the famous city of Chichén Itzá in the state of Yucatan, Mexico. Yaxuná is best known as the western terminus of the 100 km long inter-site masonry causeway, sacbe, linking Yaxuná to the city of Cobá, some 25 km inland from the eastern coast of the Yucatan peninsula (Fig. 1). This is the longest inter-site road ever built by the ancient Maya. The Southern Methodist University Yaxuná Archaeological Survey carried out a second season of research at Yaxuná and in the surrounding region during the month of July and the first week of August, 1988. Some history of prior research by the Carnegie Institution at this site is given in the first project report 1 (Brainerd, 1958; Freidel, 1987).

### **Theoretical Objectives**

The immediate theoretical objectives of the Yaxuná Archaeological Survey are to investigate the Terminal Classic period (800-1000 A-D.) dynamics of large-scale state formation among the northern lowland Maya from the vantage of archaeological remains and relevant ancient history given in images and texts from Yaxuná, Chichén Itzá, and other communities in the region. As Kurjack and Andrews (1976) have suggested, inter-site causeways show promise of registering territorial alliances between primary and secondary centers in northern lowland polities. Andrews and Robles (1985; 1986) hypotheses that the great causeway linking Cobá and Yaxuná was (1985; 1986) hypothesize that the great causeway linking Cobá and Yaxuná was constructed at the beginning of the Terminal Classic period2 (Robles. 1980) to define the eastern boundary of a large-scale Cobá polity where it bordered lands under the influence of the many contemporary cities of the Puuc Region in the west. They further suggest that a large-scale polity seated at Chichén Itzá fought with Cobá for supremacy in the northern lowlands and that Yaxuná constituted the critical border between the Itzá polity and Cobá. The Yaxuná project was designed to evaluate the prospect that Yaxuná was a principle battlefield in a struggle between these large-scale polities.

The larger theoretical objective of the project is to investigate the hypothesis that regional wars focusing on Yaxuná constitute an evolutionary threshold wherein the lowland Maya successfully passed out of a Warring States phase into an Imperial phase of socio-political organization (see appendix 1). The Warring States phase began in 378 A.D. with the successful introduction of Conquest Warfare among the lowland Maya by King Great Jaguar-Paw of Tikal and his sibling, Smoking-Frog. These individuals prosecuted a conquest of a neighboring great kingdom, Uaxactun, in Petén, Guatemala. Subsequently, Maya kings of the southern lowland region forged grand alliances aimed at the establishment of conquest states throughout the ensuing Classic period. None of the resulting hegemonies lasted more than about a century and the largest proposed territory for such a hegemonic state is 3700 sq. km. (the kingdom of Dos Pilas), a small

fraction of the total lowland region. The Warring States phase in the southern lowlands ended in the great collapse of civilization in that region (Schele and Freidel, in press).

We hypothesize that the Terminal Classic state of Chichén Itzá successfully conquered or effectively dominated the entire northern lowlands, a territory on the order often times the largest southern lowland hegemony3. Epigraphic evidence from Chichén Itzá suggests that the government there was founded on sodalities of lords in Council under a "first among equals" rather than on the principle of royal dynasty as in the southern lowland kingdoms. Sodality is the principle called *multepal*, joint rule, by the Maya and is the form of confederate government found at Late Post classic period (1200-1450 A.D.) Mayapan, the last hegemonic capitol of the Maya, situated in the northern lowlands and founded by the same family that established Chichén Itzá. This second theoretical objective relies heavily upon epigraphic and iconographic information from Chichén Itzá, Yaxuná and other northern lowland centers. This aspect of the research is discussed below under the section on history.

### The 1986 Season at Yaxuná: A Summary

During the first season of work in the summer of 1986, the Yaxuná project laid out a coordinate grid of 500 by 500 m quadrats over the central 1 sq km of Yaxuná (Fig. 2), effectively incorporating all of the largest architectural complexes at the site. Using Electronic Distance Measuring (EDM) theodolites, the project completed a topographic survey map of the major ruins at the site. The corrected dimensions of the buildings and their modifications (compared to the earlier Carnegie Institution map of the same buildings, see Fig. 3), combined with surface inspection of masonry elements diagnostic of the Terminal Classic Puuc style (Pollock, 1980; Andrews and Andrews, 1980), suggested that the Terminal Classic inhabitants hastily and superficially modified existing civic-religious construction to define a rejuvenated political capitol focused upon the great causeway (Fig. 4).

The earlier civic-religious complexes at Yaxuná evince a triadic form, either a grouping of three major substructures, as in the case of Structures 5F-1, 5E-1 and 5E-2 (see Fig.5), or a grouping of three secondary substructures on top of a primary substructure, as in the case of Structures 5E-16 through 5E-19 and Structures 6F-1 through 4 (Fig. 5). This design is typical of architecture dating from the Late Preclassic centers of the southern Maya lowlands (Freidel, 1979; Matheny, 1986). The preliminary chronological placement of these core buildings in the Terminal Preclassic and Early Classic periods is commensurate with Brainerd's (1958) assessment of the ceramic associations found test excavations at the base of Structure 5F-1 and elsewhere at the site.

Commensurate with this hypothesized earlier date of major construction, surface inspection of the ruins by the project relocated and photographed an important Early Classic style stela that had been reset at the northern edge of Structure 6F-4 (Brainerd, 1958; <u>Fig. 6</u>). The project also relocated a Terminal Classic style architectonic bas-relief at the southern edge of Structure 6F-19 (<u>Fig. 7</u>) that shows iconographic affinities to architectonic bas-reliefs located at small sites to the north and southwest of Yaxuná

(Freidel, 1987) as discussed below. The project also found a badly eroded relief monument at the eastern edge of Structure 6E-2.

#### The 1986 season in the vicinity of Yaxuná

The project examined and photographed a collection of stone bas-reliefs from small sites in the vicinity of Yaxuná (Fig. 8), which is presently housed in the library of the town of Yaxcaba. These reliefs had been recorded and reported by M. Greene Robertson (1986). Further iconographic analysis of the accession and processional scenes on these reliefs (Freidel, 1987) suggests that they are strongly related in regalia and themes to the Terminal Classic period art of the Puuc cities and also to Chichén Itzá.

The project carried out preliminary investigation of the sites of X'telhu and Popola, the original locations of most of the bas-reliefs. Eyewitness accounts and fragments of other reliefs on these sites demonstrated that the reliefs had originally constituted frontal facades on small rectangular buildings situated in formal groups within these sites (Fig. 9). The project mapped the group containing bas-reliefs at the site of Popola, to the north of Yaxuná. The project also carried out reconnaissance at X'telhu and Popola. These sites consist of scattered low platforms containing the surface remains of foundation braces from perishable structures and small pyramidal structures that may have served civic-religious functions. Diagnostic mosaic elements and tenoned veneer blocks were found associated with the structures containing the bas-reliefs at both X'telhu and Popola, adding credence to their chronological placement in the Terminal Classic period-contemporary with Chichén Itzá and the Puuc cities.

## The 1988 Season at Yaxuná

The original plan of work for the 1988 season called for detailed topographic survey of the 4 quadrats comprising the central 1 sq km of Yaxuná and continued survey and reconnaissance at the satellite sites of Popola and X'telhu in the vicinity of the main site. Two circumstances required a revision of this original plan. Firstly, the project found that much of the main site had been cleared, burned and planted with fodder and maize at the beginning of the season. This made detailed survey of the cleared zones of the main site especially imperative. The cleared areas were easily mapped at the outset of the season, but these same areas became increasingly covered with cultivation as the season progressed. Secondly, a sub-project focusing on the historical ruin of Hacienda Cetelac, in the southern zone of the main site, became a new priority of research with additional funding supplied by a National Science Foundation dissertation improvement grant awarded to Rani Alexander, a graduate student at the University of New Mexico.

