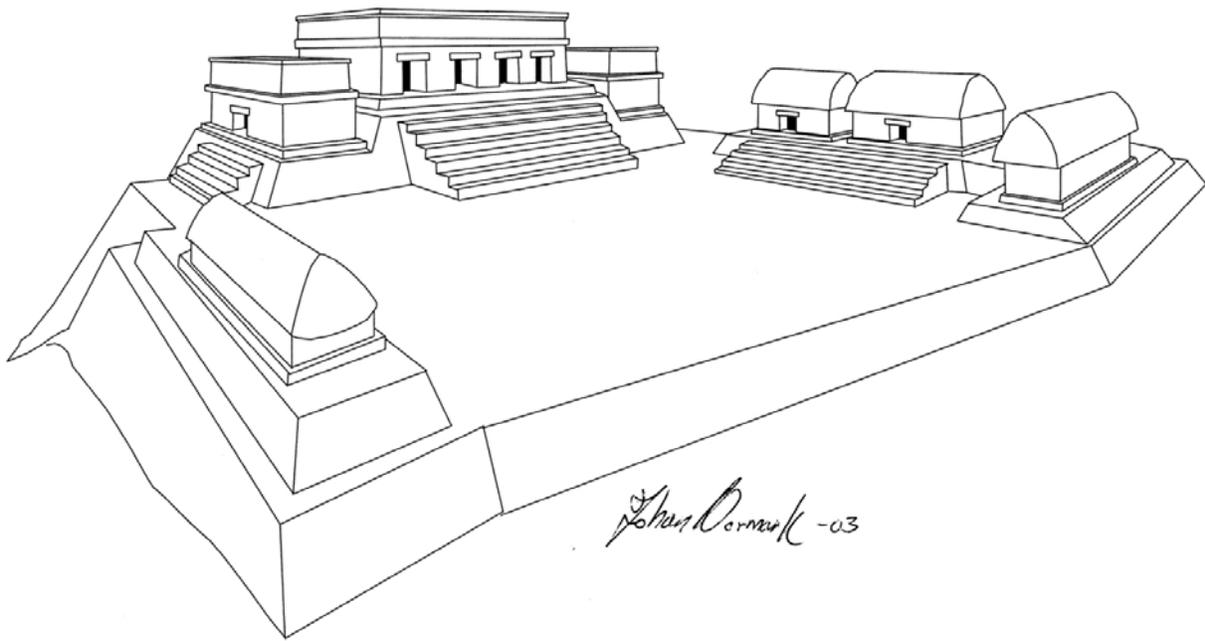


Final Report
of the
Cochuah Regional Archaeological Survey's
2003 Field Season



edited by Justine M. Shaw

with contributions by
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Cover illustration of Sacalaca's Acropolis (Structure S5E5-1) by Johan Normark

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NOTE: Copies of this report, and prior Yo'okop reports, are available on our web page:
<http://online.redwoods.cc.ca.us/yookop/>. The web page also contains photographs and
updates not included in this report.

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Introduction

Justine M. Shaw

In 2003, the *Proyecto Arqueológico Yo'okop* became the Cochuah Regional Archaeological Survey (CRAS), with the goal of better placing the site of Yo'okop in its regional economic and political context. This new phase of research involved basic reconnaissance, followed by detailed mapping of critical areas, test pits, and surface collections in two of the *ejidos* (Xquerol and Sacalaca) adjacent to the *ejido* of Saban, in which Yo'okop is located (Figure 1).

Unfortunately, the 2003 season was limited to a five-week period of active fieldwork, followed by analyses. Three weeks were spent in the *ejido* of Xquerol, while two weeks were spent in Sacalaca. An additional challenge was provided by the location and condition of the remains. Unlike Yo'okop, which is positioned far from the pueblos of Saban, Huay Max, and Dzoyolá, many of the remains in Xquerol and Sacalaca were far from pristine. The same features that attracted the Classic Maya have continued to draw modern settlers; looters' holes, modern constructions, and roads have heavily impacted the sites. The desire to attract tourist money has also spawned a coordinated program to repair the road from Tihosuco and clear nearby mounds. This program is slated to start within the next year. As it is not connected to INAH, no archaeological research or oversight is planned to accompany this increased exposure of fragile archaeological remains. The escalating damage has made it increasingly critical to document and investigate a region that has never been subject to a coordinated program of archaeological research (Stromsvik, Pollock, and Berlin make some comments on the region [Stromsvik *et al.* 1955], but this effort does not provide material that may be readily compared to data from Yo'okop).

In 2003, the goal of the CRAS was not to document all archaeological remains in the region. Instead, local informants and personal observations were used to find the largest-scale and/or most critical remains (such as water sources) in each *ejido*. Locating these constructions provides an idea where ancient populations were concentrated. Where temporally diagnostic materials were available for study (ceramics and/or architectural elements), the Project was able to begin to understand regional settlement dynamics through time. Additionally, the architectural foci provided indications about which types of resources were critical in locating settlement, and which appear to have been secondary concerns. While small features and architecture were undoubtedly missed, it was felt that this approach provided the best compromise between logistics and ideal goals.

In the future, further general reconnaissance, as well as more detailed studies of specific structures and features, is envisioned to continue for several more years. With a focus on settlement dynamics through time, areas of investigation will include settlement shifts between the Late Formative and Early Classic periods and the political and economic affiliations of Terminal Classic populations. Based upon the very limited 2003 sample, Late Formative populations appear to be quite prevalent throughout the region, while Early Classic materials are scarcer. An informal visit to the site of Ichmul, located in the state of Yucatan, revealed monumental constructions with Early Classic



Figure 1. Location of Sites in the CRAS Study Area

sherds littering the surface of the modern pueblo. Ichmul may have acted much like Izamal did in the far north, drawing population from surrounding centers. The site of Ichmul, and the *sacbe* connecting it to Xquerol, is envisioned as an area that will be proposed for future regional research. Terminal Classic political dynamics appear to have been quite interesting in the area. Yo'okop, Xquerol, and Sacalaca exhibit thriving Terminal Classic populations utilizing Cepech ceramics, while Nohcacab (in the *ejido* of Xquerol) displays Sotuta ceramics and at least two examples of Chichén Itzá-style buildings. It is hoped that someday the fortifications at Yo'okop can be better investigated in order to test the hypothesis that they represent an effort to defend against a Chichén Itzá-backed intrusion. A final area of investigation, particularly at the site of Nohcacab, will be the strategies used to capture water and conduct agriculture.

The 2003 CRAS clearly raised more questions than it answered; yet this first season provided a valuable foundation from which both targeted and general investigations may be planned for future seasons. It is hoped that through these efforts, the archaeological map of central Quintana Roo will move from a region marked only by Yo'okop to the densely populated zone that it once was. With this, our understanding should move from single-site sequences to regional dynamics.

Methods

Justine M. Shaw

The 2003 Cochuah Regional Archaeological Survey (CRAS) involved archaeological reconnaissance of the *ejidos* of Xquerol and Sacalaca. The goal of the project was to obtain a general idea of the location, scale, and variety of the archaeological remains in each *ejido*, with the larger and more accessible remains receiving greater attention due to the limited time available for the survey. Additionally, the Project sought out locales related to topics of interest that could be more intensively investigated in the future.

As no formal archaeological research had ever been conducted in the region before (with the exception of the investigators' three seasons at the nearby site of Yo'okop), it was determined that CRAS should begin by performing basic documentation on the largest architecture, with surrounding smaller features included as time permitted. For this reason, investigators utilized local consultants as their primary means to locate sites. Since the local Maya have been utilizing their territory for *milpas*, hunting, and procuring natural resources throughout their lives, most adult men are able to readily report the location of *montículos*. Such features are generally at least 3 m tall, decidedly skewing our sample. However, archaeologists made an effort to record the existence of adjacent smaller constructions in all zones that were mapped in detail.

A Global Positioning System (Garmin 12CX GPS) was used to locate the modern pueblos and archaeological sites within the region. More detailed mapping was done using a Topcon GTS-213 total station with a TDS-48 data collector operated by the principal investigators and/or other archaeologists. Topographic relief, as well as any *in situ* archaeological elements, was recorded. The resulting maps are presented with a 50 cm contour interval (unless otherwise noted) in order to display some subtle terrain changes. Local crews were hired to clear all features to be mapped and to help locate features. Due to the structure location procedure, mapping generally began near a large mound and proceeded to the surrounding territory as time permitted. Data on each point (recorded as coordinates N, E, and Z relative to the site datum, as well as with a descriptive code and notes) were saved on the data collector and then downloaded onto a laptop computer each night. Data were e-mailed home each weekend to ensure their safety. Using Surfer (version 7.0), maps were generated daily to allow ground-truthing. This strategy permitted maps of the documented regions to be prepared and given to INAH-QR and local authorities at the time the field season was completed.

Surface collections were used in a limited number of locales. In general, surface materials in the region are in very poor condition due to hundreds of years of exposure to the environment (including *milpa* burning). However, in some places (road cuts, looters' holes, animal burrows, etc.) the terrain had been disturbed relatively recently, producing ceramics in an identifiable condition. In these types of settings, and where no other indications of a possible date were available (intact architecture), surface collections were made.

Two 2 x 2 m test pits were excavated in each *ejido*. These plaza area excavations were aimed at providing ceramics from sealed contexts that could be used to date the sequence of constructions in a given area, as well as to determine the number and characteristics of such building and occupation episodes. All pits were excavated in natural levels, with materials separated according to the operation/ level/ lot system. All fill was removed using small hand picks and trowels, transferred to buckets, and then screened using 1 cm mesh. Shaw or Johnstone monitored each excavation, which was under the immediate direction of one or more of the Project archaeologists. One to two local crew members assisted with the excavation and screening. All test pits were backfilled upon completion of the excavating and recording process.

Ceramic finds from the excavations were washed and marked with the operation, level, and lot, while lithics were not scrubbed under water so that residue analyses might be done in the future. The Project utilized digital photography, color and black-and-white print photographs, color slides, plan and profile maps, and extensive note-taking to record remains visible on the surface, in areas impacted by modern activities, and in excavations.

All collected and excavated materials were returned to their source *ejidos* following study and documentation by Project archaeologists. At this same time, maps and preliminary summaries were presented to local authorities so that interested individuals could begin to see the products of our research as soon as possible. Spanish-language versions of the completed report will be delivered to Xquerol and Sacalaca in 2004.

Additionally, Veronica Miranda continued the program of associated cultural anthropological research begun in 2002, with a study of pregnancy and childbirth practices in Saban and Huay Max. Although Sandra Bever was not able to travel to Saban in person, she continued to advise Miranda about how to select and conduct her case-study-based research. It is hoped that Bever will be able to return in the future to continue her study of the relationships between the modern Maya and Project archaeologists.

Ejido of Xquerol

Justine M. Shaw

The *ejido* of Xquerol is located on the Yucatan-Quintana Roo border (Figure 1), separated from the Dziuché-Tihosuco road by the *ejidos* of Sacalaca and San Felipe. It contains two principal archaeological sites, Xquerol and Nohcacab. The former is tied to the site of Ichmul by a *sacbe*, and its remains are scattered throughout the modern pueblo of Xquerol. The latter is a separate site located approximately 3 km east of Xquerol pueblo on a rancho currently covered by *zacate* grass.

Site of Xquerol

Only four mounds were detected in the site of Xquerol (Figure 2). The largest of these, Structure N1E1-1, lies to the northeast of the modern pueblo center (*zocalo*), directly to the north of the Catholic church. Although this 9-m-high mound has been damaged by four recent looters' holes, it is still possible to detect the remains of a south-facing stairway, a superstructure on the northern side (rear) of the summit, and some sort of ramp or platform extending for approximately 5 m from the northern edge of the pyramid (Figure 3). A large subterranean *sascabera* lies directly southeast of the mound, extending under the modern house in this same location. No sherds or other artifacts were detected within the *sascabera*. However, it currently contains modern refuse, serves as the outlet for the modern house's drain pipe, and has had significant recent roof fall, so any sherds or features may be covered and/ or destroyed. This feature likely supplied at least some copious stucco that still covers much of Structure N1E1-1. A 2 x 2 m test pit was excavated near the north-central base of the mound in order to better understand the site's occupation sequence without impacting the structure (see "Xquerol's Operation 1" this volume).

Three small mounds currently accompany this principal construction. To the northeast of Structure N1E1-1 lies Structure N1E1-2, a 2.5-m-high mound with no *in situ* architecture visible on its surface. In addition to recent cultural impacts, including an *albarrada* dividing *solares* and the placement of a pig feeding area near the base of the mound, several large trees are growing directly on the top of the mound. Structure S1E1-1 is currently sandwiched between the colonial church and modern *primaria* school. It too has been heavily affected, with stones likely being removed for church and other constructions, leaving only one wall line intact along its northern side. A cistern and outhouse have been built on the eastern edge of the mound. Terminal Classic and Postclassic ceramics were collected from a 2 x 2 m area of the western side. Directly south of Structure N1E1-1 (SW of Structure S1E1-1) are the remains of Structure S1E1-2, which has been used as a source of building material to such an extent that no intact architecture remains.

The *sacbe* connecting Xquerol to Ichmul was first reported by Stromsvik, Pollock, and Berlin (1955), during their reconnaissance of the region. However, it has never actually been mapped, even in an informal manner. Unfortunately, the *sacbe* connecting Xquerol to Ichmul could only be documented for approximately 20 m this season. The vast majority of the ~3 km roadway lies within the state of Yucatan and

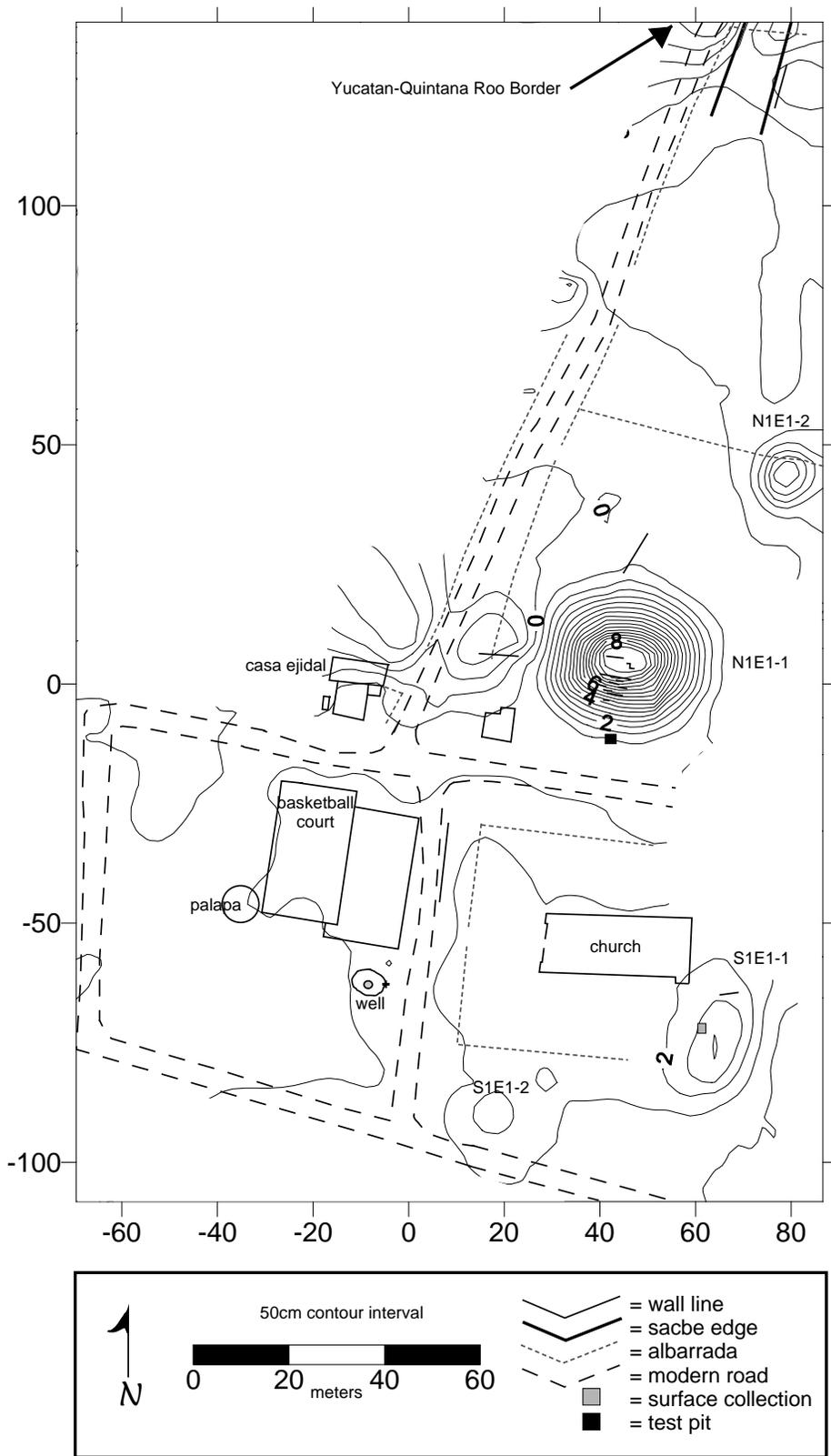


Figure 2. Plan Map of Xquerol

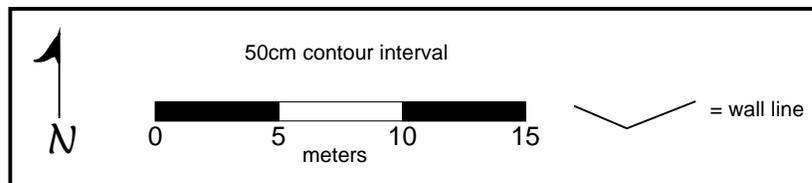
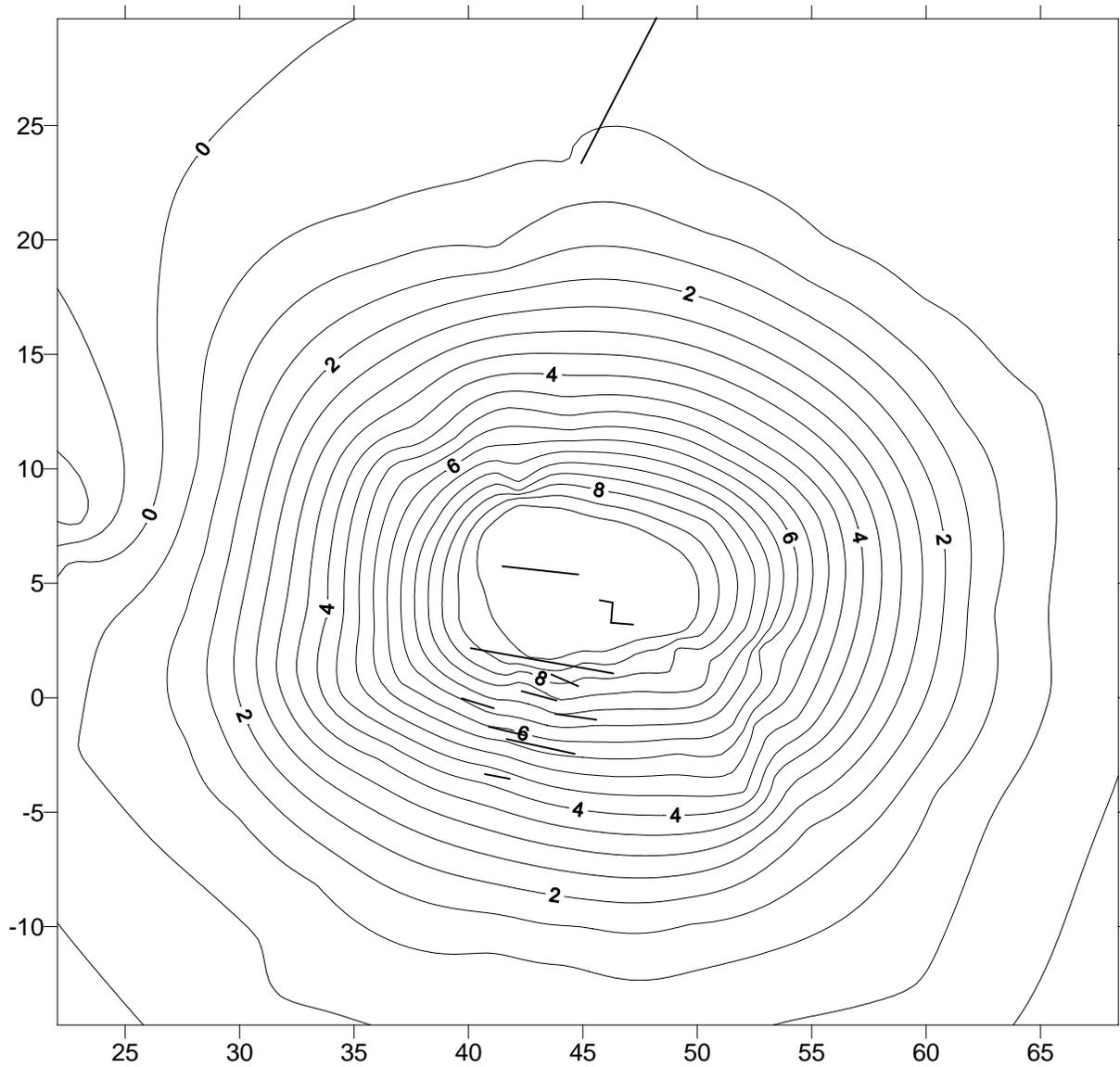


Figure 3. Xquerol's Structure N1E1-1

was therefore not included in our INAH permit to work in Quintana Roo; it is hoped that both Ichmul and the *sacbe* may be investigated in the future. The southern terminus of the *sacbe*, at Xquerol, could not be clearly identified due to intensive use of *sacbe* materials to build adjacent *albarradas*, to augment the modern road to Ichmul, and construct houses and other recent features. The portion of the *sacbe* documented generally points towards Structure N1E1-1, and a ramplike feature was located on the northern end of the mound. However, the angle of the remaining western wall line of the ramp is not consistent with the *sacbe*'s documented course and the intervening ground not only lacks the large rocks that would have been robbed for modern constructions; it also does not have *chich* or other components of a *sacbe*. Only *chac luum* is present in the *solar* of the mound to the north of Structure N1E1-1. A 9-m-long step was located off the eastern edge of the *sacbe* near the last point at which it could be clearly seen. It appears that the *sacbe* terminated into a relatively open plaza area well to the north of Structure N1E1-1.

Site of Nohcacab

The site of Nohcacab is much better preserved than Xquerol as a result of its greater distance from a modern population center. The *rancho* built on the site appears to impact relatively few mounds, with only one structure sitting directly upon a mound. Currently, only five cattle live at the *rancho* (said to be large enough for fifty or more), and there appears to have been relatively little recent damage due to trampling. At present, groundcover for most of the site is *zacate* grass, which is regularly burned. While this treatment is not beneficial for surface remains, fires are certainly not a new event for an area accustomed to swidden agriculture for centuries.

The topography of Nohcacab is quite distinct in an area characterized by essentially flat terrain at the very margin of the *cenote* zone (Sacalaca contains one of the furthest south *cenotes*). Nohcacab lacks significant topographic changes, such as the hills found near Morelos, to the southwest (the *municipio* capital). However, most of the site is composed of a series of medium-to-small *rejolladas* and modified natural hillocks (Figure 4). The site center is positioned between four large depressions. These *rejolladas* and most other open, rock-free areas contain deep soil and few sherds, while nearly every rise contains artifacts, structures, and/or features of some kind. The tallest mounds on the site are only 3-4 m high. Based upon GPS points recorded during an informal reconnaissance in the four cardinal directions, the extent of the site is estimated to be about 1 sq km, with structural and artifact density dropping off markedly as the unique hillock/ *rejollada* arrangement gives way to largely flat terrain. About 400 sq m of the site was mapped in 2003, with most of the remainder examined during informal reconnaissance.

At present, Nohcacab contains no water sources except for a historical well associated with the *rancho*, which currently reaches water at about 28 m below the surface. In the past, it appears that solely water catchment and storage features met the occupants' hydrological needs. Throughout the site, natural basins and adjacent channels were modified to direct and hold water (Figure 5). The occupants of the houses surrounding the water features may have had a relationship similar to the water hole groups documented ethnographically in Zinacantan (Vogt 1970:63-65).

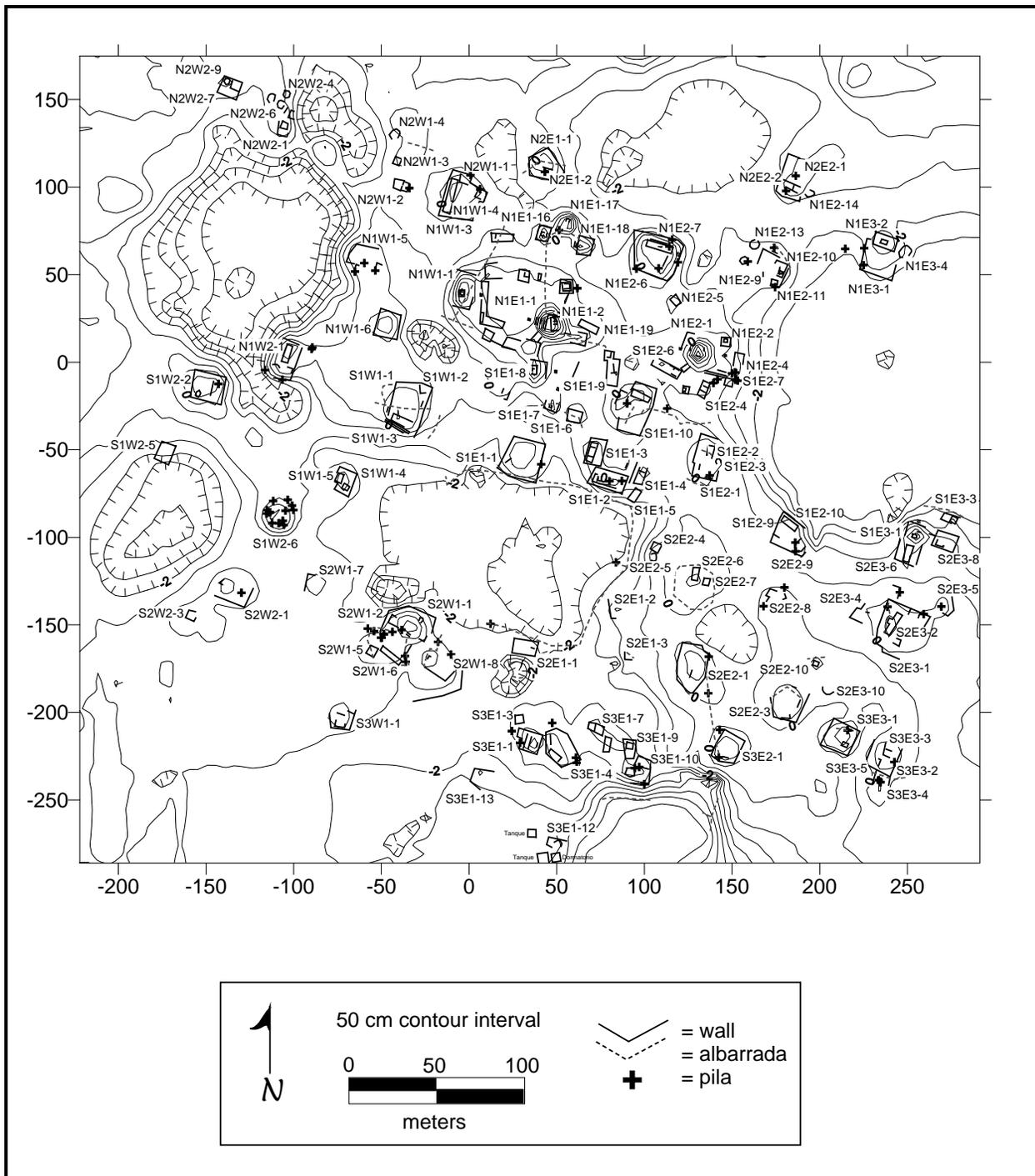


Figure 4. Plan Map of Nohcacab

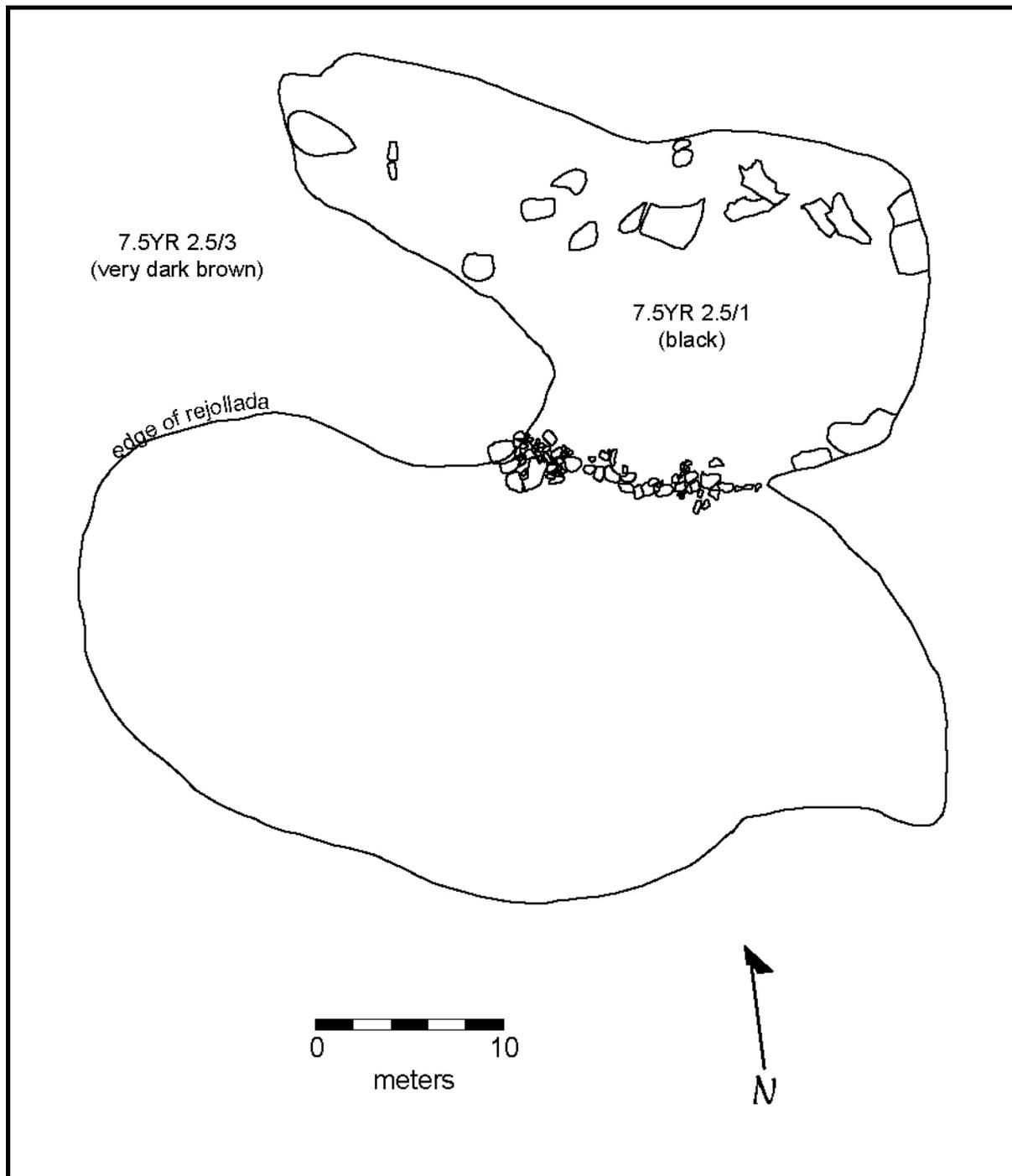


Figure 5. Nohcacab Water Catchment Feature

Vogt describes how such groups varied seasonally, with more smaller groups drawing water from many more waterholes closer to their homes during the rainy season and fewer major waterholes in use by more groups during the dry season. In addition to maintaining the feature itself, each waterhole group in Zinacantan also maintained shrines for its waterhole. Related hypotheses may be investigated in future seasons.

While no single structure is outstanding in its scale, a number of buildings contain noteworthy features. Two Chichén Itzá-style structures were visible on the surface. The first of these, Structure N1E1-8, is L-shaped, with a double wall line in the sides and rear and a bench at the junction of the two wings (Figure 6). Nohcacab's Operation 1, located immediately to the west of the building (and the Postclassic altar later constructed using its stones), provided a sample of Chichén Slate Ware ceramics from the level associated with the structure, preceded by a Late Formative occupation (see "Nohcacab's Operation 1" this volume). Another Chichén Itzá-style structure associated with Chichén Slate Ware ceramics (observed on the surface) is Structure S2E3-2 (Figure 7), located well to the southeast of the first example. Although heavily robbed for an *albarrada* running over its western side, this T-shaped construction likewise still evidenced a double wall line in its rear, including its western extension that formed the "T".

Structure S5E3-1 also stands out architecturally. This ~16 sq m platform was built using large, uncut upright stone slabs forming its edges (Figure 8). The interior fill appears to be a traditional boulder to cobble to *chich* material. While this style is characteristic of the Late Formative, the top of the platform is presently capped by at least one Terminal Classic structure.

Based upon ceramic evidence from a test pit located to the west of Structure N1E1-8 (Figure 6), ceramics observed on the surface during the mapping process, and the styles of surface architecture, the site's occupation waxed and waned through time. Late Formative materials were discovered in the Operation 1 test pit, while Early and Late Classic materials were largely absent from the test pit and surface. Late Formative ceramics were also evidenced in high frequencies during the reconnaissance to investigate the site's boundaries. It appears that the site reached its greatest extent during this time, as Late Formative are predominate on the surface outside the immediate site core, within the four large *rejolladas*.

The Terminal Classic appears to have been a time of resurgence, with Terminal Classic architecture and ceramics prevalent throughout the site core. Interestingly, while Yo'okop, Xquerol, and Sacalaca seem to have lacked a Chichén Itzá affiliation, Nohcacab has both Chichen ceramics and the Chichén Itzá-style structures. Puuc-style architectural elements (Figure 9), all in secondary and tertiary contexts, were located in the zone around Structures S1E3-1, S1E1-2 and N1W1-1.

Postclassic altars and shrines, accompanied by Chen Mul *incensario* sherds, cap many of the "larger" mounds (see "Small Postclassic Shrines at Nohcacab" this volume). Although no truly "large" mounds graced Nohcacab, nearly all the structures that were above average, and possibly non-residential in their original function based upon a more "pyramidal" shape, were capped by the remains of Postclassic altars and shrines. These constructions always appeared to utilize the materials closest at hand,