The project deployed four teams of surveyors using EDM theodolites in three of the original 500 by 500m quadrats (6E, 6F, and 5E) and in the 500 by 500 m quadrat encompassing Hacienda Cetelac (5D). Using Maya workmen from the village of Yaxuná, these survey teams attempted to recover and record 100% of the stone

remains of ancient buildings and related features (such as field walls) within these quadrats. Although the original plan called for the establishment of a grid of 100 by 100 m. blocks within the quadrats for purposes of survey, this labor-intensive technique designed for dense secondary bush proved unnecessary in light of the excellent visibility provided by the clearing for agriculture. Because of the high accuracy over distance allowed by EDM theodolite technology, the surveyors instead employed roving traverses across the quadrats aimed at complete coverage. Only in the case of quadrat 6F did breccias have to be employed in the northeastern sector, which had not been cleared for fields. Within the limitations of visibility, the project accomplished the goal of complete survey of these three quadrats of the central 1 sq km and survey of the quadrat encompassing Hacienda Cetelac (fig. 5). Additionally, the project mapped portions of the following adjacent quadrats: 4D, 4E, 4F, 5E, and 5F.

The project building nomenclature runs serially within each quadrat. Each ground-level building (usually in the form of a foundation brace plan for a perishable superstructure, but sometimes rubble and gravel concentrations without visible plan) each primary raised substructure, secondary substructure, and foundation brace for a perishable superstructure on top of a substructure, was given a separate number within the quadrat designation, for example: Structure 5E-143 is a foundation brace for a two-roomed perishable superstructure on top of Structure 5E-141, a primary substructure. The tradeoff in such a nomenclature is that while there is no indication of relationship given between structures, each structure has a unique designation that is not subject to confusion with any other structure. Even the most densely occupied quadrat, 5E, has a sufficiently limited number of unique features that the project anticipates little difficulty in keeping track of the location of each one so designated.

Masonry causeways within the site, including the inter-site causeway running to Cobá and the intra-site causeways linking groups of structures within the site, are given a separate nomenclature, S-1 through 6 to date. Stonewalls that define enclosed space within the site is not designated with a separate nomenclature at this time.

Using this nomenclature, the project to date has recorded the following number of features at Yaxuná:

Table 1	
Recorded Structures by (	Quadrat
4D	7
4E	38
4F	9
5D	(buildings are not yet designated)
5E	166
5F	3
6E	117
6F	66
TOTAL	406

Quadrat 5D represents special problems with respect to structure designation. On the one hand, there are remains of some structures in the vicinity of Hacienda Cetelac. On the other hand, it is clear that many surface structures were dismantled in the course of building the walled enclosures associated with the Hacienda. Such destruction not only removed surface foundation braces of perishable buildings, but also removed walls of substructure platforms and terraces extending out from natural rises. Designation of structures in this quadrat will be carried out during the 1989 field season after careful inspection of the remains recorded during the 1988 season.

## The Yaxuná Settlement Pattern, an overview

The settlement pattern emerging at Yaxuná displays a dense concentration of structures to the south of the main architectural complexes in close proximity to those groups presumably comprising the civic-religious center of the community in all occupation periods. In general, while there is a respectable number of smaller structures on raised substructures to the north of the great inter-site causeway (quadrat 6F), this zone shows a significantly lower density that the quadrats to the south (5E and 6E).

Reconnaissance in quadrat 5F (to be surveyed during the 1989 season) suggests' that this drop-off in settlement density in the north will be confirmed through further work.

Reconnaissance to the south and southwest, in quadrats 4D, 4E, and 5D, suggests that the high settlement density continues in these directions for an undetermined distance. This will raise a number of empirical problems for the survey in its attempt to recover a 100% sample of surface features. Quadrat 4D is already in the outskirts of the modern village of Yaxuná, where it is clear that modern stone robbing will have removed most evidence of the ancient settlement. Quadrat 5D contains the seventeenth century Hacienda Cetelac occupation, which has badly damaged surface remains of the Pre-Columbian site. On the other hand, Quadrats 4E and 4F evince good preservation of ancient structures and will be completely mapped in pursuit of a density drop-off of the community. The present pattern suggests that both the Hacienda Cetelac and the village of Yaxuná (already a settlement by the eighteenth century at the latest), were founded within the ancient zone of highest residential occupation.

#### Civic-Religious Planning at Yaxuná

As a general rule, the organization of large and complex communities among the Maya evinces significant planning of the spatial arrangement of public civic-religious architecture4 and a more informal distribution of residential architecture in the vicinity of these major buildings. In this regard, the large building complexes at Yaxuná that shows surface design commensurate with established civic-religious conventions show a regularity of spatial arrangement not displayed in the distribution of smaller, presumably residential, structures. Major changes in the spatial pattern of such civic-

religious complexes is a useful guide to major changes in the organization of the community (Freidel, 1986.). Simply put, a detectable revision in the organization of central architecture signals important political change or even reoccupation following abandonment. The survey of Yaxuná to date already displays a continuously shifting spatial focus of civic-religious architecture. This pattern supports continuous political activity at the community spanning the Classic and Terminal Classic periods.

There is an identifiable center to the original community at Yaxuná. Structure 5E-1 is a large pyramidal substructure with at least one stairway on the western side as indicated by cut-stone in the rubble along the slope. Structure 5E-2 is a long primary substructure with three secondary substructures. Together with Structure 5E-1 and Structure 5F-1 through 3, these buildings comprise a southward oriented group, the largest and most impressive civic-religious complex at the site and hence the likely original central focus of the original community. Chronological placement of this group in the pre-Terminal Classic phase of occupation is based upon the extensive guarrying of the southern facade of Structure 5F-1 for finely dressed large monolithic blocks (characteristic of the Early Classic period in the northern lowlands) by Terminal Classic period masons (see Freidel, 1987), and the pronounced reorientation of Structure 5F-1 from the south to the east with the construction of Structure 5F-3-at 25 m. elevation the tallest pyramidal substructure at the site. This reorientation allowed the building to face onto the open plaza area containing the terminus of the inter-site causeway to Cobá, the central focus of the later community at the site5. As discussed below, this later central focus was not a radical redefinition of the center of the period of community but rather represented the culmination of community development over a long time. We believe that the Terminal Classic occupation, then, reiterated the latest Classic period central focus of Yaxuná through such modifications as the construction of Structure 5F-3.

The design of Structures 5E-1 taken together with Structures 5E-2 through 5 resembles the so-called "E Group" complex at Uaxactun (Ricketson, Ricketson, 1937), an Early Classic period assemblage thought to have functioned as an observatory for solsticial events. When these structures are taken with the main acropolis at the site, Structure 5F-1, they form a triadic architectural nucleus typical of early lowland Maya kingdoms (Freidel, 1979).

This original center established a north-south axis facing south. The southern end of this axis is a dense concentration of smaller, presumably residential structures in Quadrat 5E. The presence of boulder-lined platforms in this zone, paralleling Preclassic construction practice at the Preclassic northern lowland Maya community of Komchen (Ringle and Andrews, 1988), in addition to a scattering of Preclassic or Early Classic ceramics on the surface, suggest that this residential zone was occupied in the early phase of the community. Ashmore (1987) has suggested that Classic period Maya cosmology may have dictated a north-south community axis in which the civic-religious architecture in the north was balanced out by residential occupation to the south. This general pattern accounts well for the Late Preclassic complex community of Cerros (Freidel, 1979). The Preclassic northern lowland Maya community of Komchen (Ringle and Andrews, 1988) also has a southward oriented central civic-religious group, but

there the residential pattern does not concentrate to the south of that group but rather displays a concentric pattern surrounding the center.

In any case, the north-south axis of civic-religious architecture at Yaxuná was reiterated by a second architectural complex, Structures 6F-1 through 4, to the northeast of complex facing north and focused upon Structures 5E-28, 30 and 34. The shifting eastward of the main north-south axis of the community continued with the construction of three large architectural complexes in the southern zone which face north: Structures 5E-16 through 19 and Structures 6E-25 through 32, and Structures 6E-16 through 19.