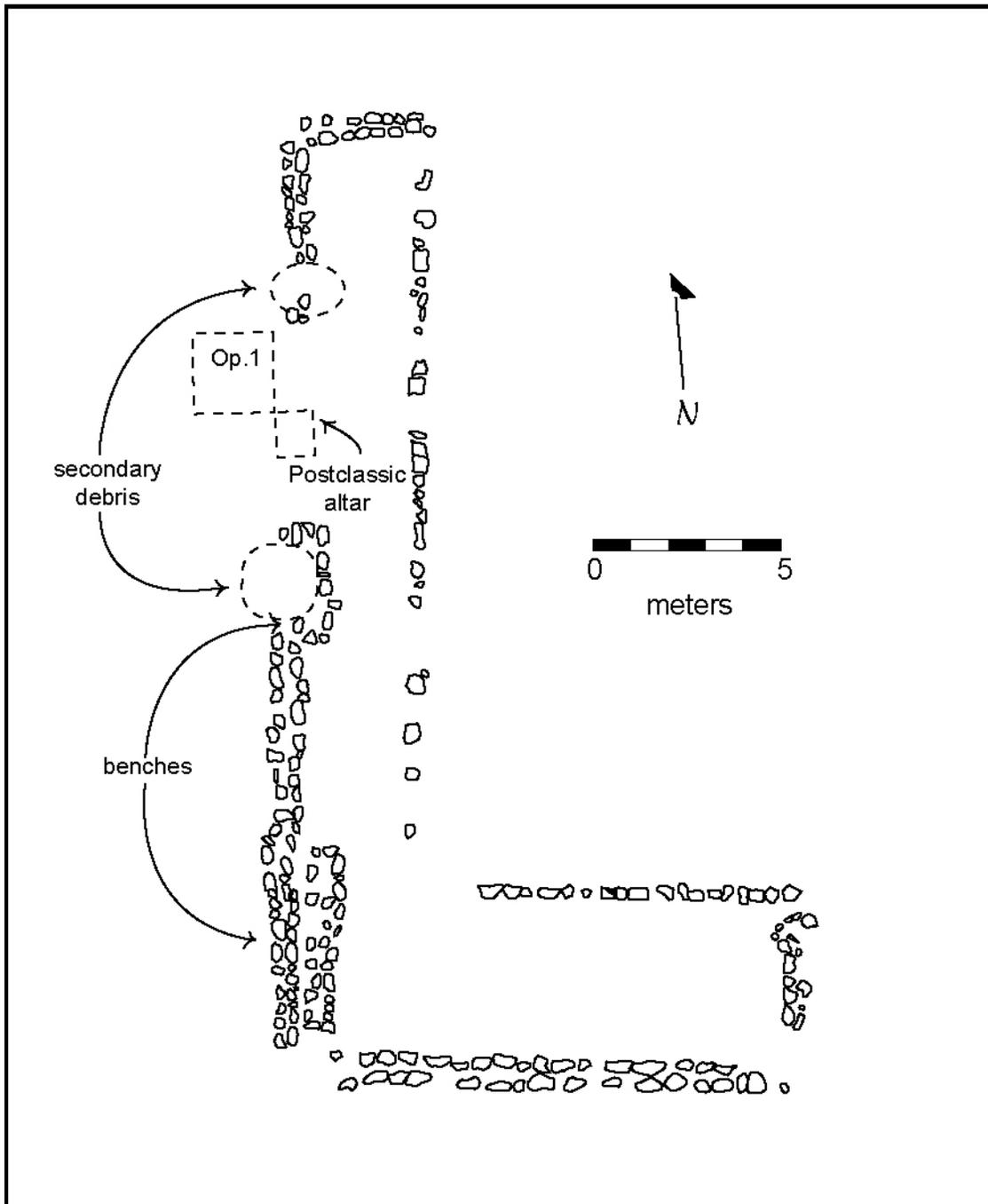


Figure 6. Nohcacab's Structure N1E1-8

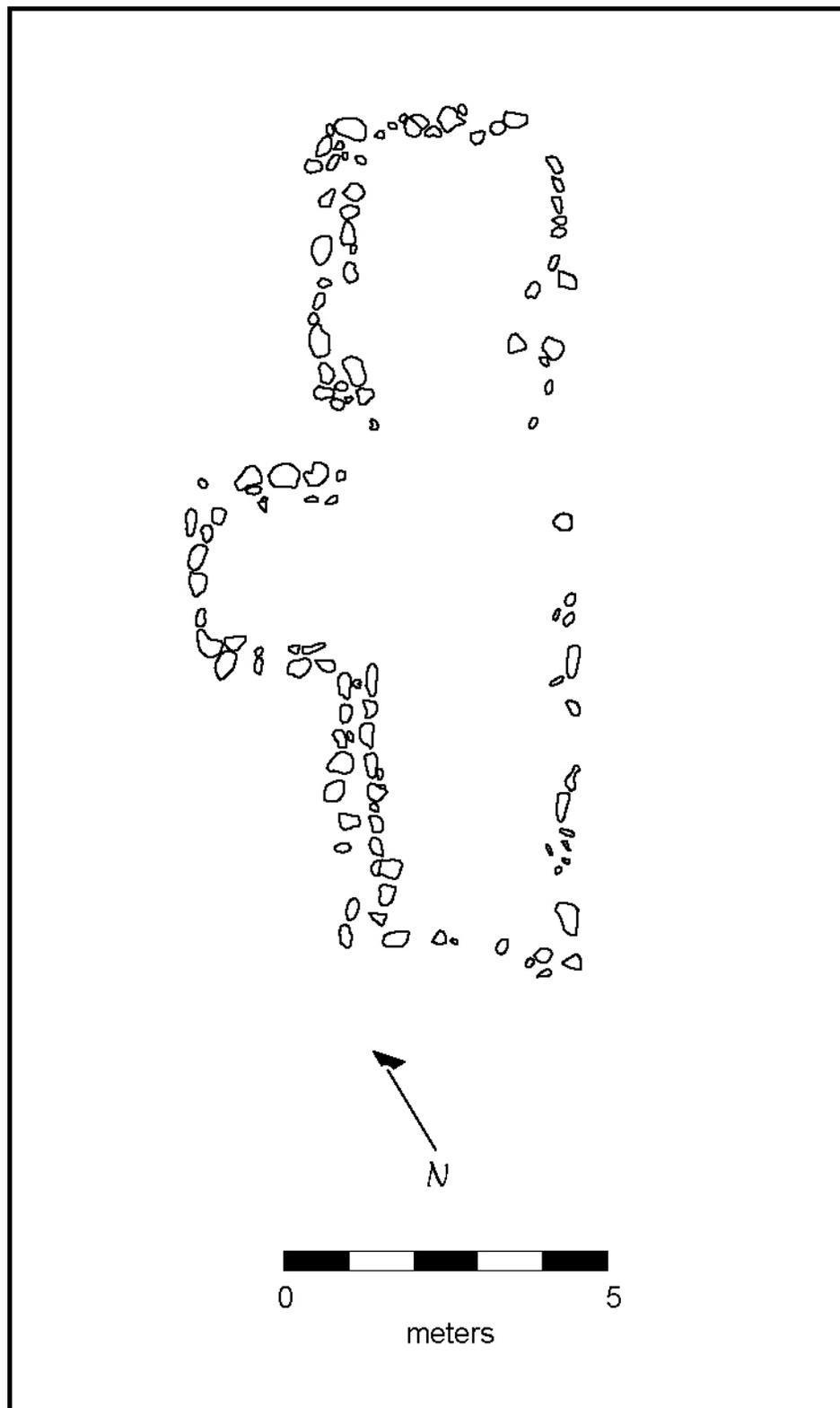


Figure 7. Nohcacab's Structure S3E2-2



Figure 8. Base of Nohcacab's Structure S5E3-1

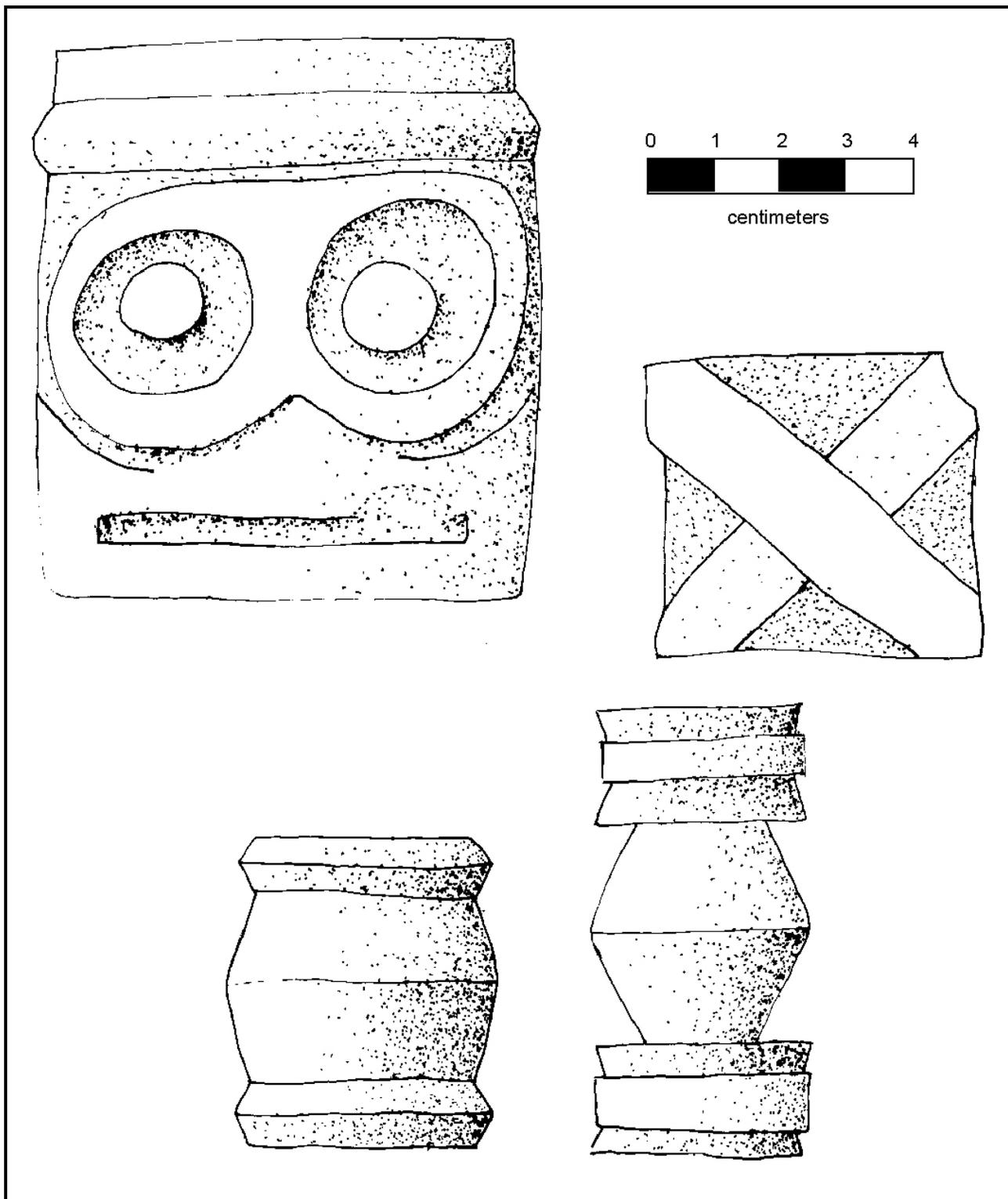


Figure 9. Puuc-style Architectural Elements from Nohcacab

including door jambs, cut stones, *pilas*, and other architectural elements and surface ceramics in the vicinity often included Chen Mul *incensario* fragments. Due to the very limited sample gathered in 2003, it is impossible to say if such activity represents the remains of a resident Postclassic population, or infrequent visits from small passing groups.

Operation 1 at Xquerol

Johan Normark

The aim of Operation 1 at Xquerol was to investigate the chronology of the plaza south of Xquerol's Structure N1E1-1. Since this structure lies near the terminus of a *sacbe* which we believe runs to the site of Ichmul in the state of Yucatan, we also hoped to be able to get an approximate date of this structure and the nearby *sacbe*. However, later survey indicated that the *sacbe* ends many meters north of the structure (Figure 2).

Architectural features, such as high concentrations of stucco visible on surface of Structure N1E1-1, suggested a Late Formative or Early Classic date, as stucco thickness seems to have generally declined through time until the Postclassic. A visit to the larger site of Ichmul to the north also revealed Early Classic ceramics on the surface. However, the stone masonry of Structure N1E1-1 consisted of well-cut and faced veneer stones laid out in clearly defined courses, something suggesting a Terminal Classic date for the most recent phase of construction visible on the surface.

A 2 x 2 m unit was set up at the southern side of Structure N1E1-1. Xquerol's Operation 1, Level 1, Lot 1 consisted of post-occupational debris and natural soil with a concentration of small cobbles and pebbles. Ceramics found in this level were mainly from the Terminal Classic and Postclassic, including Yokat Striated, Muna Slate, Tekit Incised and Chen Mul Modeled.

Twenty-four cm below the surface in the northern section of the unit, the coloration of the soil slightly changed. It contained whiter inclusions, probably the remains of stucco or Floor 1, which we later found. The color of the soil was otherwise dark brown (7.5 YR 3/2). This differentiation led us to create Level 2 and divide it into two lots, Lot 1 in the north and Lot 2 in the south. This level and two lots were completed when we reached the remains of Floor 1. Both lots of Level 2 were dominated by Terminal Classic Cepech sphere ceramics.

Plaza Floor 1 in Level 3 was poorly preserved (Figure 10). The plastered surface was no longer detectable, but the floor fill consisted of *chich* stones, first found in the center of the unit. The floor in the northern section of the unit was better preserved, probably due to it being covered by collapsed construction material from Structure N1E1-1. Level 3, Lot 1 consisted of the floor surface and fill and had some grey soil (10YR 3/3) in the northeast corner. Most of the ceramics are Late Formative but they were probably the remains of a Late Formative midden used for construction fill. Judging from the latest ceramics, the floor was of Terminal Classic date.

Below the subfloor fill of Floor 1, at the bottom of Level 3, we found a well-plastered floor. As Floor 2 was in much better condition than Floor 1, it provided an opportunity to have a sealed sub-floor ceramic lot. However, only the center of the floor remained undisturbed by roots or other post-abandonment events. We thus separated Level 4 into two lots. The less well-preserved Lot 2 was in the southeast corner and excavated first. There, we soon found a boulder, making it impossible to continue that lot. While excavating Level 4, Lot 1, we found indications that Floor 2 had been burned, most likely by an *incensario*, as the floor had not cracked. Below the subfloor fill of marl there was dry core fill that had been partially stuck into *chac luum* (10R 3/6, dark red). Formative ceramics such as Dzudzuquil Cream to Buff and Sierra Red dominated

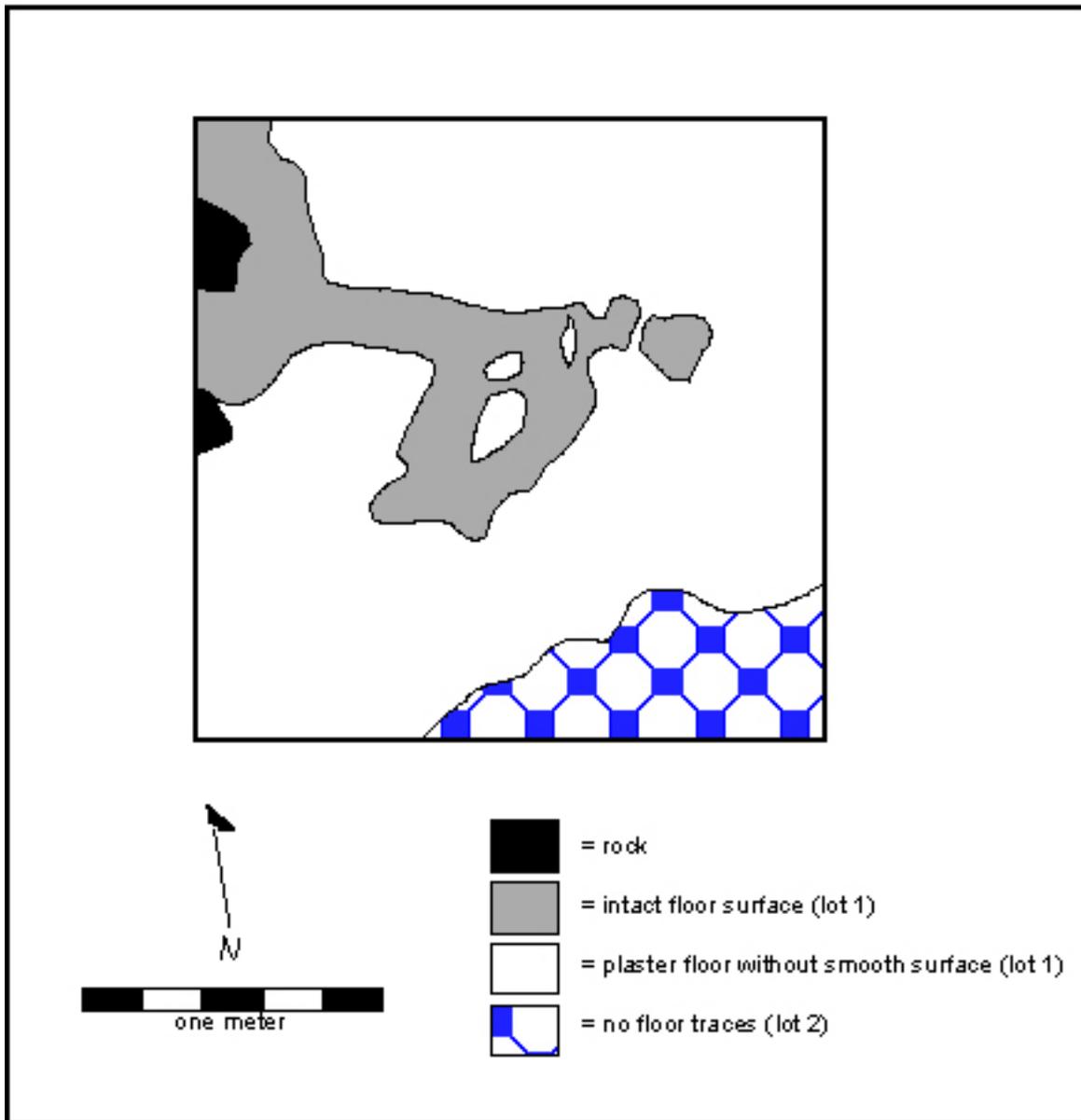


Figure 10. Xquerol's Operation 1, Level 3

Level 4 and its two lots. The inclusion of three Terminal Classic Muna Slate sherds in this level can be explained by post excavation processes.

Under this floor fill we only found *chac luum* and 31 identified ceramics until we encountered bedrock, 177 cm below the northwest corner of the unit. Level 5, Lot 1 was dominated by Sierra Red and some other Late Formative ceramics (Figure 11).

Interpretation

Operation 1 at Xquerol did provide us with some important data. As Floor 1 is from the Late Formative and Floor 2 is from the Terminal Classic there is a long hiatus in the settlement chronology at this particular locus of Xquerol. The focus of settlement may have shifted within the settlement. Judging from ceramics we cannot say if the first phase of Structure N1E1-1 was Late Formative in date. Architectural remains on the surface hint at a Terminal Classic date. However, it should, of course, not be ruled out that there might be earlier construction phases within the structure that goes back to the Late Formative as well.

As it seems that Xquerol was an outlier of Ichmul, and probably part of that site, it also sheds some light on Ichmul's history. It may be hypothesized that during the Late Formative, populations were more evenly distributed throughout the region; for instance, Nohcacab also had a Late Formative population. Ichmul appears to have had a major Early Classic occupation, which Xquerol lacks (judging from Operation 1). Maybe Ichmul was able to grow and absorb much of the region's population during the Early and Late Classic.

During the Terminal Classic, conditions changed and populations were again dispersed, probably for political reasons and/or climatological changes leading to drier periods. The major structures at the nearby site of Nohcacab were constructed during the Terminal Classic, at roughly the same time when Structure N1E1-1 at Xquerol reached its final stage. Part of Nohcacab has a later date with intrusive Chichén Itzá ceramics and architecture. It is possible that the area surrounding Xquerol's Structure N1E1-1 had been abandoned or at least lost its importance by the time Nohcacab received Sotuta sphere ceramics, something lacking at Xquerol which is dominated by Cepech ceramics. It may also be possible that Ichmul and Xquerol fell victims for the expansive Chichén Itzá or the site became less centralized in a north-south bounded trade route, but so far there is no evidence for such a hypothesis.

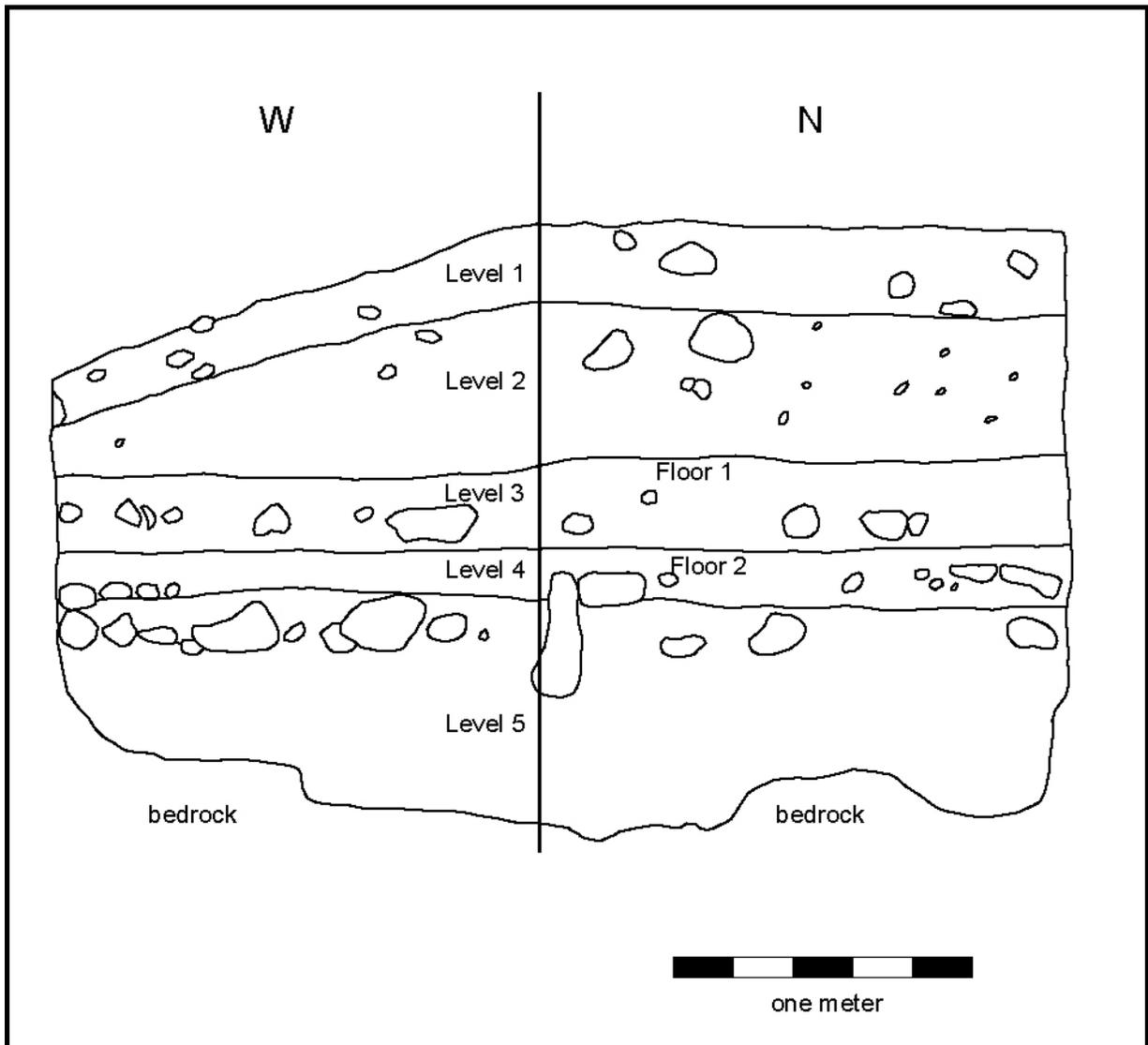


Figure 11. Xquerol's Operation 1, North and West Profiles

The Sacbe Between Xquerol and Ichmul in the Greater Cochuah Regional Context

Johan Normark

Of particular interest is the Xquerol-Ichmul *sacbe* that was mapped in 2003 (Figure 2). It was recorded because it is believed to continue to the larger site of Ichmul, which lies in the state of Yucatan. Since the site of Xquerol is close to the Quintana Roo-Yucatan border, and our permit only included work in Quintana Roo, it was not possible to map its entire length this season. The *sacbe* was first described in the mid-1950s (Stromsvik *et al.* 1955), when there was only a trail between this site and the larger settlement of Ichmul, which lies about four km to the north. The modern winding dirt road, which was improved in 2003, crosses the *sacbe* at several points.

Stromsvik, Pollock, and Berlin (1955:171) were traveling southward from Ichmul in 1954 and they did not note the *sacbe* until they were halfway to Xquerol. For this reason we do not know where the *sacbe* ends or begins in Ichmul. A brief visit to Ichmul in 2003 by Project members did not clarify the issue, as the area that might be the terminus is currently covered by dense vegetation.

The *sacbe* is 10 to 12 m wide and is up to 2 m high. The report by Stromsvik, Pollock, and Berlin does not indicate whether the differences in height and width correlate with changes in topography, to maintain a constant grade or for any other reason. They reported that the sidewalls have well-shaped, but non-dressed, stones that had been set vertically, which may indicate a Late Classic construction. Today, parts of the *sacbe* are destroyed by the construction of the modern dirt road and other recent features, either totally cutting through it, or quarrying it for road fill or for nearby *albarradas*.

Ichmul has substantial colonial architecture, as it is dominated by two churches. However, there are several large Precolumbian buildings as well. Stromsvik and Pollock reported three pyramids that were at least eight m tall. South of the modern plaza lie two enclosed quadrangles on top of an impressive acropolis. Passage vaults were also investigated by the explorers. Terraces and smaller mounds were seen in different directions from this main central area. A very large *sascabera* lies near the plaza as well. They dated the architecture and a small sample of pottery to the Late Classic period (Stromsvik *et al.* 1955:170). On an informal trip to Ichmul, the CRAS Project also observed numerous Early Classic ceramics scattered on the surface.

Most of the major architecture at Ichmul has head-high defensive stone walls, which are of post-contact date. The local tradition claims it is from the Caste War but Stromsvik and others (1955:170) believe they are earlier, since the largest church, which was left unfinished, dates from the 18th century and they therefore think that the site was abandoned before the Caste War, making the fortifications older as well. However, there are other examples where earlier abandoned sites were used as fortifications during the Caste War with little surrounding settlement (Shaw personal communication 2003).

Possible Meanings of the Sacbe

Sacbe studies have mainly emphasized symbolic aspects of roadways (Folan 1991; Keller 1994) or their relation to the socio-political and economical organization

(Chase and Chase 2001; Chase and Chase 1996; Folan *et al.* 2001). As archaeologists deal with mute material culture, it may shed some light to know how and in which contexts the word “road” is used in contemporary discourse throughout the Maya area before we analyze the material manifestation.

Among modern Yucatec Maya at Oxkutzkab there is a vertical symbolism in connection to roads (Hanks 1990). A person walking along a road or path is said to be *yoo' b'eh*, “over road”. This is the opposite of *yáanal k'aás*, “under forest” (Hanks 1990:311). To walk on a road is to walk ‘over’ and ‘in front of’ it. To be off the path is to be *páacil*, ‘behind it’ (Hanks 1990:337). If a road reaches a landmark it is said to “rise” to it (Hanks 1990:311). Interesting here is the association between the vertical direction (up and down) and *sacbes*. At Yo'okop and many other sites, some *sacbeob* lie at a lower elevation than the monumental architecture. To get to the temples, one had to rise up the ramp or stairway to get there. At Xquerol, the final stretch of the *sacbe* is on a slightly higher elevation than just across the modern state boundary.

The word for road is used in many other contexts. To greet someone in Yucatec, the expression *b'is ab'éel* is used. It literally means “how is your road?”. When the Yucatecans describe their goals or occupations they call it “their road”. An individual's road is where he or she has been and is heading. Being “on the right road,” is when a person is progressing toward his or her goal (Hanks 1990).

B'eh is also used as a root for “day” in some contemporary Yucatecan expressions. *B'eh-hé'ela e ~ b'eh- lá e*, means “today, nowadays” (lit., “the road right here”) and *ka a-b'eh*, “the day after tomorrow” (literally “two roads”) (Hanks 1990:312). The day and the destiny of an individual is likened to a road where the personal possibilities can be either ‘open’ or ‘cut off’ (Hanks 1990:337). Interestingly, the word road is used in similar contexts in Classic Maya inscriptions, such as the death phrase *och b'ih*, “he entered the road”, to the underworld, the ultimate destiny of earthly existence (Montgomery 2003). Roads leading to ancestral temples and shrines may be these roads in a physical sense. Structure N1E1-1 at Xquerol may have been a burial mound.

As Bolles and Folan (2001) and Keller (2001) point out, there were many different names of roads in the Maya area when the Spaniards came. It is only during the last century or so that the word *sacbe* has come to stand for all elevated Precolumbian roads. Ancient and native road terminology may give some insights to the use and function of roads.

Sacbe is usually translated as “white road” but there are many other terms of roads. It has been thought that the word is of Yucatec origin, but recent decipherments by David Stuart shows that the *sacbe* between Cobá and Yaxuná was called SAK-bi-hi, or *sakb'ih* in a hieroglyphic inscription found during the Carnegie period (Stephen Houston personal communication 2003). In the Dresden Codex (65b) the word “on the road” is spelled Ta – b'ih (Stephen Houston personal communication 2002). These two examples show a Classic Mayan origin of the word (Houston *et al.* 2000). However, the translation is the same, “white road”. Since “*sacbe*” is the word used in this project, I will continue to use it here.

There are plenty of different hypotheses about what these *sacbeob* were used for and whereas they had symbolic connotations as well. Most of these explanations tend to be functionalistic and reductionist. A traditional Mayanist interpretation of the

sacbe would be to see it reflecting social organization, political dominance, ancestor veneration (or other cosmological interpretations), or trade routes. The data at Xquerol are yet too scarce to make any conclusions on these possibilities, but some hypotheses can be launched.

The Ceremonial/Cosmological/Ideological Explanations

The *sacbeob* and their associated architecture may have been maps or models of cosmos. They may have been used to delimit sacral space or define the extent of the sacral domain. In modern rituals, cardinal locations are joined by a perimeter which makes it possible to distinguish what is inside or outside (Hanks 1990:302). These locations are usually defined by the movement of the sun. In Yucatecan cosmology, the sun is male, high and in the east. The moon is female, low and in the west (Hanks 1990:305). Some *sacbeob* and their associated architecture may have been oriented to align with astronomical bodies. The *sacbeob* at Cobá may have been aligned to different bright stars, summer solstice sunrise and winter solstice sunset (Folan 1991:226-227).

Directionality of roads seems to be important in the cosmological plan (although not all settlement followed such schemas in reality). One of the hieroglyphs for road or *b'ih* indicates this. This is the quincunx pattern (the other one being a foot print). It looks like number 5 on a dice and reflects the four horizontal corners and the vertical center. So important was this symbol that it often is found as earflares on Late Formative and Classic period rulers (Stephen Houston personal communication 2003). Sometimes the sign shows up in the forehead of a snake (Montgomery 2003), an animal clearly resembling the road in form. In Kiché myths, the sun was carried by a two headed serpent (Fox 1991:221). As the quincunx sometimes are associated with celestial roads, it should not come as a surprise that we find it in glyphs that relate to time. The pattern can sometimes be found on the head forms of the K'in, Winal and Tun glyphs (Coe and van Stone 2001). Since the K'in is the same as the sun, it is thus possible that the quincunx associates with the sun's daily path or the ecliptic.

No known *sacbe* in the Cochuah region has a particular east-west direction, apart from the short and probably unfinished *Sacbe 4* at Yo'okop. According to Freidel, Schele, and Parker (1993), the Milky Way is more associated with north-south and zenith-nadir than with east-west forming the ecliptic. The Milky Way was the axis mundi or the world tree (*Wakah Chan*), which united different levels of the cosmos. The Milky Way is also called *saqi b'e* ("white road") among the modern Kiché (Tedlock 1992a:29). If *sacbeob* were the earthly manifestations of the ecliptic, the World Tree and/or the Milky Way, they served a function as cosmograms of the Maya cosmos.

The Milky Way was also the place to which the soul came after death and is thus related to ancestor veneration. The black part of the Milky Way is also called *xib'alb'a b'e* (road to the underworld) by contemporary Kiché (Freidel *et al.* 1993:231-233). At the southern end of the Milky Way lay the entrance to Xibalba, *Ek'-Way* (Freidel *et al.* 1993:222). This area is lined up with the crossroad between the Milky Way and the Ecliptic. During the rainy season, the Tzotzil call the Milky Way "Be Vo," the road of water. It is associated with rain, clouds, and roads (Vogt 1976).

However, mountain spirits are more important than celestial bodies for the contemporary Kekchi. Celestial objects such as the sun and the moon are more

important for large scale kingdoms when they are integrating people since local shrines and mountains are limited in spatial extension (Wilson 1995:104-105).

Directionality may not have followed preconceived patterns. In the 1930s, the village of Chan Kom was said to be divided into quadrants by four roads leading inward. However, in reality, there were seven paths that entered the village from no particular cardinal direction. The perceived world, village and *milpa* were seen as squares with the four corners located in the cardinal directions and one center point. Wooden crosses were raised at four of the entrances, the corners of the village, and the center consisted of a *cenote* (Redfield and Villa Rojas 1962:114).

In the contemporary Yucatec area, ritual discourse creates a 'road' when the shaman moves from one place to another. The cardinal directions are cited in a specified order, often counter clockwise and east is the opening of the road (Hanks 1990:299). It is possible that Xquerol was part of a similar schema, which probably included less formal roads as well.

Reese-Taylor argues that, in the planning of Cerros in northern Belize, structures and causeways were arranged so that transitions from one place to another was a single performance venue where rituals dramatized the creation story. The procession would have followed a path around the settlement in a counter-clockwise direction (Reese 1996:173-181).

Among modern Kiché, ritual processions and visits to different sacred places occur in a calendric order. It is the lineage heads who usually perform these processions. The visited places are locations where the ancestors "sleeps". These processions are also made to mark the limits of the land the lineage owns (Tedlock 1992b). There is thus a relationship between ancestors and roads in much of the Maya area. Structure N1E1-1 near the end of the *sacbe* at Xquerol may have been an ancestral temple of either the ruling lineage or another important lineage at Ichmul.

The road goes in a north-east direction from Xquerol but seem to turn to a northern direction on the Yucatecan side of the modern border. Lorenzen (2003) has proposed the idea that the rain gods (*Ch'aaks*) reside in the northeast according to the Yucatec cosmological plan. At El Naranjal, in the Yalahau region northeast of the Cochuah region, there is a shrine near a wetland area at the end of a 1-km-long *sacbe*. Lorenzen believes that this was a water shrine. However, this shrine lies to the northeast of the site core. Xquerol is located to the south or southwest of the site core at Ichmul. It should not be ruled out that the *sacbe* between these two sites had a similar function, functioning as a "water road," going from Xquerol to Ichmul and having another function in the opposite direction. This may also be the case at Yo'okop where Group C lies to the north-north-east of the site core (Shaw *et al.* 2000). However, there are no known water sources near this Group or the one in Xquerol.

Sociopolitical Implications

Roads may be used as an indication of whether sites were centralized or decentralized, a common topic in contemporary Mayanist models on the political and social organization. Caracol, Belize and its extended network of roads have been an essential piece in the centralist camp (Chase and Chase 2001; Chase and Chase 1996). It is often argued that roads reflect a centralization of the royal power. It should also be mentioned that that site's road network, as well as the one at Chichén Itzá

(Cobos and Winemiller 2001), may be a result of an expansion period, probably the result of fortunate wars. On the other hand, Ringle (1999) argues that causeways, ballcourts, and impressive temples which began to be constructed in the early Late Formative (or late Middle Formative) were the responses to the first waves of centralization of political power. Causeways and ballcourts would have been used to decentralize factional populations whereas the temples are indications of centralization.

Sites with fewer *sacbeob* such as Xquerol-Ichmul would be in the other spectrum of centralization or decentralization. However, the dichotomy between centralization and decentralization reflects a Mayanist tradition of model building rather than empirical facts. The major drawback is of course that we do not know all ancient roads or trails that were in use.

Although the *sacbe* made it easier to communicate between the two sites, I do not think it functioned as a trade route. Trade routes were most likely narrow trails or wider *brechas*. Trade may have occurred in relation to pilgrimages in the Late Postclassic and contact period (Freidel and Sabloff 1984). One of the roads in use for this practice might have extended from modern Merida to Puerto Morelos, and passing by large sites (Mathews 1998). If this road existed, it most likely was of Early Classic origin.

Kurjack and Andrews (1976) have argued that *sacbeob* were a form of boundary maintenance and the roads may therefore have been a response to political or military threats (Shaw 2001:268). This would only concern longer intersite roads. Wider roads have also been argued as indications of political and/or martial use, like the 99 km long causeway between Cobá and Yaxuná (Freidel *et al.* 1993; Hassig 1991:22). External causeways usually radiate from large sites such as Chichén Itzá, Calakmul, El Mirador, Cobá, and Caracol, which were large cities with a substantial intersite road system that extended to smaller polities. These great cities were centers for large political entities (Trombold 1991:4-6). It is still too early to say if Xquerol was part of Ichmul throughout its history.

Some roads that were maintained by the Aztecs became symbols of the rulers, as it was a privilege for the rulers to travel on these roads (Hirth 1991:212). This may have been the case with some of the *sacbeob* of the Maya Lowlands. Thus a long *sacbe* could have been an obstacle for commoners or others not allowed to travel on the road. Roads could thus work to set up certain limits and *barrios* within a site. There are also other kinds of “roads” which may have reflected a boundary maintenance aspect of social organization. For example, the *sacbeob* at the Yucatecan site of Chunchucmil are joined by *callejuelas* which are wide streets between boundary walls (Dahlin 2000). At least at that site, there was no physical obstacle to enter a causeway from the streets. Along the eastern portion of the short section of the Xquerol *sacbe* that was mapped, we found traces of a long step that may have been used to enter the *sacbe*.

As Xquerol is connected to Ichmul we believe it belonged to the same political order, at least during the Terminal Classic period. It is also possible that Xquerol and Ichmul were originally separate sites and only later was connected by the *sacbe*. As Ichmul is the larger of the two sites it is likely that it also was the dominant one. Whether or not Ichmul was under the political influence of Yo’okop or other sites in the Classic period cannot be concluded now.

The Impact of the *Sacbe(s)*

The above interpretations have not been solely based on the archeological data but also include other data to be able to explain the past agents and society behind our artifacts and architecture. However, the roads themselves had an impact on the society once they had been constructed. Once buildings and *sacbeob* had been constructed by social practice, they directed social practice itself, largely without the intent of the human agents.

For instance, an unintended outcome of the construction of *Sacbe 3* at Yo'okop is that the road blocks off subterranean water drainage as it percolates from the higher elevation in the west to the lower east. This results in higher degree of moisture on the west side of the *sacbe*. Modern *milperos* says it is better to farm on this side than on the drier eastern side (Dave Johnstone personal communication 2003). This was most likely not the intention of the builders and we should therefore not always look at the initial intention of past agents or the "meaning" or function of the *sacbeob*. *Sacbeob* can in this sense be seen as actants (Latour 1999) that were part of a social network (Normark In press).

Another example of the "agency" of a *sacbe* is the possible subterranean passage under *Sacbe 2* at Yo'okop (Lloyd 2002). So far, we cannot say whether the passage was part of an earlier building incorporated into the road and if the passage was sealed off, or if the passage was part of the whole construction project. In any case, a passage or not when the *sacbe* was in use during the Terminal Classic affected people's actions, assuming the possible passage was for human traffic that is. Either they could pass under the road, or not. If they could not do it, then they may have had to walk around the whole *sacbe* and Group C to get to the other side. Roads may thus have served as boundaries as well (Kurjack and Andrews 1976). This may have also been an outcome with the Xquerol-Ichmul *sacbe*. However, the Xquerol-Ichmul *sacbe* has a long step that may indicate that people could cross the road. *Sacbe 2* at Yo'okop has not been cleared to be able to determine if such step(s) existed along its side(s).

A third example of how *sacbeob* affect people's actions is seen along the road between Xquerol and Ichmul in the modern quarrying of stones from the ancient structures for the construction of the modern road or *albarradas*. The mere presence of the road makes people change and adapt their actions in a way that they would not do had the *sacbe* not been there.

The white surface on *sacbeob* was more visible during darkness, so people could have traveled during less moon-lit nights. The *sacbeob* may thus have allowed travel at times when walking on dark trails would have been less opportune. The white surface also acts as reflecting sun light during daytime and may also have contributed to an increase in temperature within a microclimate. Stone *sacbeob* were usually covered by large amounts of white lime or *sascab* (Folan 1991:222). Plaster could not be re-used as masonry could (Abrams 1994:73). It is generally argued that deforestation for fuel, construction and making plaster contributed to erosion in the Maya area (Abrams and Rue 1988). Abrams claims that the deforestation for plaster had very little impact, but if it occurred during a very short timeframe and the climate already was drier, this may have caused severe increases in temperature in a

microclimate (Shaw 2003). Thus, *sacbeob* and other plastered surfaces contributed to climate changes as well.

Shaw (2001:267) asks one of the critical questions: “why are some sites able to dominate, manage, and/or coerce their populations without *sacbeob*, and why do others make such extensive use of these expensive, but effective, links?” I believe that the key to this question is that the roads should be seen as structures representing a serial phenomenon which reflects past practices, which differed at particular locales (Normark In preparation). It has been argued that societies with elaborate and formal road systems are less responsive to change than those without them (Hassig 1991:25). Thus, roads slowly changed the way people behaved as their presence directed and blocked people off. Later constructions tended to follow established material and social patterns rather than cosmological patterns. People living at sites without *sacbeob* did not have the same issues. I therefore believe that there can only be site-specific answers to Shaw’s question.

Operation 1 at Nohcacab

Dave Johnstone

Nohcacab's Operation 1 consisted of a 2 x 2 m test pit located on Structure N1E1-1, the largest residential platform at Nohcacab (Figure 12). The pit was located between a collapsed Terminal Classic veneer masonry residence, over which a Postclassic shrine had been built, and an L-shaped residential foundation brace (Figure 6). Given that the foundation brace blocked access to the masonry residence, it probably post-dated that structure. Since the foundation brace was partially dismantled to accommodate the construction of a masonry altar associated with the Postclassic shrine, the foundation brace preceded the shrine and its altar. This locality thus presented a complicated construction sequence spanning approximately 400 years over the transition from the Terminal Classic to the Postclassic periods.

Level 1, Lot 1 consisted of a matrix of dark brown loam containing angular stones ranging in size from gravel to cobbles and the occasional cut veneer stone. Most of the lithic artifacts recovered during the season came from this level, including an obsidian microblade. These are perhaps due to the nearby altar, which may have been the focus for bloodletting rituals. The associated ceramics, while mixed, suggested a Terminal Classic date for this level. Interestingly, a large sample of Chichén Slate Ware sherds was recovered, suggesting that the residents of Structure N1E1-9 had some kind of relationship with that site.

Following the exposure of a line of stones running east west across the pit (Structure N1E1-1 sub-1), the level was divided into two extra lots, with Level 1, Lot 2 north of the feature, and Level 1, Lot 3 south of it (Figure 13). Lot 3 did not proceed beyond the top of the feature, as a fragmentary burned floor was encountered at a depth of 32-34 cm. Lot 2 continued 15 cm below the top of the feature before encountering a poorly preserved floor that lipped onto the wall face (Figure 14). The wall itself was constructed with roughly quarried stones faced on the north, with many spalls. With the limited nature of the exposure, it is difficult to suggest a function for the feature beyond that of the edge of a platform. The ceramics of Lots 2 and 3 contained construction fill dating to the Terminal Classic, likely associated with the construction of Structure N1W1-1.

Level 2 continued below Floor 1 in the southern portion of the unit, so that N1E1-1 sub-1 would not be disturbed. The level consisted of 80 cm of dry core fill capped by a 7-9 cm layer of *chich* (angular gravel) subfloor. Recovered ceramics indicate a Late Formative construction date for this feature, accounting for most of the height associated with Structure N1E1-1.

Level 3 consisted of *chac luum* (red iron rich soil) that rested over irregular eroded *laja* (bedrock). As a result, the depths ranged between 1 and 25 cm. The associated ceramics were primarily Middle Formative, with some Late Formative admixture.

Nohcacab's Operation 1 revealed that this locality had experienced a substantial construction effort in the Late Formative associated with N1E1-1 sub-1. The lack of subsequent construction until the Terminal Classic period may account for the poor state of preservation of Floor 1. Two construction efforts were associated with the