The north-south axis of Yaxuná during the earlier phase of development was, at some point in time, complemented by the definition of an east-west axis. The beginning of this east-west axis evidently was the "E group" complex comprised of Structures 5E-1 and 5E-2 through 5. This eastward facing complex was extended by the construction of a large group facing west, Structures 6E-1 through 6. This east-west axis, combined with the eastward shifted north-south axis, placed the focal point of the community in a level open space directly east of the original plaza focused upon the main acropolis. The later Terminal Classic center of the community shifted northwards in this flat, open space to Structure 6E-13, the terminal building of the great masonry causeway from Cobá, Sacbe 1.

The final feature of civic-religious architectural planning at Yaxuná to be considered is the intra-site causeway. The most extensive intra-site causeway is Sacbe 3. This causeway is exceptionally broad and is defined for most of its length by cut-stone borders. At the northern terminus, it opens directly into Structures 6F-15 and 16, which together show surface indications of being a ballcourt. The southern terminus is Structure 5E-9, a small platform adjacent to a masonry lined sinkhole that still collects water in the rainy season. Like Sacbe 3, Sacbe 2 has a specific beginning and ending point in architecture, running east west between a stairway on the large substructure Structure 6E-1 and a pyramidal substructure, Structure 6E-12. This shorter causeway is raised throughout its length above the level of the surrounding surface and is paved with small stones and gravel. Sacbe 4 extends northward from Structure 5E-16, but it ends in open space and we suspect that its northern sections were destroyed in antiquity by stone robbing for milpa field walls. However, the northward running Sacbe 6 from Structure 6E-6 also ends in open terrain. Sacbe 5 runs east-west through the densest zone of small buildings at the site, linking a broad plaza area at the eastern and terminating in the west in a smaller plaza bordered on the west by a substantial substructure.

Although intra-site causeways predate the Terminal Classic by a millennium in the northern lowlands, there are reasons to believe that at least Sacbe 3 dates to that period. The ballcourt group in which it ends at the north (Freidel, 1987: section 3.7) shows surface indications of being a Terminal Classic period construction. Given this north-south complement of the east-west trending great causeway, Sacbe 1, there are some grounds to suspect that other intra-site causeways at Yaxuná are also Terminal Classic period modifications, hi light of the antiquity of the tradition of constructing intra-site sacbes, only excavation can settle this matter with any certainty. It is nevertheless

clear that these features confirm the presence of the north-south and east-west axes observed in architectural orientation.6

The spatial pattern of civic-religious architecture surveyed to date at Yaxuná is commensurate with a gradual elaboration and a gradual shifting of the center from the original plaza fronting structure 5F-1 to open space directly to the east of this plaza. In terms of the relationship between the early phase of development during the Late Preclassic and Classic periods and the later phase of occupation during the Terminal Classic period, there is no sudden or dramatic break. The evidence for a resurgence of political importance of the center during Terminal Classic times is in the form of modification and reorientation of existing architecture and the probable construction of the intra-community sacbes that reify the community axes described above.

The history of civic-religious planning at Yaxuná favors a continuum of occupation from the Classic into the Terminal Classic periods. This casts doubt on the hypothesis (Freidel, 1987: section 1.2) that the Terminal Classic occupation of Yaxuná represents the completely new establishment of a political capitol following a virtual hiatus. It favors the continuity of occupation suggested by Brainerd (1958: 12). The observed continuities also further the hypothesis proposed by Robles and Andrews (1986) that Yaxuná was a major frontier community already at the outset of the Terminal Classic period, defining the political and economic border between a hegemony centered on Cobá in the east and a second constellation of power in the Puuc cities to the west and south.

#### Small Structures at Yaxuná

Smaller structures surround the major architectural complexes at Yaxuná. Some of these buildings evince the triadic arrangement of steep-sided substructures typical civic-religious architecture and hence may constitute local shrines. The majority, however, are the stone foundation braces of perishable buildings and their raised substructures, what Maya archaeologists presume to be residential localities until otherwise demonstrated through excavation (Wilk and Ashmore, 1988). An example of a particularly dense expression of smaller structures (Fig. 10) in Quadrat 5E gives some sense of the variety of features involved.

Structure 5E-75 is a perishable superstructure on a raised substructure with two lateral raised bench areas inside and a column in the doorway. The use of columns in doorways is a characteristic feature of Puuc region masonry buildings (Pollock, 1980:572) dating from the Terminal Classic period. Colonnaded doorways are also found at Chichén Itzá in perishable as well as masonry buildings (Ruppert, 1952) and they remain a characteristic of the more substantial perishable elite residences of the Late Post classic period, as evinced in the settlement of Mayapan (Smith, 1962:226). There is good reason to suspect, then, that this building dates to the Terminal Classic period or later.

Structure 5E-95 is a boulder-lined substructure supporting the foundation braces of two multi-roomed unvaulted buildings. The design of the buildings is commensurate with Classic period and Terminal Classic period conventions (Kurjack, 1974:60-61). However, the use of boulders to edge support platforms is a characteristic of Late Preclassic period settlement at the site of Komchen, to the north and west of Yaxuná (Andrews, 1981). This is one of several boulder-lined substructures in the Quadrat and in the adjacent Quadrat 4E. In light of the scatter of early ceramics on the surface of Yaxuná, there is the prospect that early residential platforms were reused with little modification.

Structure 5E-52 is a substantial secondary substructure resting upon Structure 5E-50, a low, extensive primary substructure. Commensurate with general practice in the region and at this site, this large group is likely situated upon a natural rise that was subsequently terraced to form the observable primary substructure. The irregular outline of the primary substructure further suggests that the group was constructed in several phases. The arrangement of the foundation braces of smaller buildings in the group shows a focus on Structure 5E-50, both to the east and west. In all likelihood, then, this is the principle residence of the group. There is an ongoing controversy in the Maya literature (Wilk and Ashmore, 1988) over the identification of such complex residential groups as high status households versus the prospect that they represent the accumulative results of ordinary extended family household construction. The relative size of Structure 5E-50 suggests that this is an elite residence, but this hypothesis is subject to field investigation through excavation.

Structure 5E-68 is an example of a kind of surface feature called "chich" mounds in northern lowland settlement archaeology (see Sabloffand others, 1985). The surface of the feature is covered with small rubble and gravel. Such features are common in ancient settlements and presumably constitute the stone core of low earthen mounds for perishable buildings.

The concentration of perishable buildings on ground level to the west of the raised substructures in this part of the Quadrat is again a common feature of northern lowland settlement patterns, as evinced in Kurjack's study of Dzibilchaltun (1974:93 and fig.25). The spatial proximity of such building dusters, showing no apparent order or arrangement, suggests the presence of a social organization focusing on orderly groups on raised substructures and a "neighborhood" of affiliated ground-level residences. The majority of buildings at Yaxuná, however, take advantage of natural rises or occur on primary substructures raised above ground level. The concentration of ground-level buildings in this part of the site is indicative of the relative priority of spatial proximity to principle residential groups over the practical discomforts of living at ground-level.

There are other structure types that are found in the Yaxuná settlement zone but are not represented in this section. Salient among these are small, steep-sided pyramids that likely served ritual rather than residential functions, and apsidal structure plans, a characteristic and pervasive building type commonly used for residential purposes to the present day. One unusual building is Structure 6F-41. This is a small, steep-sided pyramid with an apsidal plan replicated in a series of masonry terraces. On the presumption that this building served ritual functions, it falls close to the category of round temples that are characteristic of the Terminal Classic and Early Post classic periods in the Maya lowlands (Pollock, 1936) and resembles the substructure plan of the very much larger House of the Magician at Uxmal in the Puuc region (Pollock, 1980:239).

Two intriguing small structure groups in Quadrat 6F, Structures 6F-42 and 43 and Structures 6F-37 and 38, show evidence of construction following the political collapse of the Terminal Classic center. The foundation braces of buildings in these groups show incorporation of small sculpted and tenoned blocks from elaborate mosaic architectural facades decorating masonry superstructures. Some of the elements discovered to date display individual images on each block, for example, a bundled Ahau face on one block and a small seated figure on another. Other elements are units from extensive patterns.