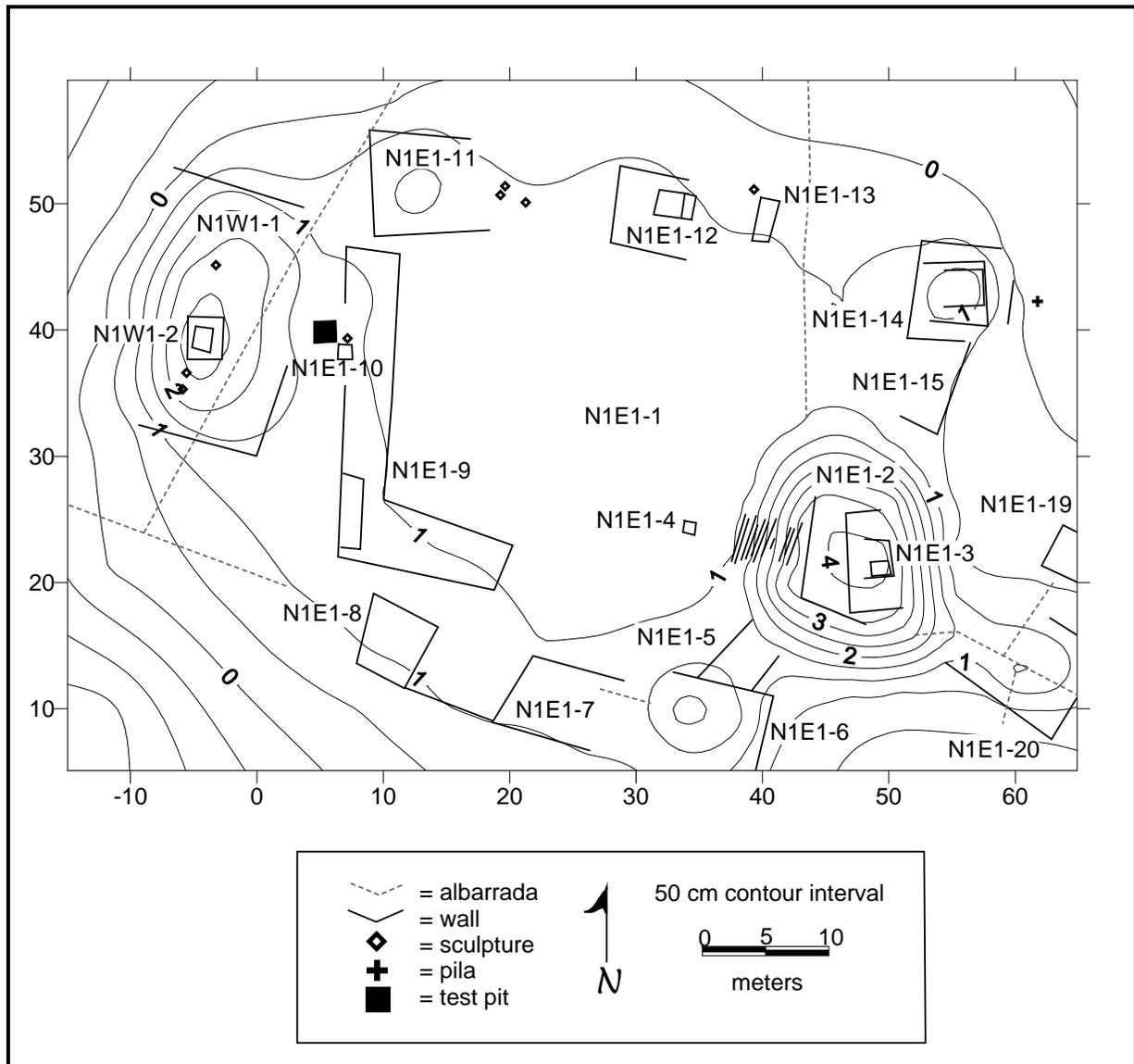


Figure 12. Nohcacab's Central Area

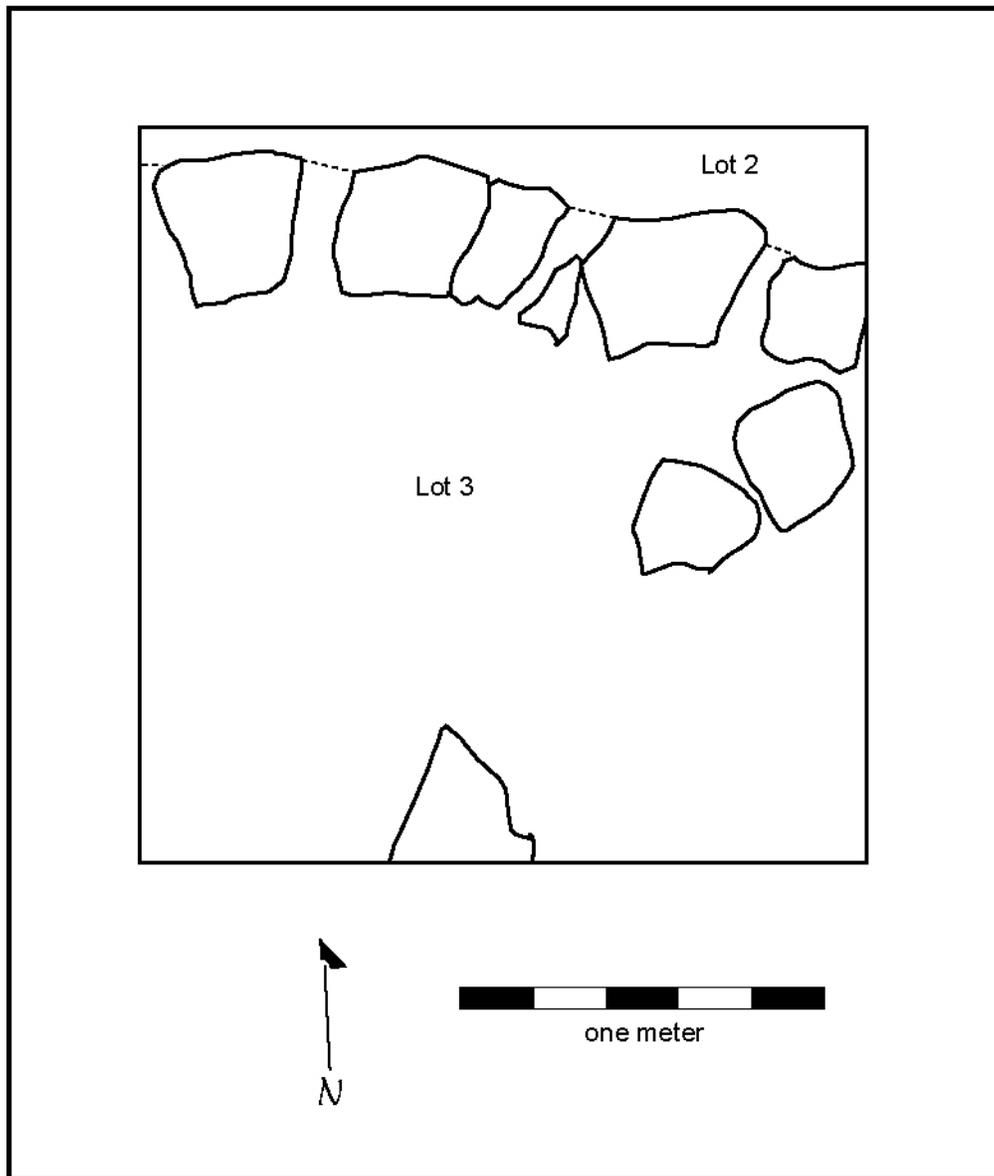


Figure 13. Nohcacab's Operation 1, Level 1, Lots 2 and 3

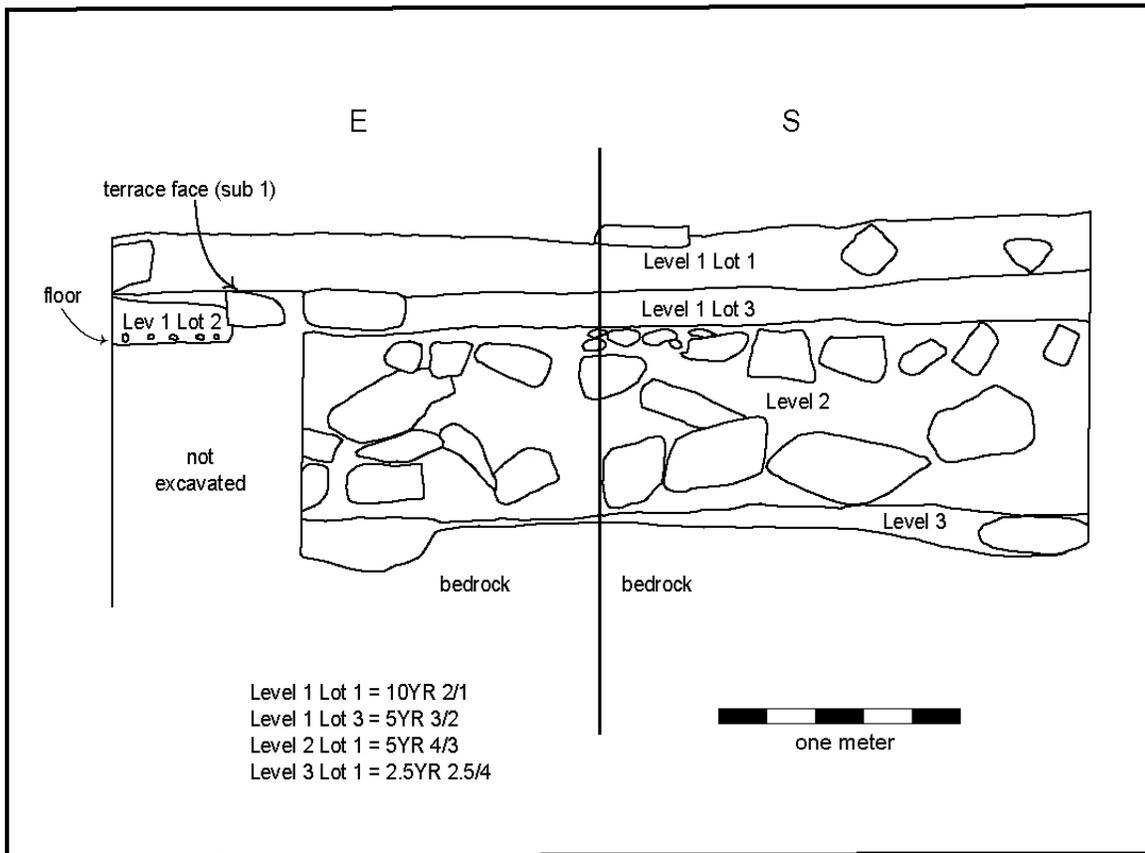


Figure 14. East and South Profiles of Nohcacab's Operation 1

Terminal Classic. The first involved the leveling of Structure N1E1-1 to the height of the top of sub-1. This event likely preceded the construction of Structure N1W1-1. Following the destruction of Structure N1W1-1, the plaza was raised another 20 cm, incorporating some of the veneer stones from Structure N1W1-1 as fill. This newly raised platform surface was the base upon which Structure N1E1-9 was built. Following the abandonment of this structure, a portion of its rear wall was removed to allow for unimpeded access between a Postclassic shrine and its associated masonry altar. While Nohcacab's Operation 1 clarified the temporal relationship of events at this locality, it shed no light on the causal relationships between successive constructions and destructions.

Small Postclassic Shrines at Nohcacab

Johan Normark

The small site of Nohcacab has an unusual high concentration of small Late Postclassic shrines. Fourteen securely defined Postclassic shrines, eleven altars, two possible shrines, and one non-Postclassic shrine were mapped during the 2003 season (Figure 4). Most of the structures were not larger than a few square meters. The shrines were all one-room constructions with one entrance (Figure 15). Building elements from older structures, such as Terminal Classic doorjambs, had frequently been used to construct the shrines. These shrines are found on top of older structures with a small altar in front of, and at a lower elevation than, the old structure. The altars are about 1 x 1 m square, consisting of several smaller flat stones arranged into a quadrangular shape.

The shrines most likely were once palm thatched and resembled residential houses. Depictions of miniature shrines in the codices show us house-like structures for deities to dwell in. The depicted deities may also have been idols such as ceramic effigy censers. In front of some structures, the early Spaniards saw deer antlers and hunters made sacrifices at such places. Petitions to deities who controlled game and fish may thus have been one reason for using the structures (Lorenzen 2003:26-27).

Lorenzen (2003:XIII) “posit[s] that Late Postclassic miniature shrines were the focus of perpetual subsistence rites intimately tied to ancestral deity veneration and the ritual incorporation of sacred caves, perceived as the paramount source of fertility, spiritual power and creation.” These structures seems to have focused on increasing rain, agriculture and game.

The Central Shrines at Nohcacab

In an area of roughly 160 x 160 m, or 2.6 hectares, we found eleven of the site’s thirteen known Postclassic shrines and eight of the eleven altars. As we mainly mapped the southern, eastern and western periphery from the core we did not get a sufficient sample from the northern area, which may have some shrines as well. However, the concentration within this small area is clear.

The western (Structure N1E1-16) and northern (Structure N1E1-17) mounds of a “triadic” group north of the largest mound (Structure N1E1-2) have one shrine each. The western shrine is oriented to the east where the altar (N1E1-21) is located. The northern shrine has its altar (N1E1-22) to the south, close to the other altar. The eastern mound of this triadic group (Structure N1E1-18) may have had a shrine as well, since there is a doorjamb on top of this less well-preserved building, but no superstructure was located and no associated altar was found (unless it used one of the other altars within these triadic structures).

South of the triadic group lies another mound, Structure N1E1-14 with a shrine. The structure appears to face to the west but there is no associated altar in that direction.

The central Terminal Classic structures at the core of Nohcacab had shrines with associated altars. The shrine (Structure N1W1-2) on Structure N1W1-1 had an altar (Structure N1E1-10) to the east. We observed, but did not collect, a Chen Mul Modeled

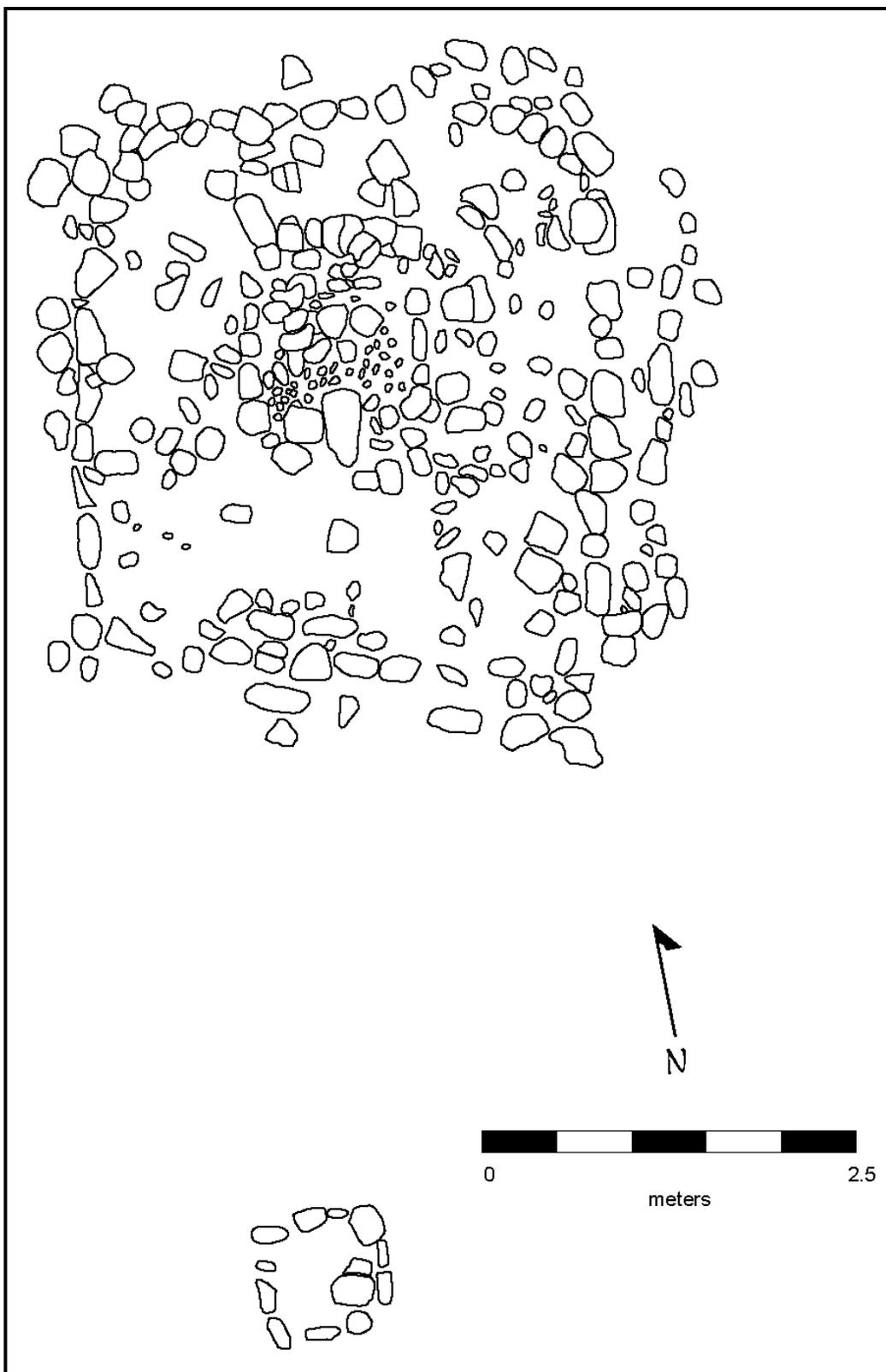


Figure 15. Nohcacab's Structures N1E2-2 and N1E2-3

hand from an effigy censer near the shrine. For the construction of the small altar, parts of the back wall of a L-shaped Chichén Itzá structure (Structure N1E1-8) had been removed (Figure 6).

Structure N1E1-2, the tallest structure at Nohcacab, also had a shrine (Structure N1E1-3) on its top with an altar (Structure N1E1-4) to the west. The shrines N1E1-3 and N1W1-2 face each other, but not in a straight line. That is probably no coincidence, as the older Terminal Classic structures that they stand on also faced each other.

On top of Structures S1E1-8 and S1E1-7 that extend south from Structure N1E1-2 we located two more shrines. The northernmost of these had one altar (Structure S1E1-14) to the east and the southern shrine had an altar (Structure S1E1-13) slightly to the northeast.

Southeast of N1E1-2 lies an isolated shrine, Structure N1E1-23, with no altar. Another fairly isolated shrine is the northerly oriented Structure S1E1-14 on top of Structure S1E1-2. It also had no altar.

Some of the central shrines are also located near *bajaradas*, lower lying areas that probably were used for agriculture, as they contained more moisture and deeper soils, similar to dry sinkholes (*rejolladas*) in other parts of Yucatan (Kepecs and Boucher 1996). However, there are no sinkholes (*rejolladas* or *cenotes*) at Nohcacab. One of the two possible, but not yet certain, shrines is located on top of Structure N1E2-7, roughly 25 m from the *bajarada* to the north of the central area.

The shrine (Structure N1E2-14) on top of the pyramidal Structure N1E2-1, and its associated altar (Structure N1E2-15) to the west, and shrine N1E2-2 east of this pyramidal structure, and its associated altar (Structure N1E2-3) to the south, are near the eastern *bajarada*. This shrine-altar complex was mapped by Alberto Flores and me (Figure 15).

The feature and possible altarless shrine on top of the Terminal Classic Structure S1E1-1 is one of the most interesting ones at Nohcacab as it may relate to water. Below the southern side of the platform is a depression that might have been a *chultun*. Between the possible shrine and the depression is a sloping area with well-cut and flat stones, which seems to have been constructed to direct water into the depression. A surface collection of ceramics was gathered in a 2 x 2 m square overlying the possible *chultun*. There were five Terminal Classic Muna Slate sherds with incised decoration. Lorenzen (2003) believes that some of the Postclassic buildings at El Naranjal were water shrines. This possible shrine at Nohcacab may very well have had the same function, although the *chultun* may be of an older date.

The Peripheral Shrines at Nohcacab

Some of the peripheral shrines lie near *bajaradas*. Roughly 25 m south of the eastern *bajarada* is the largest Postclassic shrine (Structure S1E3-3) yet found at Nohcacab. It rests on top of a small pyramid, Structure S1E3-1, and has an altar (Structure S1E3-4) to the north, very close to the *bajarada*. The shrine also lies 15 m east of a *sascabera* with a modern wall. One of the doorjambs reused in the wall of this shrine had also been used as a *pila* in the interim before it became part of the wall.

Another shrine lies 150 m further to the south, on top of Structure S3E3-4. It has no known altar and does not appear to be of Postclassic date.

In the southern and southwestern periphery we found two shrines. Furthest to the west, on top of Structure S2W2-1, is a single altar (Structure S2W2-4) with no associated shrine. However it lies near the southwestern *bajarada*.

East of this is Structure S2W1-3, perhaps of Postclassic date and with one shrine (Structure S2W1-4) on its top. It faces to the south but there is no altar there. Slightly to the southeast of Structure S2W1-4 are two features that may be altars; one of them is located within the foundation brace of Structure S2W1-8. North of this structure lies a *sascabera*.

Southeast of Structure S2W1-3 is Structure S3E1-2, which has one western oriented shrine with no known altar. The last two shrines are both northwest and southeast of a *sascabera* that has been modified into a water catchment area (Figure 5). They are located 30 and 60 m from this feature.

Some of the shrines in both the central and the peripheral parts of the site were thus located near *bajaradas* or other areas more useful for agriculture or water management. However, the largest *bajarada*, which flanks the western part of the site, lacks any known shrines. Since we did not map any large portion outside the *bajaradas* we cannot know if these areas also contained shrines. However, an informal reconnaissance in the four cardinal directions yielded an immediate cessation of obvious features and surface ceramics in each direction, so it is unlikely that shrine construction continued beyond this zone. Most of the shrines are located on the largest structures at the site and since the volume of constructed buildings decreases outside the central area we do not expect to find any unless there is a nearby cave or other prominent feature.

Possible Functions

The shrines may have been constructed for the establishment of land rights by newly settled people by referring back to the previous occupants who became regarded as ancestors (Lorenzen 2003). This was not only a Late Postclassic phenomenon. Resettlement strategies are known from the Late Classic Nakbé (Hansen 1998), and closer to Nohcacab we find colonial or Caste War fortifications on top of Classic period architecture at Ichmul (Stromsvik *et al.* 1955), and in Sacalaca as well. The recycling of earlier monuments and buildings is known from many Lowland centers. Hammond and Bobo (1994) argue that such activity at La Milpa in Belize had to do with pilgrimages.

Household shrines were used to venerate ancestral remains as well. Human skulls and figurines filled with ashes from cremation were kept in the Postclassic oratories (Tozzer 1941:131). Contemporary Yucatec Maya place bones of their relatives in shrines similar to the domestic house (Lorenzen 2003:47).

However, no clearly secured Late Postclassic residential area was found at Nohcacab (the exception might be Structure S2W1-3). The shrines at Nohcacab may thus not have been household shrines in all cases. Miniature shrines were sometimes used in public contexts as well (Lorenzen 2003:29).

Contemporary Kiché pile smashed vessels next to oratories they call “mountain-place” and “water-place” (Tedlock 1992b). Smashed ceramic incense burners in effigy form are often found around the shrine doorway (Lorenzen 2003:2). Lorenzen believes that it is deified ancestors depicted on the Chen Mul Modeled ceramic effigy censers rather than only deities (Lorenzen 2003:47). A hand of a Chen Mul Modeled censer

was found, but not collected, near the shrine on top of Structure N1E1-1 at Nohcacab. Evidence from El Naranjal (Lorenzen 2003) and Muyil (Witschey 1993) indicate that effigy censers were used in ceremonial processions along and between *sacbeob*, sites, shrines, and water features (Lorenzen 2003:55). Shrines have been found on roads at Yo'okop (Shaw *et al.* 2000).

Ch'aak-pahatun-Ch'aak is a raingod that controls the northeastern corner of the eastern sky (Redfield 1941:117). It is possible that some of the shrines at Nohcacab which are aligned in a north or north-east direction may have been water shrines. There are only three shrines at Nohcacab that faces to the north. Of these, Structure S1E3-2 is of special interest since it is very close to a *bajarada*.

Speleothems were used in the Late Postclassic shrines at El Naranjal. These were broken off and brought there from nearby caves, further suggesting an association with water. Some of them were found in association with Chen Mul *incensarios*. One of them had also been burned (Lorenzen 2003:41).

No cave has so far been found near the Postclassic shrines in Nohcacab. However, the lack of speleothems in the nearest known cave is in Xtojil, 5 km to the east, may indicate ritual breakage and use (see "Caves and Settlement in the *Ejido* of Sacalaca" in this volume). This usually concerns the Postclassic period. No Postclassic features were found during the short visit to Xtojil and it is not unlikely that speleothems may have been brought all the way to Nohcacab during pilgrimages. However, within the investigated area of 2003 there is only one known Postclassic shrine near a cave and that is in Chakal Ja'as (Figure 1).

The connection between shrines and their possible functions as ancestral shrines, and for the petition for rain and good agricultural cycles seem to be a good one, but needs to be better investigated in the future.

Ejido of Sacalaca

Justine M. Shaw

The *ejido* of Sacalaca is located to the northwest of the *ejido* of Saban (which contains the site of Yo'okop) and to the south of the *ejido* of Xquerol (Figure 1). As with the site of Xquerol, the modern pueblo of Sacalaca has engulfed many of the archaeological remains, leaving only scattered mounds that have not been consumed as sources of material for historic and modern constructions.

The pueblo of Sacalaca contains a *cenote* on its western edge (Figure 16). As the farthest south in the region's *cenote* belt, the *cenote* was likely a critical water source to ancient inhabitants of the area. However, contemporary modifications to the feature (a cement stairway and landing for swimming) and the adjacent area (a *palapa*, ringing *albarrada*, and adjacent houses) have destroyed any obvious traces of such use. The northern portion of the *cenote* is relatively shallow and might be investigated relatively easily by divers, while the bottom slopes sharply downward to the south. Consultants report another *cenote* several kilometers from the pueblo; this *cenote* reportedly only has a single small entrance hole in the center of its roof. No persons are known to have entered the feature recently in spite of bountiful tales of Spanish gold said to have been deposited there.

Site of Sacalaca

On the south side of town, along the road coming north from the Tihosuco-Dziuché road, is a 6-m-high mound (Structure S10E2-2) on a platform divided between *solares* by *albarradas* (Figure 17). The structure has suffered extensive damage on its southeastern and western slopes, where fill has been removed to build an adjacent modern structure, as well as other *albarradas*. A small segment of upper terrace on the south side is the only remaining *in situ* architecture. A 2 x 2 m test pit, Sacalaca's Operation 2, was excavated to the north of the mound, revealing only a Terminal Classic occupation over bedrock (see "Operation 2 at Sacalaca" this volume). The mound rests upon a platform that extends to the north, under another modern house and its front (eastern) *albarrada*. This summer, the owners of this northern *solar* cut away the southern portion of the platform (between their front *albarrada* and the modern road) to make a flat space for parking and to obtain material to fill a depression. Almost exclusively Terminal Classic ceramics were collected from this surface cut (Table 3).