Such facades, usually in the panels of superior moldings, are a characteristic feature of Puuc style Terminal Classic architecture (Pollock, 1980). A small altar on the raised substructure fronting Structure 6F-38 is composed primarily of such carved stones. The nearest source of such blocks from destroyed masonry superstructures is in the large public group comprised of Structures 6F-1 through 15. Excavation of this feature in 1989 will hopefully provide a primary deposit of associated ceramics that might chronologically cap the time of this political collapse, which hypothetically should coincide with the defeat of Yaxuná by Chichén Itzá.

Two politically significant residential plans of the northern lowlands, the Late Post classic Mayapan style tandem plan building, and the Patio Quad building characteristic of the city of Chichén Itzá (Freidel, 1981) have not been identified at Yaxuná to date. Furthermore, the project has not discovered any dear evidence of colonnaded halls on L-shaped platforms, another feature of Post classic public architecture in the north.

The range of structure types identified so far is commensurate with Late Preclassic through Terminal Classic occupation of the site and sustained political activity during this span, paralleling available ceramic evidence from the Carnegie Institution investigations. The surface preservation of structure plans is generally excellent except where destroyed by stone robbing for field walls that date to the Post-Conquest period. To some degree, the observed settlement pattern must register a palimpsest of accumulated community organization over time. However, the inhabitants placed a premium on stone for construction, as discussed in the next section, and likely recycled foundation stones as perishable buildings were abandoned. Hence the preserved pattern is more likely to register accretion in the form of primary substructures than in the form of foundation braces of perishable residences and other small structures. Our working hypothesis is that the scatter of ground-level perishable buildings, and the majority of the foundation braces of perishable superstructures on primary substructures, will date to the final major occupation of Yaxuná in Terminal Classic times. Preserved remains of earlier perishable superstructures may be found in the excavation of primary substructures.

The reuse of decorative facade blocks from destroyed masonry superstructures in residential architecture suggests that a residual population continued to occupy Yaxuná after its Terminal Classic collapse, but the absence of Late Post classic materials on the surface--usually signaled by an abundance of characteristic censer ware on pyramids indicates that the community was of minor consequence following that collapse.

#### **Construction Materials at Yaxuná**

A particular pattern of mining for construction materials is emerging at Yaxuná. As is normal for the northern lowlands, inhabitants broke through the indurate limestone cap rock to mine marl from below, then broke off the cap rock to form rubble fill for buildings and to provide material suitable for fashioning dressed masonry blocks. As is also normal for the region, inhabitants selected natural raises on the undulating surface for their residences and for their public buildings. At Yaxuná, however, the occupants were in the habit of simultaneously building on the rises and mining beneath them. On two of the major substructures, 6F-1 and 6E-25, the mines below the groups have partially collapsed in antiquity, creating large depressions on the surfaces of the raised plazas. In the case of 6E-25, there are at least two distinct mines into the hillock on which the group is situated.

One of these contained well preserved vessels of the Cepech, Terminal Classic, ceramic sphere in a cluster, which might have been an offering. The project intends to investigate these mines for further evidence of features. Residential groups were also constructed above mines, as in the case of Structures 6E-43 through 46.

## Reconnaissance in the Yaxuná Region, 1988

A few days were spent on continued reconnaissance of the Yaxuná region during the 1989 season. Less than 5 km north and slightly west of Yaxuná, there is a substantial pyramidal group that appears to form the center of a small satellite community. This center is in contrast to those reported from the 1986 season (Freidel, 1987), which does not contain such large public architectural complexes. Brief surface inspection of this pyramidal group showed the presence of at least one structure plan with a colonnaded doorway similar to Structure 5E-75 at Yaxuná and evidence of Terminal Classic occupation of this satellite community.

The presence of this large architectural complex in a satellite site suggests that there may be two distinctive kinds of satellite community in the vicinity of Yaxuná. One kind would constitute communities contemporary with some portion of the Late Preclassic through Late Classic span of the early occupation of Yaxuná and would contain smaller but still sizeable analogs of the major public groups at the main site. A second kind of satellite site, such as X'telhu and Popola, would contain the small and low public quadrangles with carved stone facades reported from the 1986 season. As noted in the 1986 season report (Freidel, 1987), the latter kind of satellite site shows surface

evidence of primary construction and occupation during the Terminal Classic period, contemporary with the linkage of Yaxuná with Cobá by way of Sacbe 1.

Additional reconnaissance was carried out in the area between Chichén Itzá and Yaxuná to the east of Popola, an identified "frontier" community between these capitols. Another large pyramidal complex was inspected approximately one km west of the village of Ticimul. This site is designated 16Qd(9): 2 in the Archaeological Atlas of Yucatan nomenclature (S. Garza T. and E.B. Kurjack, 1980:122; map 13) and is classified there as a Class 3 community. Very brief surface inspection indicated the presence of fine quality Terminal Classic masonry superstructure construction on the pyramidal group and also the presence of Sotuta Ceramic sphere diagnostics, the ceramics associated with Chichén Itzá. This site is roughly halfway between Chichén Itzá and the edge of the great sacbe linking Yaxuná and Cobá to the south.

Another large architectural complex can be seen from the summit of the Ticimul site to the west north and in the vicinity of the village of Nicte-Ha. This site is designated 16Qd(9): 68 and is classified as a class 4 ruin in the Atlas of Yucatan. The project did not inspect this ruin during 1989, but villagers report the presence of carved stones at the site. Rafael Cobos P. will investigate this site as part of an extensive reconnaissance of the area between Yaxuná and Chichén Itzá during the 1989 summer season.

Finally, the project inspected a small site adjacent to Sacbe 1 and directly north of it, approximately 4 km to the east of the site center. This is evidently recorded by the Atlas as site 16Qd(9): 13, a class 4 site. The site consisted of a scatter of mounded features, some on the order of 2.5 meters in elevation, directly south of a cenote and next to a substantial hill that had been extensively mined for construction material-presumably for construction of this section of the sacbe. Two mound groups were linked by a small intrasite sacbe running east west, parallel to Sacbe 1 and approximately 200 m north of it. Our reconnaissance supports the Atlas classification of the site.

#### Iconographic Materials from the 1989 Season

The project visited the site of Popola briefly during the 1989 season in order to photograph a new monument discovered by Jose Aban C. Designated Monument 5, (Fig. 15) this is a flat, well dressed stone roughly 1 m sq on the carved surface that was found facedown directly south of Structure 1 of Group 1, the small rectangular public building mapped during the 1986 season (Freidel, 1987). The location of the stone suggests that it formed part of the architectonic masonry facade of this building, along with numerous other monuments-some of which were previously removed to the town of Yaxcaba (Robertson, 1986). The project intends to investigate this building systematically during the 1989 season.

Monument 5 depicts a raptorial bird standing with upraised human arms over a polymorphic serpent. The serpent is a distinctive image characteristic of the local Yaxuná area style (Robertson, 1986). This serpent image, identified by Robertson

(1986) as a boa occurs as a baseline motif at the site of X'telhu, to the south and west of Yaxuná. It also occurs as a helmet motif in a monument from the site of Kancabdzonot, also to the south and west of Yaxuná (Fig. 8). The presence of this motif at Popola reinforces the identification of an area local style surrounding the center of Yaxuná in Terminal Classic times

The bird image standing over the serpent is distinctive. The image is a frontal view clearly displaying the long pointed beak of a predatory bird. The bird wears a string of beads, emphasizing its identification as a humanoid polymorph. The combination of the bird and the serpent is an established iconographic theme at the site of Chichén Itzá (Krochock, 1988) and is there particularly associated with sacrifice. The Popola bird is rendered differently-the Chichén Itzá examples are profile-and the serpents at Chichén are characteristically rattlesnakes rather than boas, nevertheless, the motif is shared by these sites. This discovery reinforces the hypothesis that the carvings at Popola are contemporary with the corpus of art at Chichén Itzá.

The project discovered additional new monuments at Yaxuná during the 1989 season, all in poor condition. Jose Aban discovered a substantial jamb stone bearing a lightly incised image of a spider bacab, earth bearer, on the slope of Structure 6E-12. Fragments of a sculpture in the round and of a relief carving were found on the surface next to Structure 4D-7. The sculpture in the round is a significant find, for it displays a human head wearing a peaked cap, closely resembling a sculpture in the round found on the surface of Group 1 at Popola during the 1986 season. This correspondence furthers the prospect that the Terminal Classic corpus of materials from Yaxuná will fall into the area local style identified by Robertson (1986).

#### Ancient History of the Yaxuná Area

Epigraphic and Iconographic research at Chichén Itzá during 1988 (Krochock, 1988; Freidel and Schele, in press) has demonstrated that the principle kinship relationships do not focus on the succession of males in royal dynasty, but rather upon sibling relationships between cadres of contemporaneous lords, some of who reckon descent from high status women (Fig. 10). This emphasis on cadres of lords is commensurate with the principle of confederate or councilor government ethno historically identified as the operative organization at the final Maya capitol of Mayapan and they're termed multepal or "joint rule". At Mayapan, there was a preeminent family, the Cocom, whose patriarch was a "first among equals" in the council. The texts at Chichén Itzá also identify the presence of a pre-eminent lord of the house of Cocom, named Jawbone Fan. Hun-Pik-Tok (Stuart, personal communication to Linda Schele, 1988) is a second lord of that family who may have also served as a senior ahau at Chichén Itzá. These individuals confirm the insistence of the ethno historical Cocom family that they ruled at Chichén Itzá prior to their consolidation of a second capitol at Mayapan (Roys, 1962.)

From the vantage of the Yaxuná area, the importance of this novel political order is the iconographic program that appears to express it in a nonliterary form. Chichén Itzá is famous for its processional scenes in bas-relief (Tozzer, 1957). These depictions of

group ritual performance parallel the dedicatory texts in buildings throughout the southern portion of the city raised primarily between 860 and 880 A.D., which also refer to serial or group ritual performance (Krochock, 1988). As Tatiana Proskouriakoff noted (1970), there is dearly an overlap in the use of public glyphic inscriptions and the depiction of group ritual actions by lords at the site. This correspondence suggests the working hypothesis that group processional scenes at other sites dating from the Terminal Classic period and contemporary with Chichén Itzá may register an analogous political order generated by a common "Mexicanized-Maya" cultural heritage or as an adaptive reaction to the establishment of confederacy as the guiding political principle at Chichén Itzá as it expanded its hegemony.

There is some epigraphic evidence to support the notion that multepal was not the sole province of the government of Chichén Itzá. Jeff Kowalski (1985) has noted the text on an altar at the Puuc city of Uxmal, which lists lords with three distinct emblem glyphs suggesting that they represent three distinct polities. These lords stand in the *itah*, sibling, and relationship to each other as found in the cadres of lords at Chichén. There is the possibility, then, that several of the Puuc communities contemporary with Chichén and struggling with that city for hegemony were also organizing themselves into a confederacy, perhaps with its capitol at Uxmal.

The only current epigraphic clue to the political order of the Yaxuná area polity is Mopila Monument 1 (Freidel, 1987), which records the accession of a lord to the status of *cah*, a variant of *cahal* used to denote a second rank of nobility in the Western Rivers district of the southern lowlands during the Classic period (Stuart, n.d.). This title is also used in several contexts at the Puuc region site of Xcalumkin (Pollock, 1980) in texts dating to the Late Classic period. In light of its restricted usage in the southern lowland Classic kingdoms, there is likely some historical connection between its use in the Usumacinta drainage, its use at Xcalumkin, and its use in the Yaxuná area. In the Western Rivers district, the cabal lords act as vassals and allies to kings holding the title of kid ahau, divine lord of the first rank. This is apparently a distinctive political solution contrasting with multepal, designed similarly to create internal stability within polities embracing several centers of power. In this respect, it is noteworthy that the texts of Chichén Itzá do not evince use of the canal title.

Known usage of the canal title suggests that it is intrinsically a relative status conjoined with ahau, lord of the first rank (Stuart, n.d.; Schele and Miller, 1986). By extrapolation, its use in the Yaxuná polity implies the existence of lords of the ahau status in the community, presumably operating out of the capitol at Yaxuná. The ahau status is found in the Puuc cities (Kowalski, 1985) and the Cobá polity is a kingdom ruled by lords of this rank (Thompson, Pollock and Chariot, 1932). However, the ahau status is also employed by the cadres of lords at Chichén Itzá, and even the kul ahau status is associated with several contemporary lords (Krochock, 1988). Under the circumstances, the presence of the ahau status of lord at Yaxuná, even if found in future discoveries of texts, would not necessarily imply that the polity was organized as a kingdom.

While the Yaxuná area registers the use of the cah variant of the Cahal title (a text structurally identical to the Mopila text is also found at the satellite community of

Kancabdzonot although the actual title of accession is destroyed), it also displays the processional iconographic theme pervasive at Chichén Itzá. In light of the dose spatial proximity of the Yaxuná polity to Chichén, the chances that processional iconography in the Yaxuná area registers adaptive reaction to the cadre political organization seem very good. If Terminal Classic period Yaxuná functioned to represent allies opposed to Chichén Itzá whose major communities were Cobá in the east and the Puuc cities in the west, it may well have been organized primarily as a confederacy. Not only would this organization aid in attempts to rally support from local populations also being appealed to by Chichén Itzá's confederacy, but it would also register the allied interests of the several distinct polities, the Puuc cities and Cobá, hypothesized to be represented in the Terminal Classic florescence of Yaxuná. The key epigraphic test for this hypothesis would be the discovery of the use of the itah, sibling, relationship in texts of the Yaxuná polity to define cadres of lords.

### **Directions for Future Research**

Work to date at Yaxuná has documented the presence of a dense settlement at the site. During the 1989 season, as in the 1988 season, the project intends to take advantage of the clearing of sections of the settlement for farmland to survey all observable surface features in Quadrats. The first priority will be completion of the fourth Quadrat of the central square km, Quadrat 5F to provide a control sample of settlement at the core of the ancient community. In addition, the project will extend this sample to include complete coverage of Quadrat 4E, which contains large civic-religious architectural groups. Reconnaissance in Quadrat 4F shows that it also contains large civic-religious architecture. Inspection of Quadrat 4E shows that it contains a high density of smaller structures along with civic-religious complexes. These two Quadrats, then, show indications of containing a continuation of the core ancient community. As time permits, the 1989 survey will continue beyond the perimeters of the central six Quadrats to attempt an evaluation of density drop in mounded features, particularly to the south and east. In light of constraints on time and effort, however, and in light of the general tendency for settlements in the northern lowlands to drop off very gradually away from centers, it is likely that estimations of the total size of the Yaxuna community will remain precisely that. Analysis will proceed on the premise of a sample aimed at evaluating internal organization rather than on a complete universe of the ancient settlement. Two EDM theodolite teams will carry out this work during the 1989 season. One will initiate continued survey in the month of June, and a second team will be added during the month of July, 1989.

During the month of July, the project will initiate a test excavation program at Yaxuná. The project expects to test 10 distinct localities within the settlement, aimed at specific chronological and stratigraphic problems of particular interest. Included in this sample of limited exposures will be the following localities:

1) The playing alley of the hypothesized ballcourt in the northern group, Structures 6F-15 and 16. (Fig. 11) Ball courts are a rare form of specialized facility in the northern lowlands. Ballgame ritual is intimately associated with the capture in war of highborn individuals suitable for sacrifice. I have argued previously (Freidel, 1987) that the ballgame is a central metaphor for the wars of conquest in Terminal Classic times, culminating in the Great Ballcourt at Chichén Itzá. The excavation will be a 2 by 2 m. exposure at the center of the alley, with 1 m. wide surface trenches east and west to discover the presence or absence of side playing walls characteristic of Ball courts. Given the arrangement of the two buildings, if they do not constitute a ballcourt, this exposure should reveal stairways rather than flanking playing surfaces.