Another significant component of the site lies under and around the modern Telmex *torre*. The base of the tower itself rests on the southern portion of the Structure S5E5-1 acropolis, while the tower's support cables are anchored throughout the area's constructions (Figure 18). Structure S5E5-2 is currently a distinct public area that had been overgrown and ignored prior to our mapping efforts, while the remainder of the modern block is divided between *solares* and sprinkled with houses, *albarradas*, and outbuildings. A new Telmex long distance building was being constructed on the acropolis as our mapping was conducted. A local individual had also recently dug an approximately 1.5 x 1.5m pit into the southwestern top of the acropolis to use as an outhouse. As the outhouse had not yet been built or used for its intended

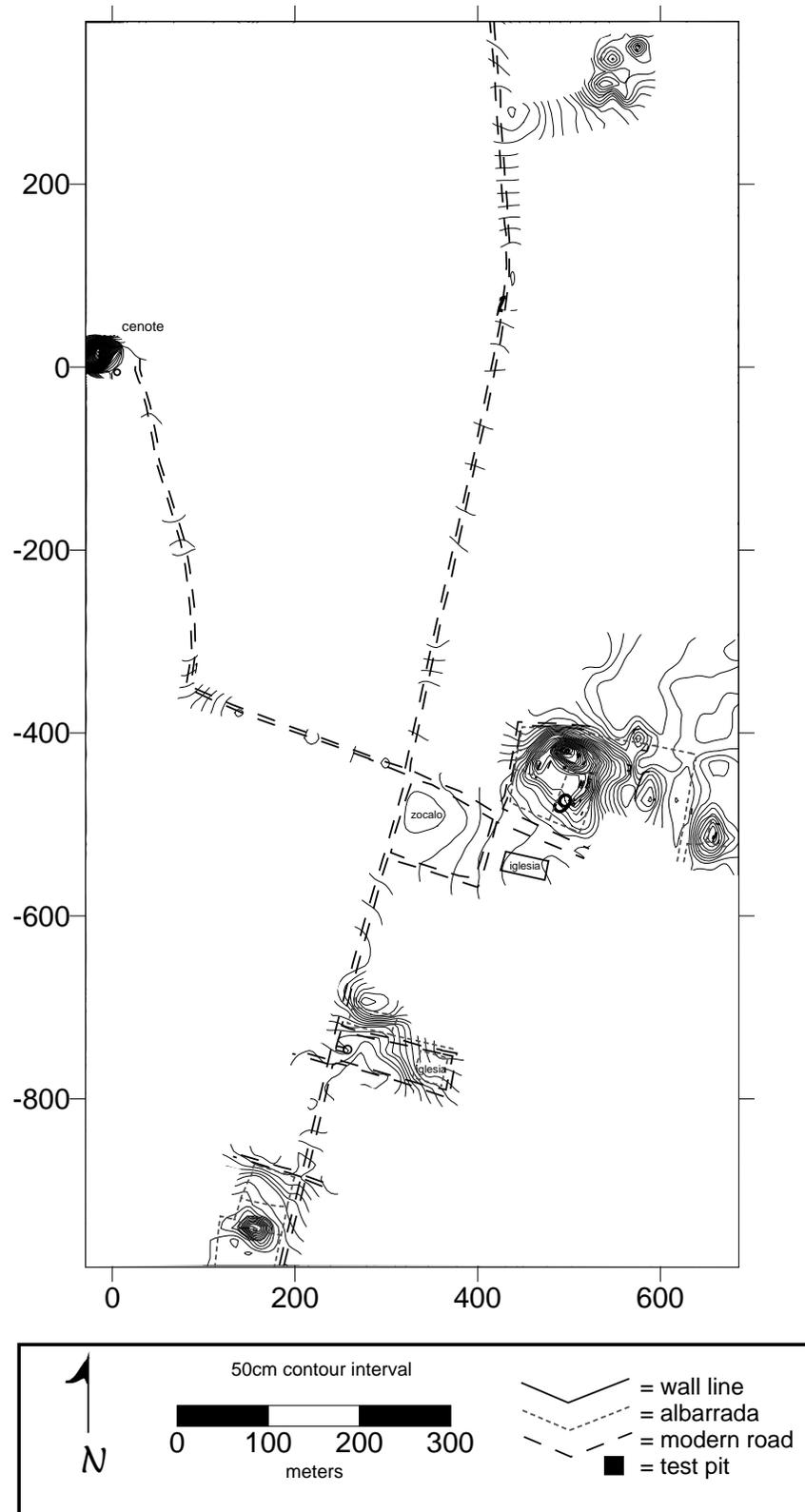


Figure 16. Plan Map of Sacalaca

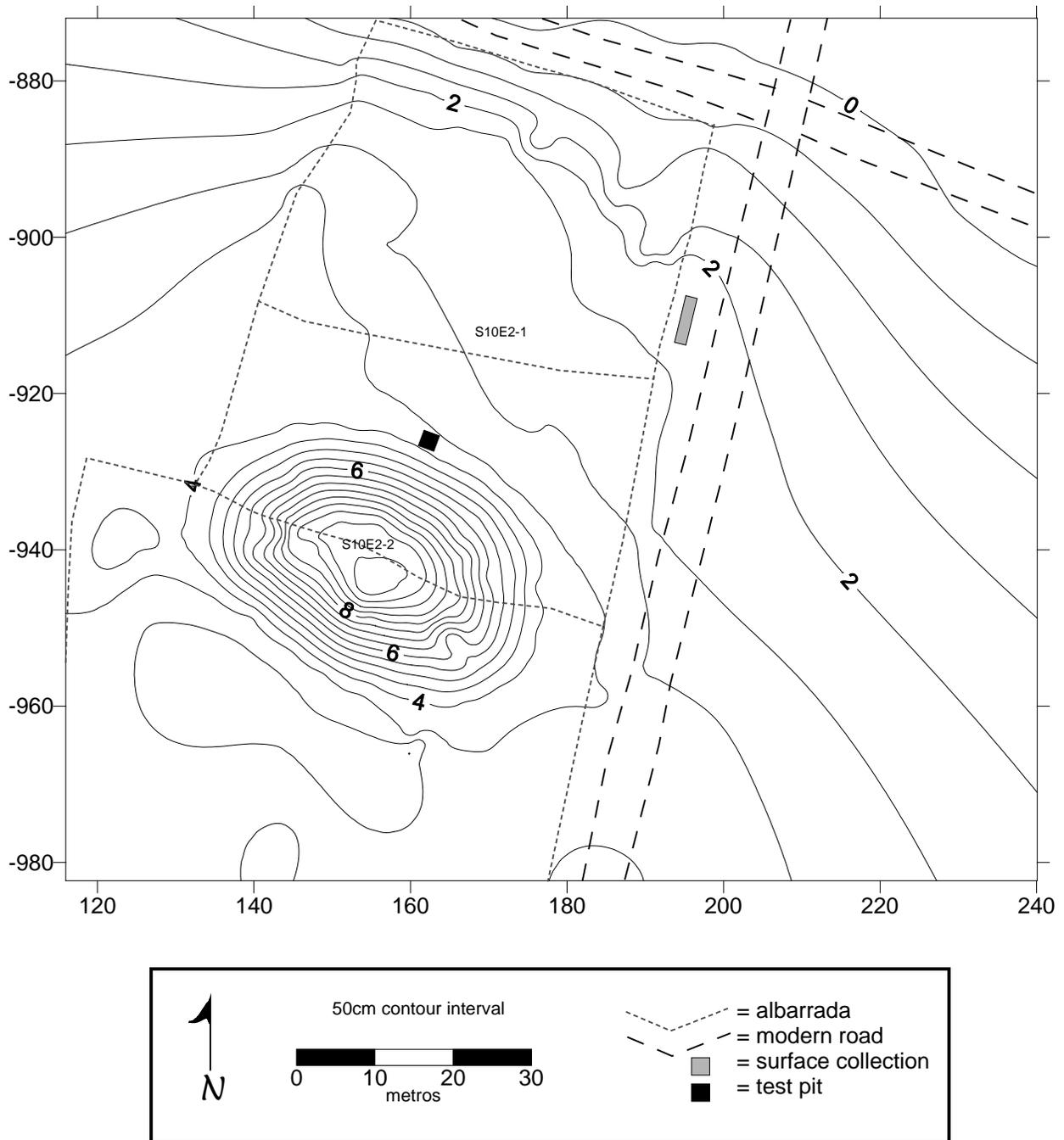


Figure 17. Sacalaca's Structure S10E2-1 Platform

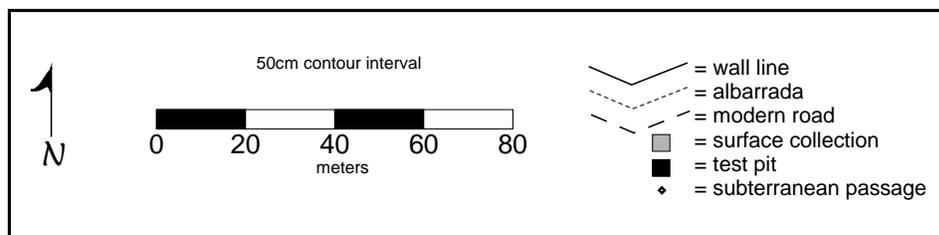
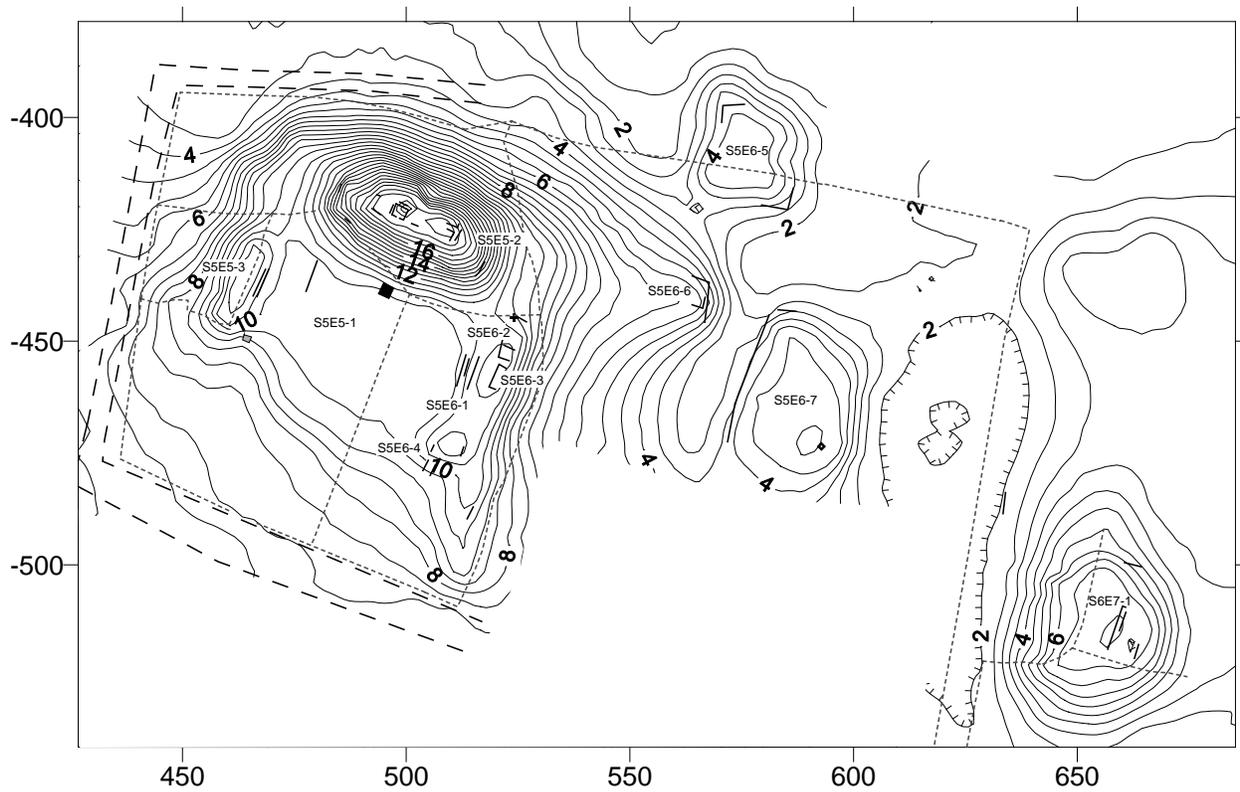


Figure 18. Sacalaca's "Torre" Area

purpose, it was possible to obtain surface collections from the backdirt here (Figures 19a and 19b). The collections could be further sorted into their original levels based upon the distinct sediment colors adhering to the sherds from each deposit. Like the materials from Sacalaca's nearby Operation 1, the deposits included a substantial Late Formative construction effort followed by a Terminal Classic occupation (Table 3).

The original acropolis contained a single large rear mound, Structure S5E5-2, with two flanking platforms, Structure S5E5-3 to the west and Structure S5E6-1 to the east. The final construction phase of Structure S5E5-2 included an approximately nine-room palace (Figures 20a, 20b, 20c, and 21) sitting atop an 8-m platform with rounded corners. The western platform, Structure S5E5-3 still displays signs of a stairway facing inward (east), although most of its summit surface architecture has been removed for use in *albarradas* and its northwestern edge was destroyed to anchor one of the tower's cables. The eastern platform has also been extensively utilized as a source for building materials (*albarradas* and hog pens). However, traces of at least three structures remain with concentrations of rocks suggesting other buildings once covered the area. The northernmost currently visible foundation brace, Structure S5E6-2, has Terminal Classic double wall lines (core-veneer architecture). Stair fragments remain on the western flank of the main platform. Sacalaca's Operation 1 (see "Operation 1 at Sacalaca" this volume) was conducted by Johan Normark and Alberto Flores in order to better understand the plaza construction sequences in this central portion of the site.

Other constructions rest upon modified natural rises throughout the surrounding area in the modern pueblo. To the immediate southwest of the Structure S5E5-1 acropolis is the modern pueblo square (*zocalo*). Due to dense modern occupation in this zone, and the limited time available for mapping, it was decided to map eastward from the acropolis, where open space in *solares* still provided access to ancient features. One such building, Structure S5E6-7, east of the acropolis, contains a vaulted passage on its eastern summit. The vault, less than a meter in length, serves as the entrance to what appears to be a natural cave. Currently, the vault and cave are filled by debris to within 15 cm of the top of the passage, so that only a camera and/or flashlight could be inserted to obtain a view for a very limited span (Figures 34a and 34b).

Another distinct set of constructions rests upon a natural bedrock rise immediately north of the pueblo, to the north of the school and east of the road to Xquerol (Figures 16 and 22). A large platform (Structure N4E6-1), or small acropolis, has been made here by the leveling off a natural elevation. Four primary mounds top the platform, on the northwestern (Structure N4E6-3), northeastern (Structure N4E6-4), southeastern (Structure N4E6-2), and southwestern (Structure N4E6-1) sides. Foundation braces were visible in the surrounding area, but these could not be mapped due to time constraints at the end of the season. The mounds themselves contain little-to-no intact surface architecture at present. Some of the damage may be the result of *albarrada* construction for properties in the area, but large Caste War fortifications interspersed between the mounds likely were the primary consumers of surface architecture. Nicely cut stones were used to provide a firm base and originally flat sides to the approximately 1.5-m-thick *trincheras* and other less substantial wall lines also appear to have been erected with defense in mind, perhaps serving as the base for