2) The altar in front of Structure 6F-38 (Fig. 11) displaying reused Terminal Classic carved masonry blocks. Primary deposits of ceramics are often found in the formal altars of residential groups. Ceramics from this feature would help to date the destruction of Terminal Classic masonry buildings associated with the political center and likewise date the continued occupation of residences after this collapse. The exposure of more carved stones will contribute to the iconographic analysis of the relationship between Yaxuná and its satellite sites.

3) The summit of Structure 6E-13, the structure which terminates Sacbe 1 from Cobá (Fig. 12), a 2 by 2 m exposure. Fernando Robles (1980) dates Sacbe 1 at the Cobá end to the beginning of the Terminal Classic period. It is important to test this proposition with excavation at the Yaxuná end of the Sacbe. The dating of Sacbe 1 has significant repercussions for the interpretation of the role of Yaxuná in struggles between Cobá and Chichén Itzá as posited by Robles and Andrews (1986).

4) The summit of Structure 5F-2 (Fig. 13), a 2 by 2 m exposure. This is the original summit of the largest acropolis at Yaxuná. Surface inspection during mapping in 1986 showed the presence of well-dressed retaining wall blocks of a summit-building platform. Excavation will aim at the recovery of a sealed sample of ceramics to help date the final formal construction on this summit. Brainerd's (1958) excavations at the base of this acropolis suggested a Late Preclassic-Early Classic date. This summit may well have been refurbished in Terminal Classic times. However, given the extensive quarrying of the southern side of Structure 5F-1 for monolithic cut stone blocks in the course of Terminal Classic construction at the site (Freidel, 1987), it is equally likely that this summit was not reused in the Terminal Classic period and its final construction dates to the previous major florescence at Yaxuná.

5) The summit of Structure 5E-19 (Fig. 12), a 2 by 2 m exposure. This is the largest civic-religious complex in the southern zone of the site. The absence of dear superstructure foundations suggest that it was not a focus for major refurbishment in Terminal Classic times. The objective will be to discover ceramics in construction fill that date the major construction episode.

6) Structure 5E-75 (Fig. 14), surface clearing and a 1 by 2m axial trench in the central room. The structure plan suggests a Terminal Classic date for construction. The objective of excavation will be to date the superstructure and investigate earlier construction at this locus in the densely occupied southern zone of the site.

7) Structure 5E-57, (Fig. 14) surface clearing and a 1 by 2m axial trench. This is a building platform for a perishable superstructure in a large agglutinated platform complex in the southern settlement zone. The propensity of the inhabitants to build outwards on natural rises suggests that this locality will yield the deepest stratigraphy on the primary substructure.

8) The summit of Structure 4E-5 (Fig. 14), surface clearing and a 1 by 2m axial trench. This is the largest secondary substructure on the group, which terminates Sacbe 5 at the western end. The objective of the excavation will be to date the final construction of the building. The relationship between the building and the sacbe is such that a date on the building should provide a good indication of the date of the sacbe and hence an indication of when the intrasite sacbes were built in the center.

9) Structure 5E-125, (Fig. 14) surface clearing and a 1 by 2m axial trench. This is a perishable superstructure on a boulder-lined primary substructure. The objective will be to date the superstructure and to investigate the prospect that the boulder-lined platform underneath was constructed in Late Preclassic-Early Classic times.

10) Structure 6E-72. Surface clearing and a 1 by 2m axial trench. This is one of four perishable superstructures comprising a probable residential group in the southeastern zone of the settlement. The objective will be to date the construction and occupation of the group.

As time permits, the project will also clear Structure 1 of Group 1 at the satellite site of Popola. This structure has the decorated facade of monolithic bas-relief sculptures. The structure has been looted; the project will clear the loot holes on the surface to expose-sealed context suitable for the retrieval of a ceramic sample in association with the construction of the building. The loot holes will be refilled and sealed over to consolidate the building and to discourage further damage. The objective of this work will be to date the Yaxuná area iconographic style.

The project will carry out further regional reconnaissance and survey in the zone between Chichén Itzá and Yaxuná, and between Chichén and Sacbe 1. Rafael Cobos Palma will carry out this work. As new carved bas-reliefs are discovered at these sites, they will be photographed and recorded.

#### Notes

1. The Carnegie Institution of Washington Yaxuná during the 1930s and 1940s.

2. Robles in his master's thesis suggest that the causeway is approximately contemporary with the final readable Long Count date at Cobá, which are about 780 A.D.

3. Most Maya archaeologists working in the north believe that Chichén Itzá ruled as a regional capital without rival during the final centuries of the Terminal Classic period (the so-called "Toltec" period at that city), alternatively called the Early Post classic period (i.e. 900-1200 A.D.; Andrews and Sabloff, 1986:450). The issue of the overlap of the Cehpech and Sotuta ceramic spheres, associated with the Terminal Classic florescence of the Puuc cities and Cobá on the one hand and the apogee of Chichén Itzá on the other, remains an open one and renders an assertion of the regional hegemony of Chichén Itzá hypothetical. Bey and Ringle (1989) argue that the sizeable capitol of Ek Balam, to the north and east of Yaxuná, was still politically potent during the florescence of Chichén Itzá. On this basis, they challenge the notion of a regional hegemony under the aegis of Chichén. However, the paucity of Sotuta ceramics at Ek Balam renders problematic any hypothesis of contemporaneity of that center with the height of Chichén Itzá - represented in the latest major construction there in the northern, nonliterate, center.

4. Bey and Ringle (1989: 6) suggest that the major architectural complexes at the site of Ek Balam, to the north and east of Yaxuná, may have incorporated both public ritual and elite residential buildings in the context of Terminal Classic construction and occupation. Their ethno historical arguments are interesting, but pertain to a period of time when massive pyramidal substructures were rarely built and are usually described as public in nature by documentary sources-e.g. the Temple of Kukulcan at the site of Mayapan. The function of large, multi-roomed masonry structures ("palaces") in conjunction with pyramidal substructures remains problematic and controversial. Some particularly well documented instances, such as the North Palace at Palenque, are clearly places of royal accession and sacrifice (Freidel, in press) directly analogous to smaller "temple" structures. Such instances do not preclude the possibility of residential function for other "palaces". For the present, the Yaxuná project operates on the premise that whether or not some elite lived in such major complexes, their function was primarily public, civic and religious.

5. Ek Balam's central group (Bey and Ringle, 1989) also evinces a primary triadic plan of large buildings with a southward orientation. This plan at Ek Balam was closed at the south by the construction of a duster of smaller buildings. Ceramics from test excavations and radiocarbon dates on wood from the latest construction efforts on the central structures lead Bey and Ringle to hypothesize that this group was raised in its entirety in Terminal Classic times. Although I do not doubt that Terminal Classic populations were capable of major construction, as evinced by Chichén Itzá's buildings and those of Cobá and the Puuc cities, dating of the final episodes of use and modification to Terminal Classic times does not demonstrate that the buildings were raised in their entirety in that period. That is a hypothesis for further work at Ek Balam. In the meantime, there is a remarkable general resemblance between the triadic central group at Ek Balam and the central group at Yaxuná-which test excavations by Brainerd, surface architectural diagnostics and reorientation to Sacbe 1 indicate was modified rather than constructed in its entirety during Terminal Classic times.

6. The intrasite sacbes at Yaxuná generally establish a quadripartite division of the settlement roughly corresponding to the central four Quadrats of the survey. Bey and Ringle (1989) note the organization of intrasite sacbes at Ek Balam, which they likewise date to Terminal Classic times, and suggest that this registers a normative division of the community into neighborhoods whose leaders shared political authority as "segments" of the "state". This view of a multiplicity of authorities is commensurate with the idea of multepal or joint rule, which we suggest was emerging as a popular innovation of the Terminal Classic-Early Post classic period. The four-part organization of both Ek Balam and Yaxuná is interesting and does correspond with idealized socio-political divisions of the Contact Period. Indeed, I identified a dear example of this organization in the administrative center of Late Post classic period San Gervasio on Cozumel Island (Freidel and Sabloff, 1984). It is, however, an organizational principle displayed in intrasite sacbes, which dearly predates the Terminal Classic period in the northern lowlands (Dzibilchaltun, for example Kurjack, 1974). The use of both north-south and east-west axes is a common and ancient feature of public building organization in the southern lowlands as well, although not necessarily tied to intrasite sacbes. Certainly in the southern lowlands, social segments were organized under the authority of paramount kings between Late Pre-classic and Late Classic times.

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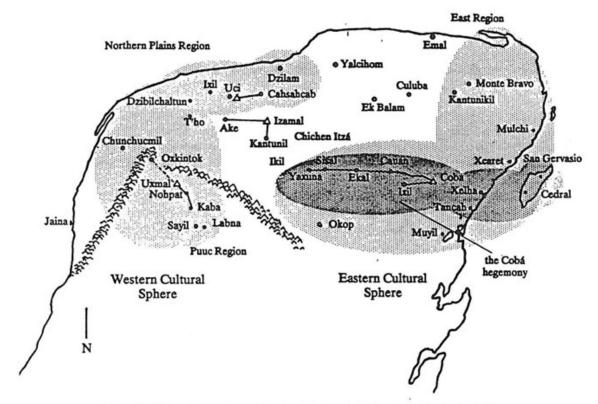
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Cultural Spheres in northern Yucatan during the Terminal Classic Period

Figure 1. Northern Lowlands showing inter-site causeway linking Cobá and Chichén Itzá.

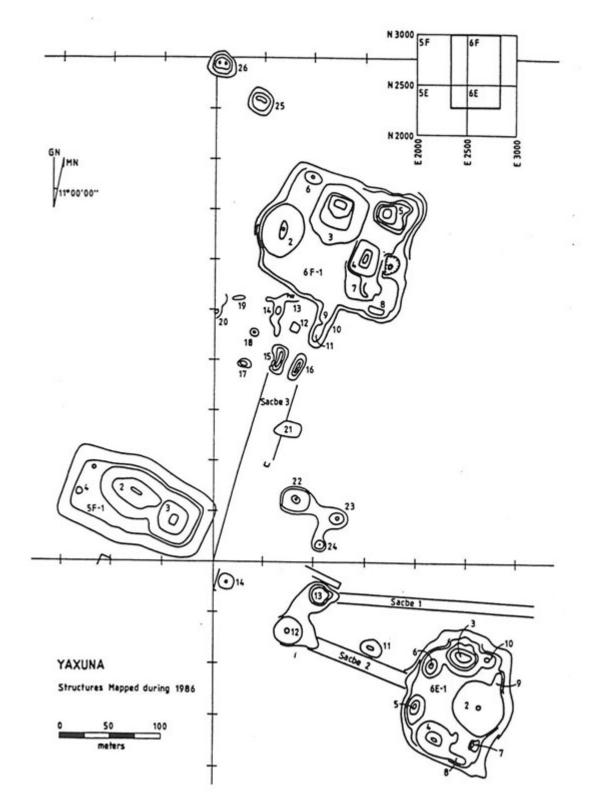


Figure 2. The Yaxuná Archaeological Survey map of central Yaxuná after the 1986 season.

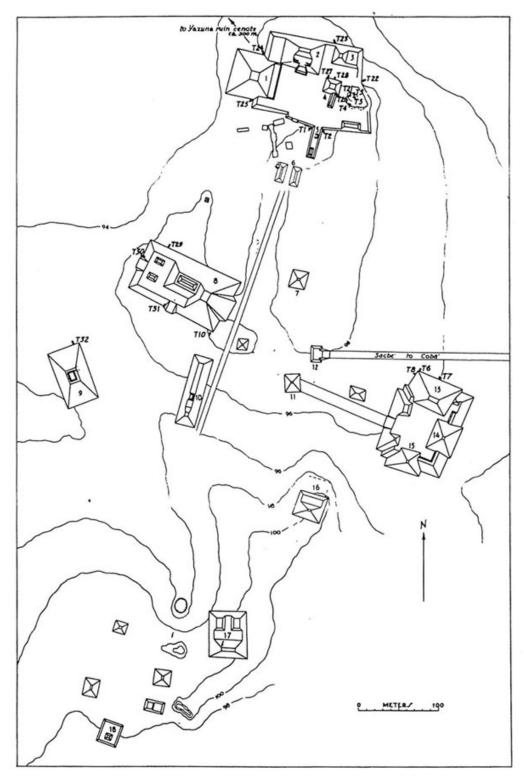


Figure 3. Carnegie Institution Map of Central Yaxuná, from Brainerd 1958).

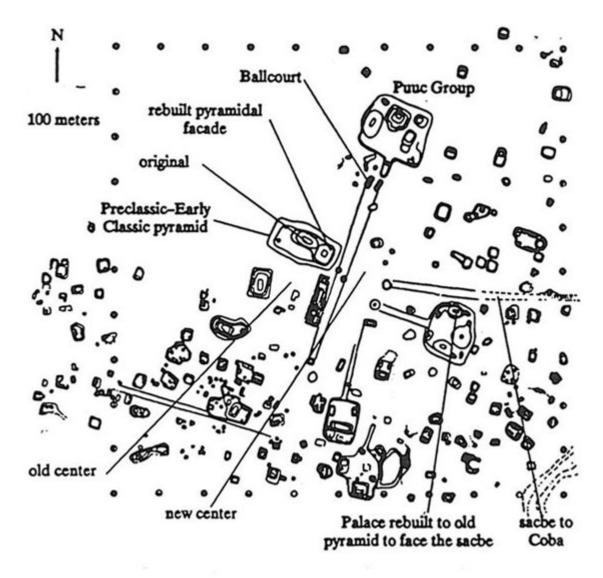


Figure 4. Yaxuná Archaeological Survey Map of Central ruins at the site showing Terminal Classic modifications of civic-religious groups

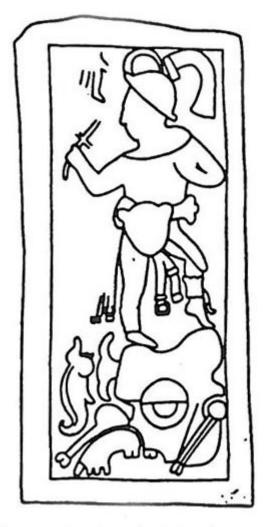
Figure 5

## Image not available

Yaxuná Archaeological Survey Map of Yaxuná after the 1988 season.

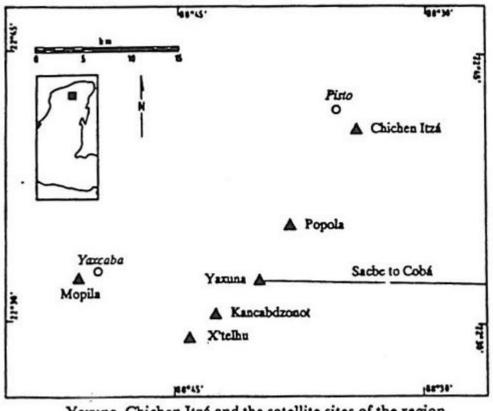


Figure 6. Illustration of Early Classic monument at the northern edge of Structure 6F-4, after Brainerd 1958.



Panel from Yaxuna showing a lord dancing on a Waterlily Monster

Figure 7. Drawing of the Terminal Classic bas-relief on the southern edge of Structure 6F-19, by Karim Sadr after field observations by David Freidel.



Yaxuna, Chichen Itzá and the satellite sites of the region

Figure 8. Map showing the satellite sites in the vicinity of Yaxuná.