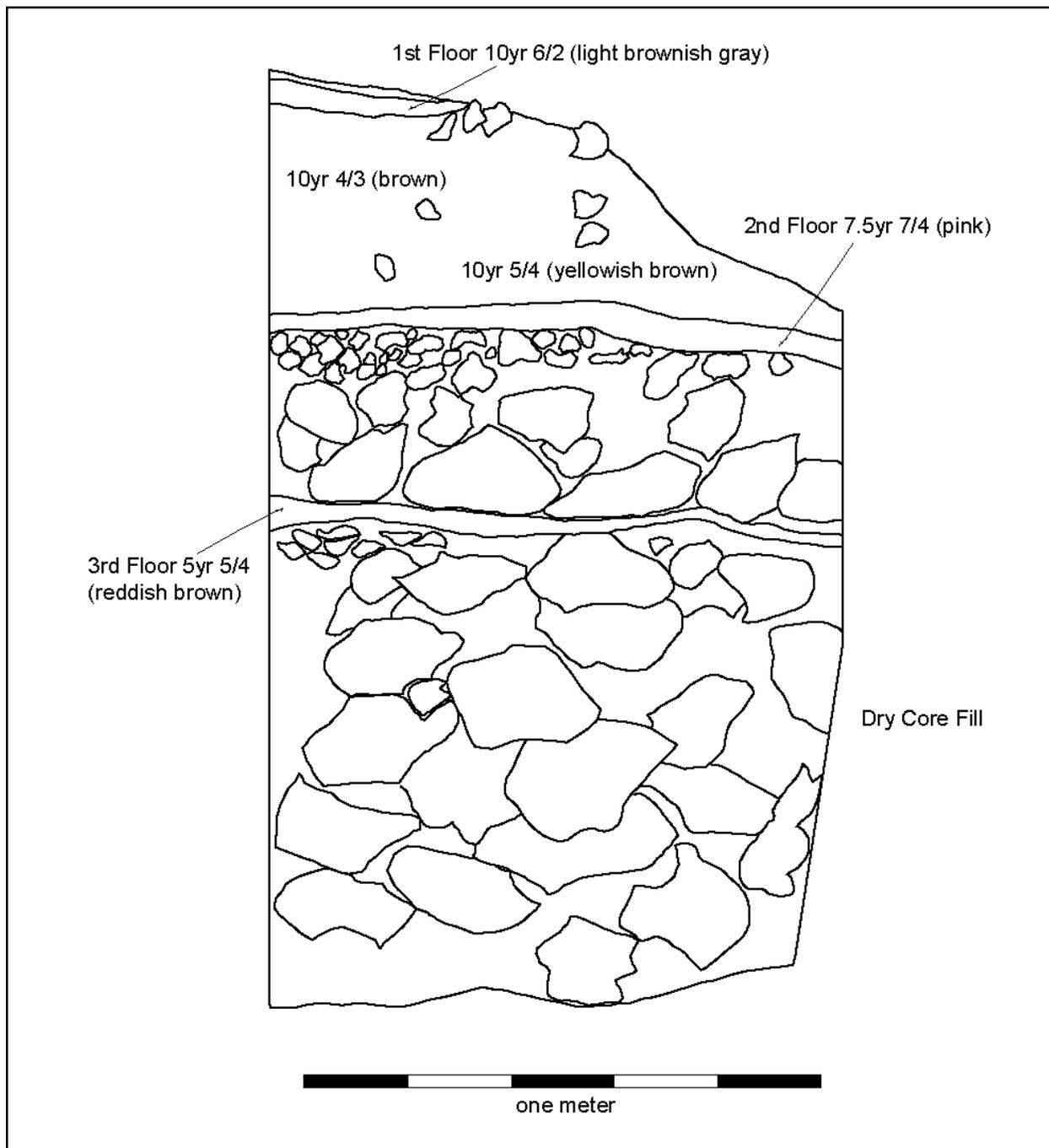


Figure 19a. East Profile of Sacalaca Outhouse Pit

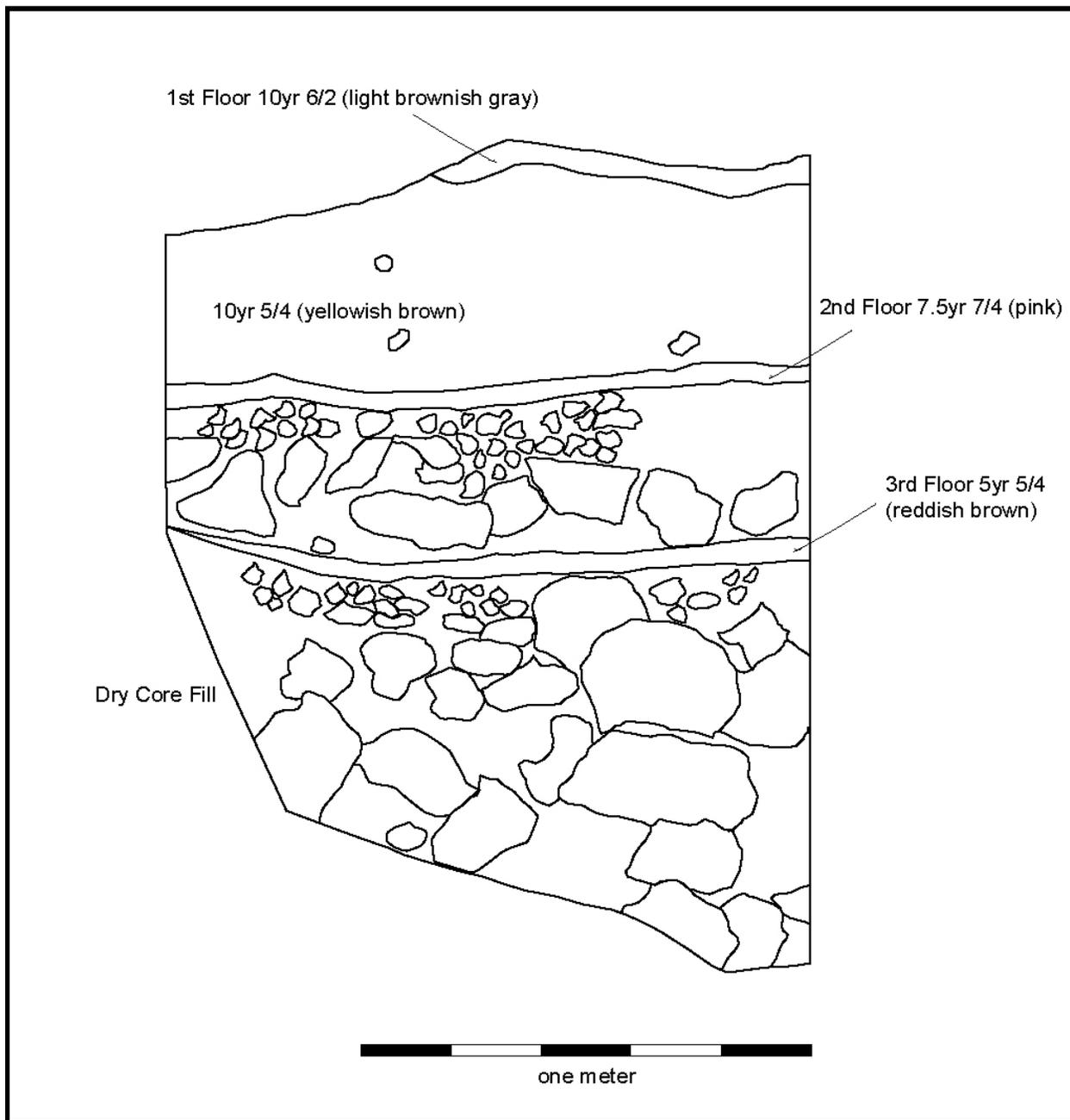
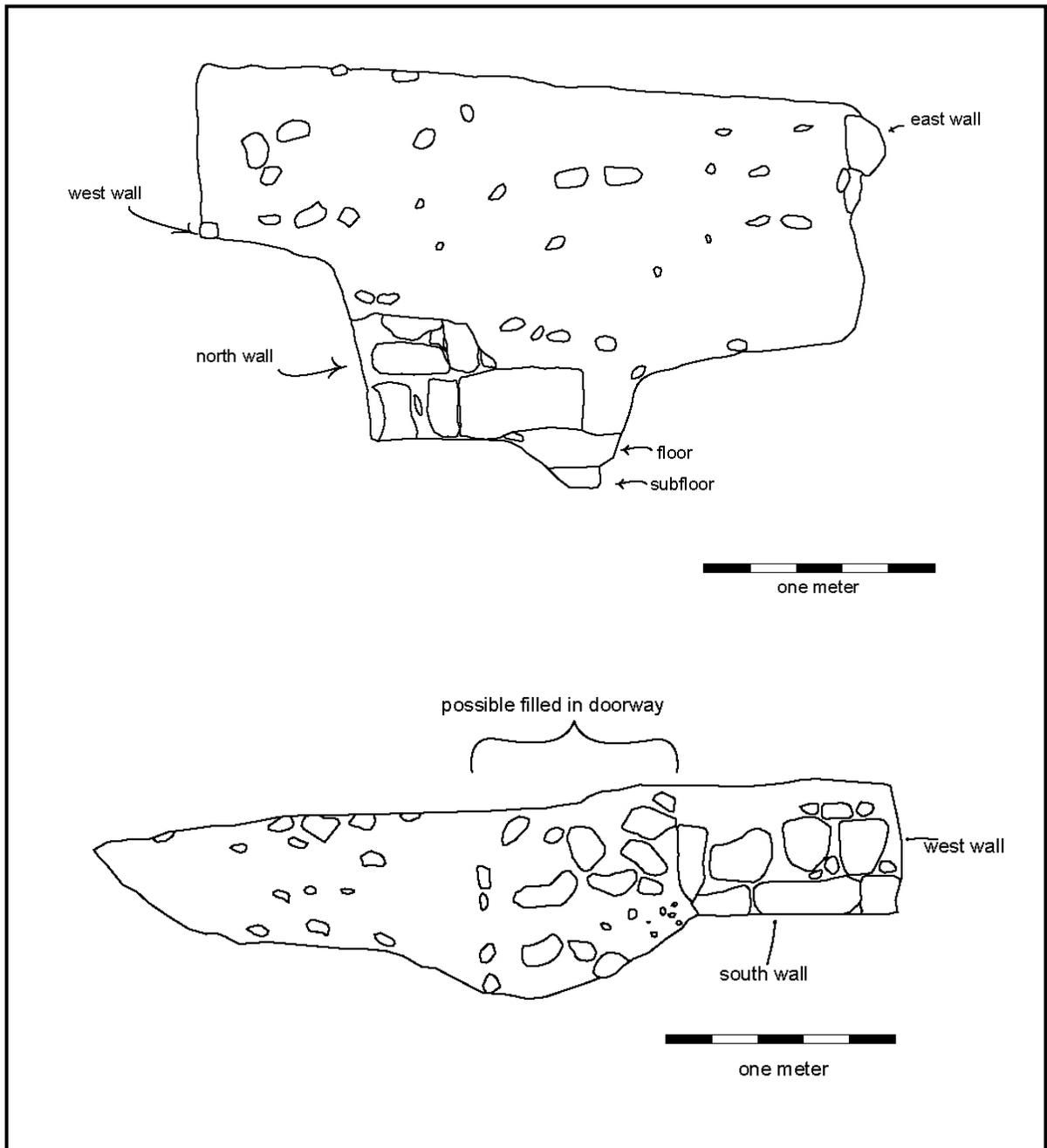


Figure 19b. North Profile of Sacalaca's Outhouse Pit



Figures 20a and 20b. North (top) and South (bottom) Profiles of Exposed Room in Sacalaca's Structure S5E5-2

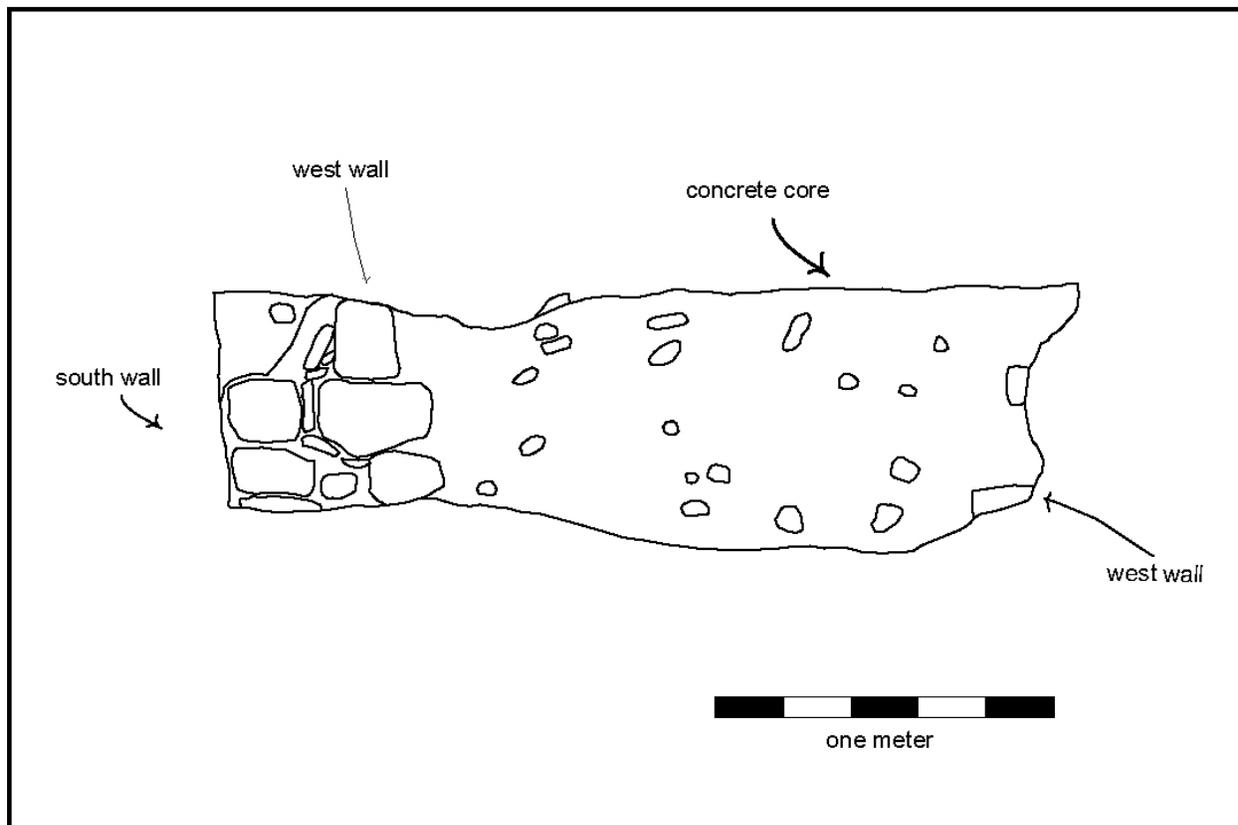


Figure 20c. West Profile of Exposed Room in Sacalaca's Structure S5E5-2

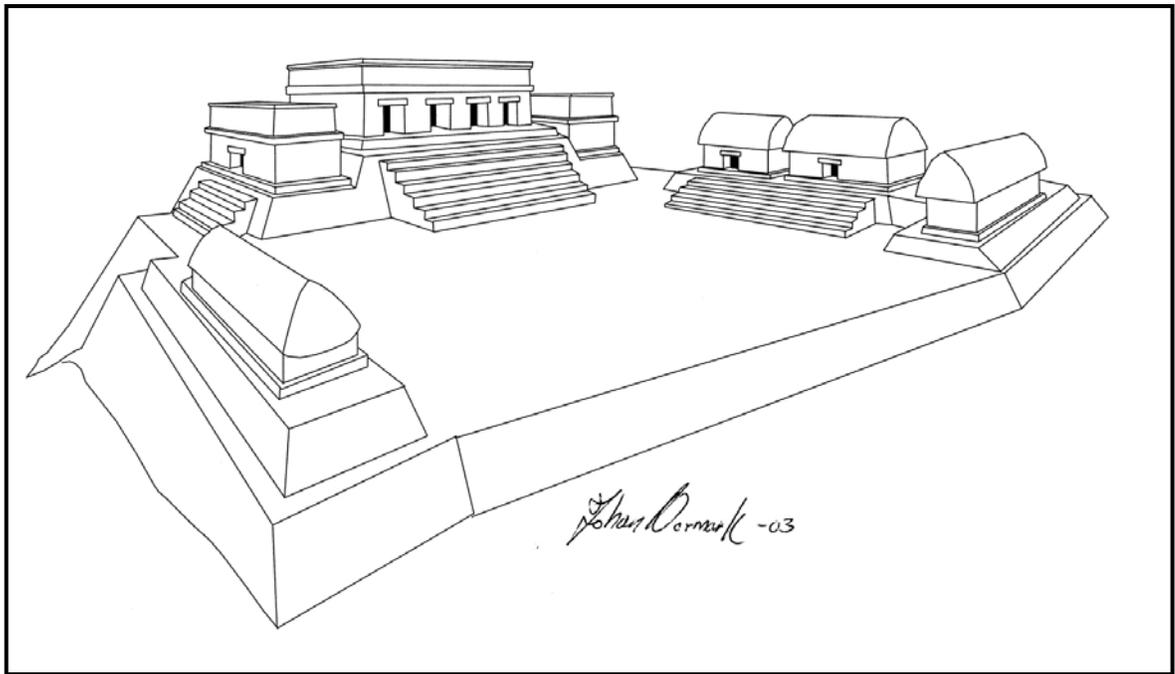


Figure 21. Reconstruction of Sacalaca's Acropolis

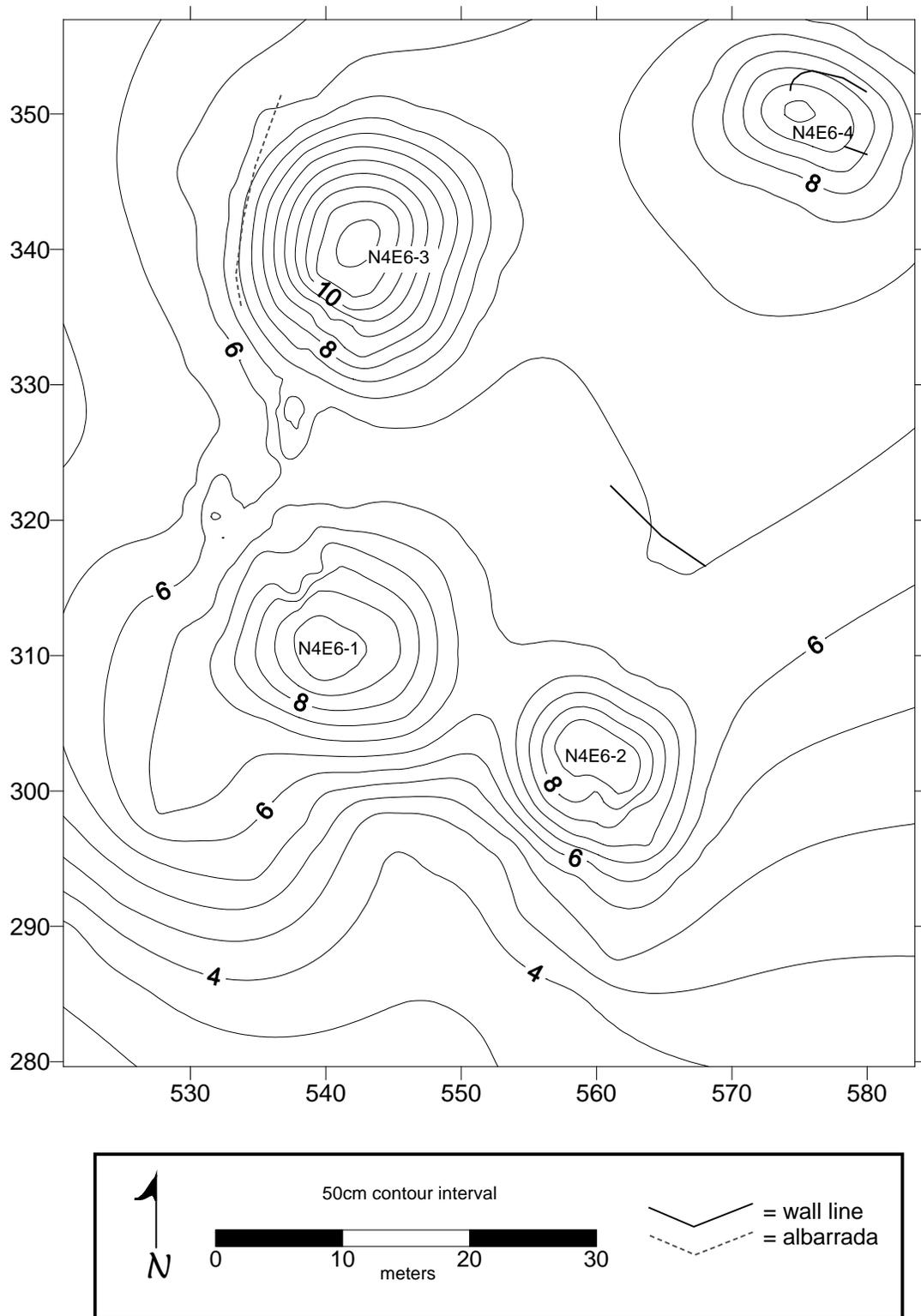


Figure 22. Sacalaca's Northeast Group

wooden palisades. It is unclear whether this group served as a spatially and/or temporally separate site from the main constructions in Sacalaca since the intervening area could not be recorded in 2003 and is currently covered with modern occupation. If the mounds are contemporaneous with the Sacalaca site core, they must have been under its political control since they are only about 700m from the Structure S5E5-1 acropolis.

Site of Cortada

The second immediately visible mound in the *ejido* lies between Sacalaca and Xquerol (Figure 1); it has been cut by this road on its northern edge. This mound appears to be the focus of a distinct site, named Cortada by the investigators (locals refer to the site only as the “*monticulo*”). The primary mound constituting the site, Structure N1W1-1, has been truncated on its eastern edge by a modern road cut (Figure 23). Large expanses to the northeast and southeast of the mound (east of the modern road) have been bulldozed to remove road construction materials, thus removing any traces of settlement in this zone. The areas to the immediate north and south of Structure N1W1-1 likewise display signs of heavy machinery damage. Four backhoe-sized bites have been taken out of the north side of the mound itself. Additionally, Structure N1W1-1 is revealed in profile by the eastern road cut (Figure 24), with one floor sequence displayed beneath the modern surface. Surface collections were conducted in two areas on the southern side of the mound and on the roadcut itself. While many of the ceramics were unidentifiable, numerous Chen Mul fragments indicate a Postclassic utilization of the mound that followed a Terminal Classic occupation. No surface stones remained clearly *in situ*.

Cortada also contains a series of wall lines to the northeast of Structure N1W1-1, which form Structures N1W1-2 and N1W1-3, as well as potentially other more fragmentary features. These wall lines are primarily composed of large, uncut stone blocks that often typify Late Formative dwellings. Structure N1W1-2 appears to be a platform, while Structure N1W1-3 is an apsidal foundation brace. These, and other, early constructions in the area appear to have been robbed of much of their stone, particularly close to Structure N1W1-1. This may be because this is also the general direction of the modern road, and the stones may have been borrowed for earlier, more hand-built incarnations of the tract; as many of the surface rocks have been removed from Structure N1W1-1 also, this seems a distinct possibility. Alternately, stones may have been removed for use in Structure N1W1-1. A circular mound with a small square superstructure and steps to the south, Structure N1W1-6, completes the complex. Sherds are common on nearby paths and natural rises indicating that the settlement zone of Cortada continues throughout the immediate area.

In sum, Cortada appears to have served as an outlying settlement area during the periods when Sacalaca itself evidences occupation. During the Late Formative, only basic dwellings are evidenced at the site. The Terminal Classic occupation warranted the construction of a small mound (Structure N1W1-1), which was also visited during the Postclassic. When a road was initially built nearby to connect Sacalaca and Xquerol, the buildings served as a source of stone. The most recent version of the road was built of imported materials, but the heavy machinery used in its construction brought further damage to the site.