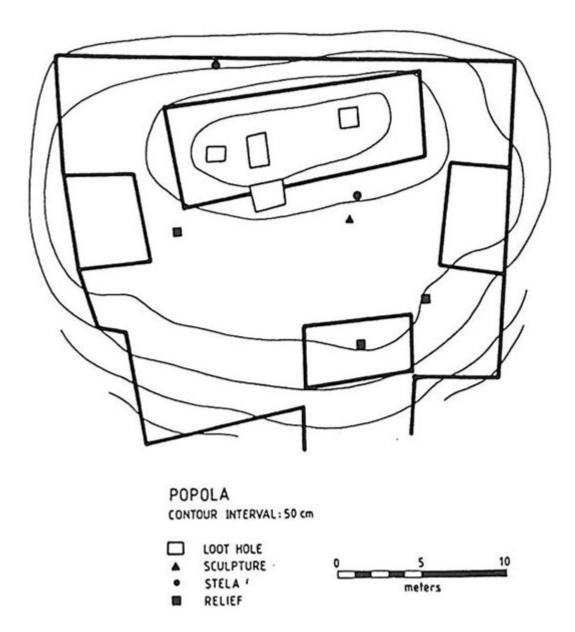


Figure 9. Plan of the group containing the small rectangular building with basrelief facading at the site of Popola.

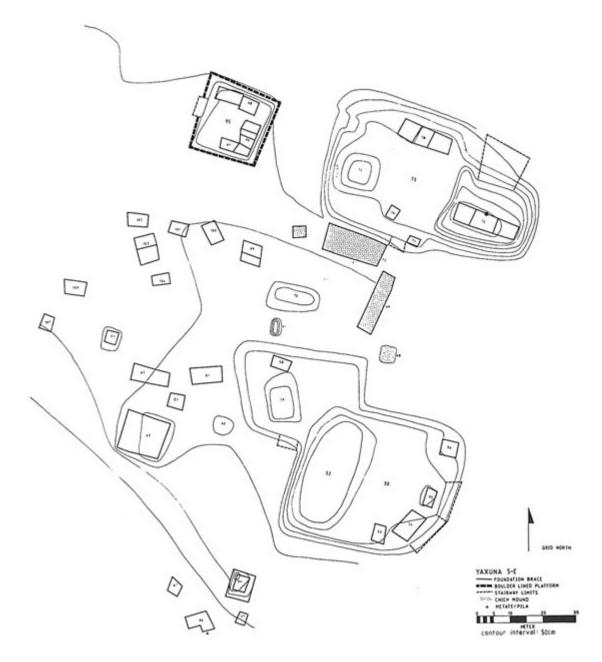


Figure 10. Detail of final rendering. Quadrat 5E, Yaxuná, showing variety of settlement features.

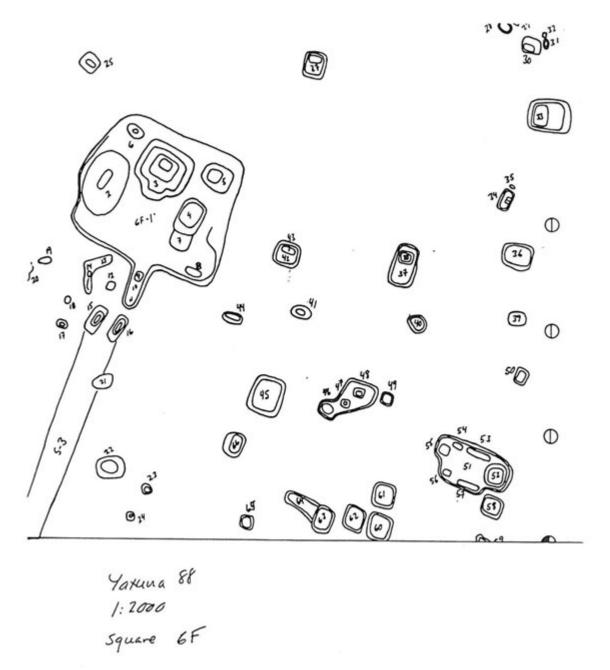


Figure 11. Sketch plat of Quadrat 6F with structure numeration.

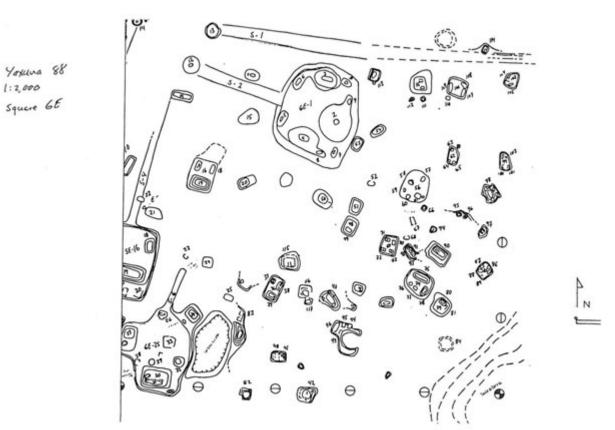


Figure 12. Sketch plat of Quadrat 6E with structure numeration.

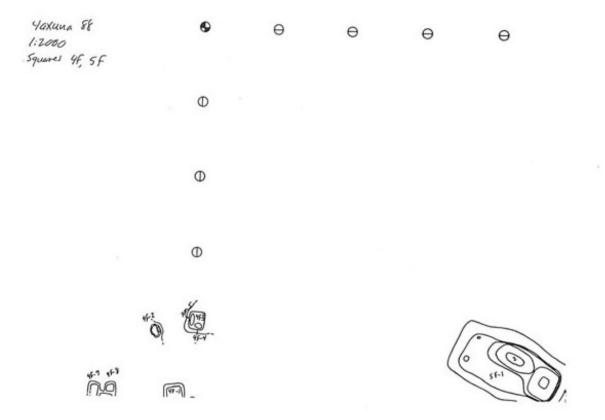


Figure 13. Sketch plat of Quadrat 5F with structure numeration.

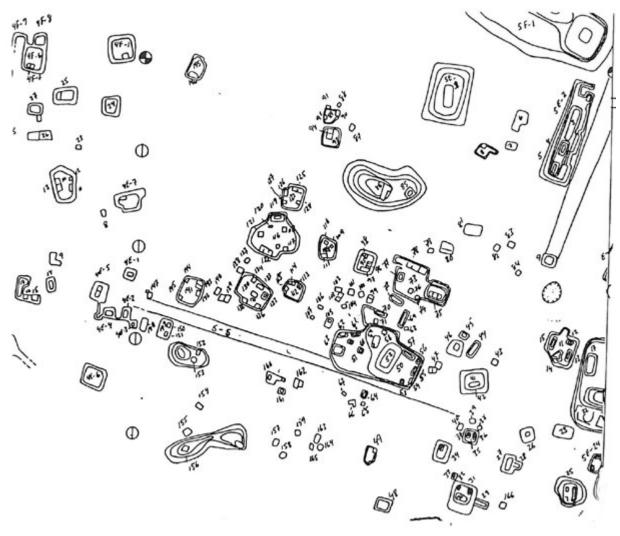


Figure 14. Yaxuna 1:2000, Squares 4E & 5E



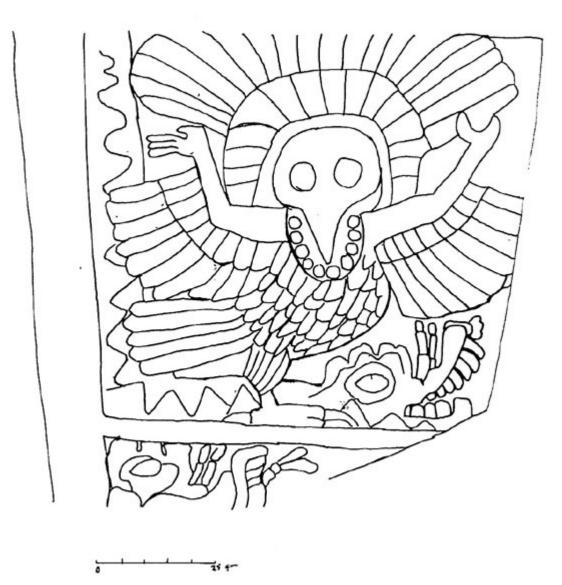


Figure 15. Sketch of Monument 5, Popola, after photographs