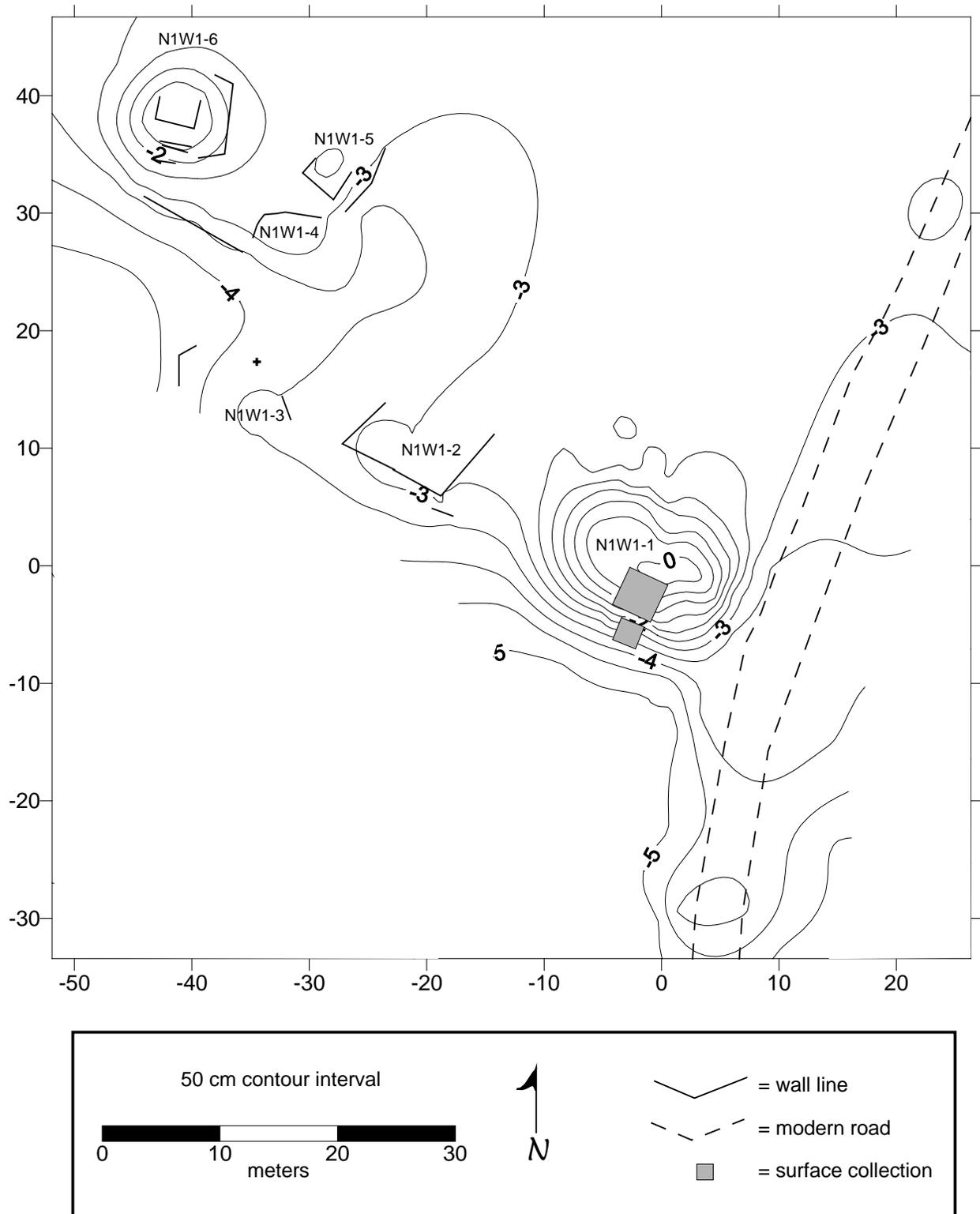


Figure 23. Plan Map of Cortada

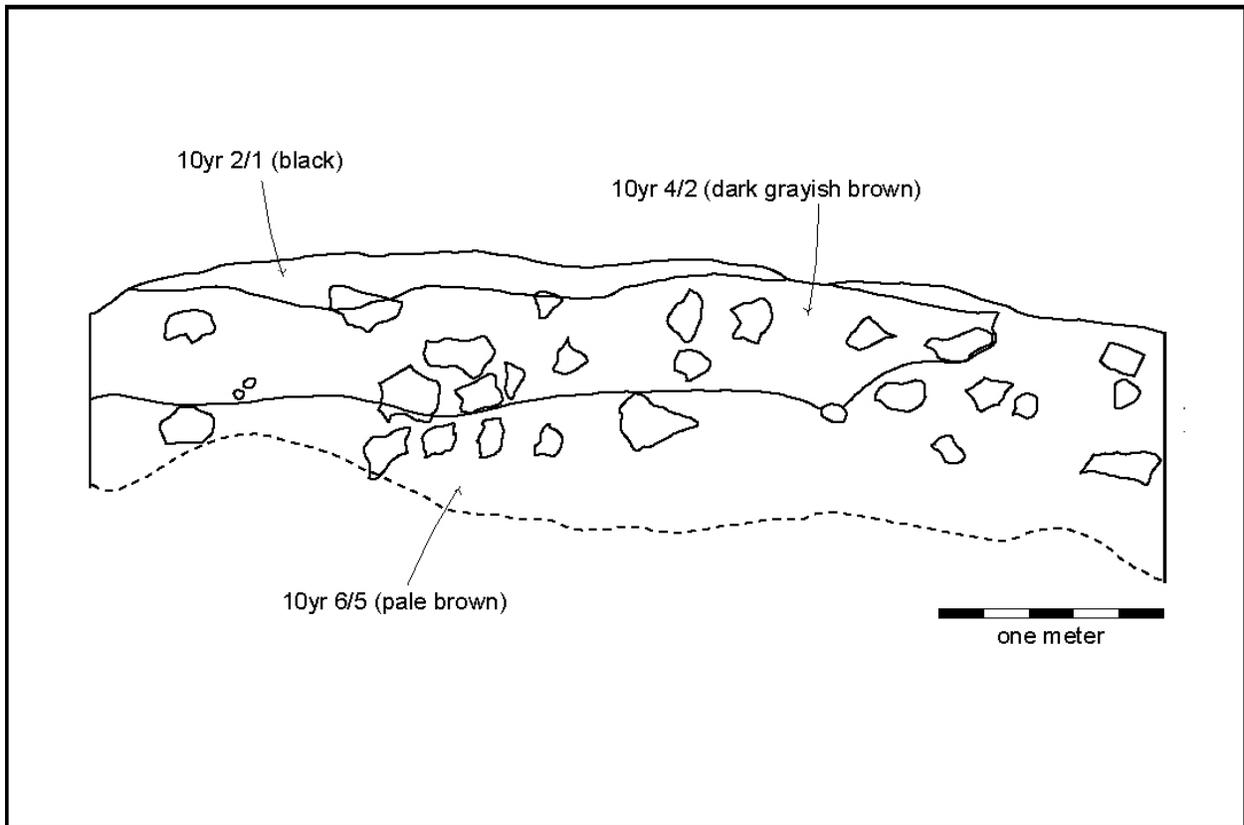


Figure 24. Profile of Cortada's Structure N1W1-1 at Roadcut

Alberto Flores and Johan Normark conducted reconnaissance throughout outlying portions of the Sacalaca *ejido* for three days utilizing local informants in order to provide basic documentation of some of the archaeological remains located at a greater distance from modern roads. See “Archaeological Reconnaissance of Outlying Sites in the *Ejido* of Sacalaca” and “Caves and Settlement in the *Ejido* of Sacalaca” in this volume for details of this reconnaissance.

Operation 1 at Sacalaca

Alberto G. Flores Colin

Sacalaca's Operation 1¹ consisted a 2 x 2 m test pit, located on the plaza of Sacalaca Acropolis, Structure S5E5-1, just to the south of the highest building on the acropolis (Structure S5E5-2). The aim of this Operation, as part of a preliminary investigation into the site, was to better understand the occupational and/or constructive phases of the building, and the site's relationship to other centers within the region. Since the results obtained from one test pit can only begin to provide this understanding, the ideas put forth here are similarly only preliminary ideas. The Acropolis is located in the center of the *pueblo*, north of the colonial church (Figure 16). Much of the area is currently occupied by houses and *solares*; as a result, the Acropolis has been divided by a network of *albarradas* that mark the border of each propriety (Figure 18). To the north side of the pit is a stone alignment that could be part of the last construction phase of Structure S5E5-2. On the surface, a lot of trash was present (mainly metal and glass), dropped there because is the rear part of the *solar*, often used for the disposal of rubbish.

Operation 1, Level 1, Lot 1 consisted of a very grayish dark brown soil (10YR 3/2), mixed with stones of different sizes, and stucco fragments. These materials lay combined without an apparently order, and because of the nature of their deposition can be attributed to the building collapse and an occupation and/or visits during the Postclassic period. In this Level, the Chen Mul Modeled and Yokat Striated sherds, pertaining to Postclassic and Terminal Classic periods were abundant (Figure 25; Table 3).

At a depth of 55 cm, a line of faced veneer stones was found on the north profile. The stones stood out slightly (roughly 5 to 20 cm), and seemed be a part of the base of the Structure S5E5-2, possibly the stair of last occupation. Since a large quantity of stucco fragments was included in the deposit, we decided to change lots, to Level 1, Lot 2. While continuing to clean this area, other fragments of stucco were frequently exposed, gradually leading to the discovery of a first floor of this material that was not well preserved. This floor (Floor 1) was a irregular surface, only polished on in small portions. The polished areas were mainly located to the southeast side of the unit (Figure 26). On one of the faced stones of the profile a small floor fragment, covering the corner of the block (about 5 cm) and extending onto the surface of the wall, was found *in situ*. Immediately below this floor was another better preserved floor (Floor 2); materials in the sealed context below this floor were included in Level 2, Lot 1.

Once this floor was removed, its base of medium size stones mixed with *chich*, and a grayish brown soil (10YR 5/2) was found. Several Terminal Classic Yokat Striated sherds were included in this level. Below this appeared a third floor in a variable state of preservation. As a result, the unit was divided in two lots: Level 3, Lot 1 and Level 3, Lot 2. The first one representing the well preserved, still polished surface, while the second was used to designate the areas with more erosion. Once

¹ This operation was directed by Johan Normark and me, advised and supervised by Justine Shaw and Dave Johnstone; additionally the local workers collaborate with us in the excavation work.

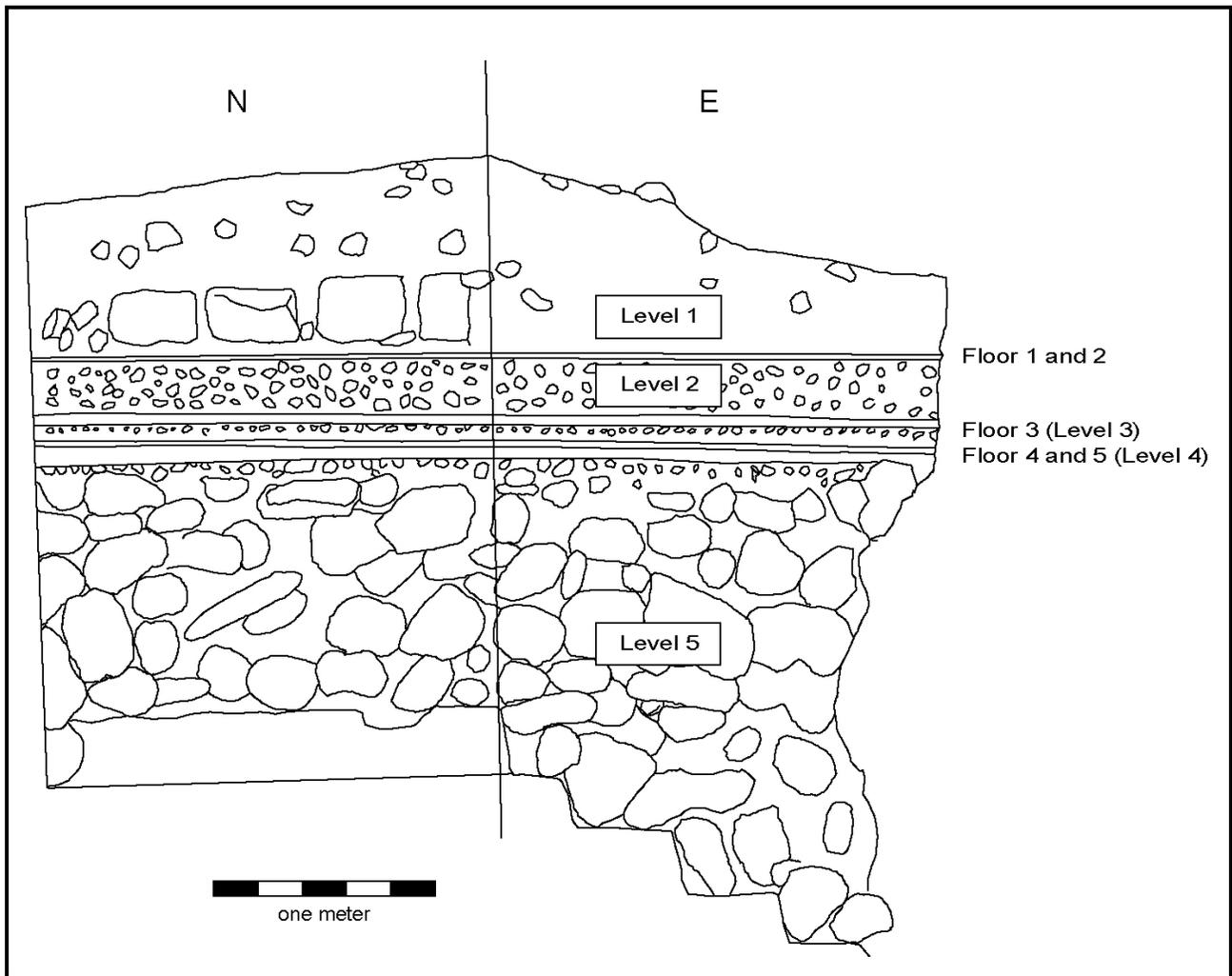


Figure 25. Sacalaca's Operation 1, North and East Profiles

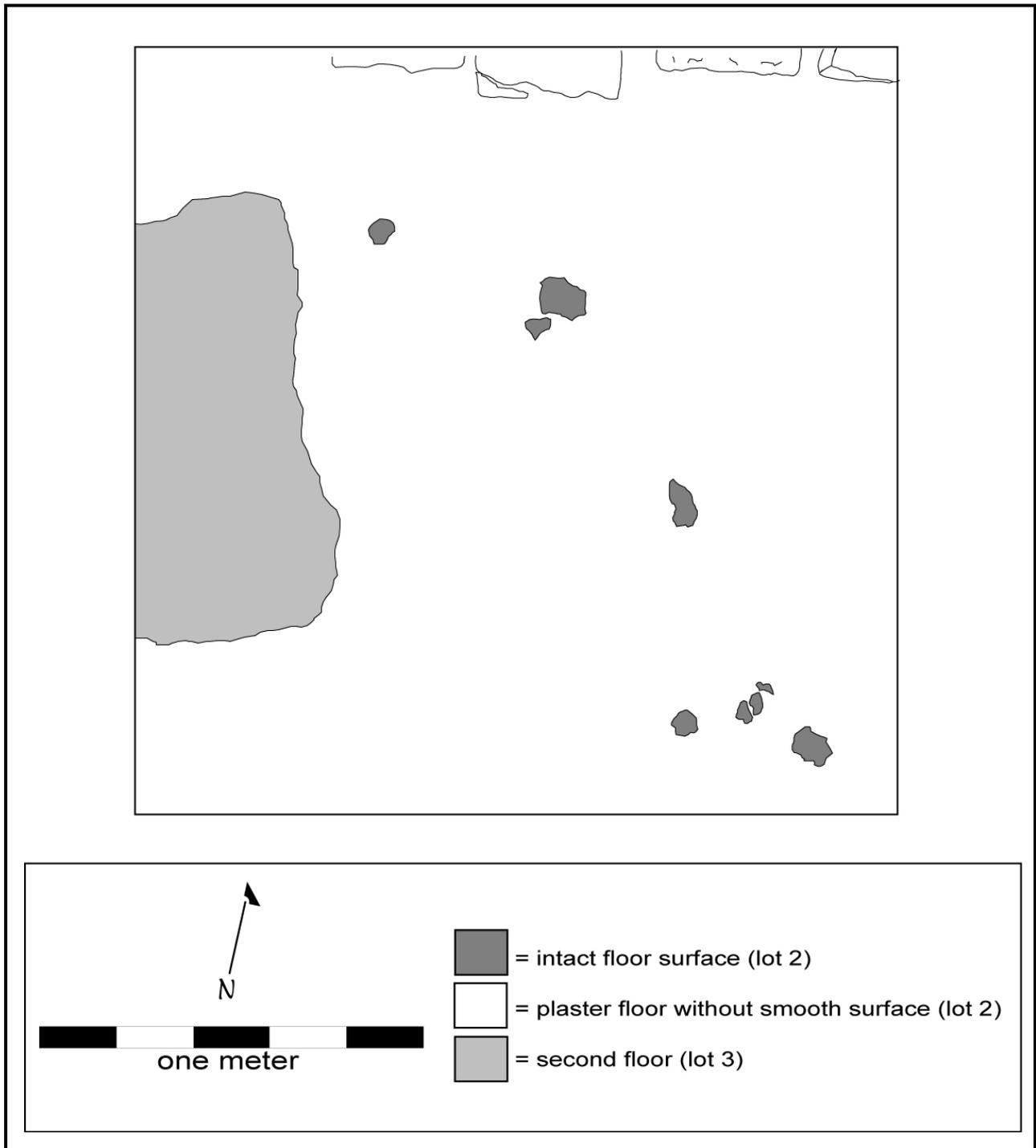


Figure 26. Sacalaca's Operation 1, Lots 2 and 3, Floor 1

the floor was removed, we continued with the subfloor, which was composed by *chich* and a brown soil (7.5YR 5/4). Ceramics from this level include the Early Classic types of Xanaba Red and Yaxcaba Striated, but also Terminal Classic Yokat Striated sherds that clearly date the deposit to this later time period. Once both lots were removed, a fourth floor in a good state of preservation was discovered (Level 4) that was divided in two lots according to its preservation, the first lot (Level 4, Lot 1) being the most damaged while Level 4, Lot 2 corresponds to the better preserved area.

At 5 cm beneath the floor surface, another floor was located, Floor 5. This floor possessed the same material composition and general characteristics, with a very light brown (10YR 8/3) coloration. The most common ceramic type was the Late Formative Sierra Red. Once the floor was removed, Level 5, Lot 1, which formed the base of the two floors, could be excavated. This deposit was composed of approximately 10-cm-size small stones (*chich*) mixed with a grayish brown soil (10YR 6/2) and dry core fill made up of large 1-m boulders (Figure 25).

After the removal of the boulders, at an average depth of 2.40 m, a series of steps covered by well-preserved, yellowish, 10-cm-thick stucco was found (Figure 27). Based upon the small openings formed between the boulders in the east and west profiles, it was possible to observe that the steps continued for at least 1 m beyond the edges of the pit. Due the fragile condition of the stucco, and to preserve the intact architecture, the excavation was concluded at this point and the pit was backfilled following documentation. The Late Formative Sierra Red was the predominant ceramic type from this level, although some Middle Formative sherds, such as Chunhinta and Dzudzuquil also were included.

Interpretation

Although it is not possible to provide details about the earliest occupation in the area, based upon the presence of Medium Formative sherds, it may be assumed that some portion of Sacalaca was settled by at least this time. As far back as the Late Formative, a building, perhaps similar to the later Acropolis, existed. This Late Formative structure had an external stairway, corresponding to the stairs that we found to the end of the Level 5, Lot 1. Later in this period, perhaps as a program of plaza modification, the building was enlarged using a substantial dry core fill deposit, followed by a small layer of *chich* as the base of a plaster floor (Floor 5). In order to maintain the floor, after some time, they resurfaced the plaza, adding Floor 4. By this time, some form of the acropolis may have existed. In the Terminal Classic, a new plaza surface, designated Floor 3, was added. Years later, during the same period, the area required another modification and the Floor 2 surface was added. Upon this, Floor 1 was placed, to maintain the plaza in spite of the climate, years of exposure, and human damage. Since this was the last construction stage of this plaza, only a few fragments remain. The wall of faced stones in the north profile may also pertain to this period and it may be that during this Terminal Classic period that the Acropolis takes its definitive shape. This wall perhaps was part of the first step of the external stairway of the Structure S5E5-2, which led to the summit of the building.

Some sherds, mainly Chen Mul Modeled *incensario* fragments, provide evidence of Postclassic activity that likely consisted mainly of visitors leaving offerings, perhaps as a ritual to the memories of their ancestors. Later the site was definitely abandoned.



Figure 27. Sacalaca's Operation 1 Stairway and North Profile

Although Colonial remains exist, such as the church directly in front of the Acropolis, it seems that the site was abandoned or at least largely uninhabited at the time of Contact. Pedro de Valencia, who has the *encomienda* of Sacalaca in the 16th century, mentioned which the “indians” of Sacalaca were displaced from their original settlement to the modern *pueblo*. Additionally the church must have been constructed between the years 1781 and 1810 (Bretos 1992:144; RHGGY 1983); for this reason it may be deduced that the Colonial occupation was delayed. The last layer, Level 1, Lot 1, was a mixture of collapse coming from the top of the building, caused by the impact of environmental and/or human factors through time.

Operation 2 at Sacalaca

Dave Johnstone

Operation 2 was situated to the north of the base of Structure S10E2-2, the second largest mound at Sacalaca, and the anchor of the southern axis of the site (Figure 17). A 2 x 2 m test pit, Operation 2 was designed to date Structure S10E2-1, a large artificial platform supporting a 6-m-tall mound on its southern edge. The platform has experienced extensive disturbance on both its eastern and northern sides, and these disturbances suggested that deep deposits might be encountered.

Level 1 was removed as a single lot consisting of dark brown soil containing some *chich* that continued to a depth of 45 cm (Figure 28). Recovered ceramics included poorly preserved Terminal Classic Puuc Slate wares.

Bedrock covered the northern half of the unit below Level 1, with the southern half composed of *chac luum*. This material was removed as Level 2, Lot 1 exposing irregular bedrock that dipped toward the south. Owing to the shallow nature of the unit and the proximity of the bedrock, the drainage at this locality was poor, resulting in poor ceramic preservation. Those ceramics that were identifiable from Level 2 dated to the Late Formative, with some Terminal Classic admixture.

Operation 2 did not provide the deep deposits that were expected given the visible exposures elsewhere on Structure S10E2-1. As a result, few ceramics were recovered, and those that were, were in poor condition. A sufficiently large sample was recovered that did permit the dating of the construction of Structure S10E2-1 to the Terminal Classic, with Structure S10E2-2 presumably being contemporaneous. Some support for this conclusion may be seen in the presence of some cut veneer stones in the collapse debris at the base of the building.

As a control, a recently disturbed area along the east side of Structure S10E2-1 was surface collected (Table 3). This material too was overwhelmingly Terminal Classic in date.

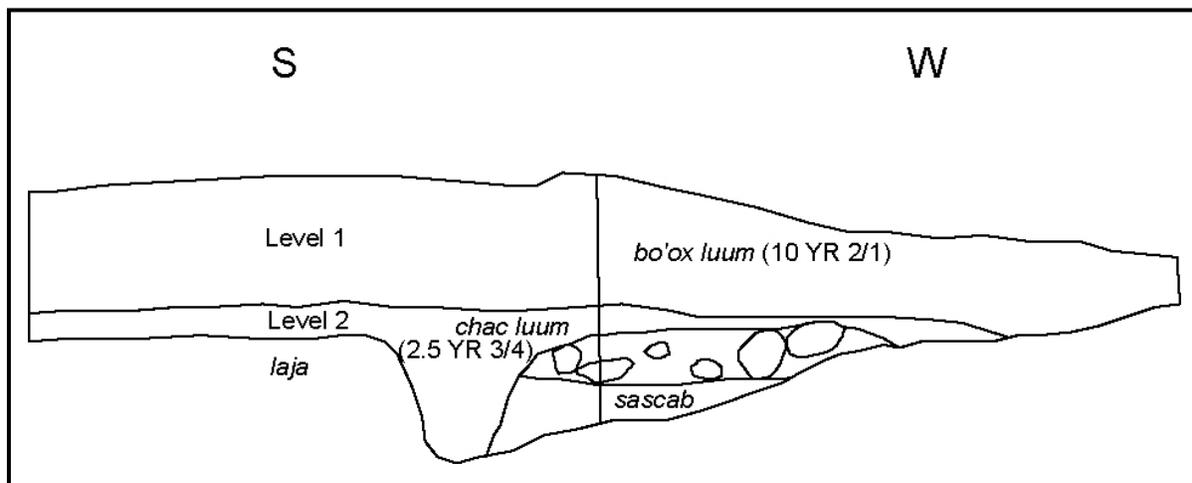


Figure 28. Profile of Sacalaca's Operation 2

Archaeological Reconnaissance of Outlying Sites in the *Ejido* of Sacalaca

Alberto G. Flores Colin

One of the aims of the 2003 CRAS Project was to inventory the archaeological remains in the *ejidos* of Sacalaca and Xquerol, giving priority to the larger and more accessible sites. Our focus was on building knowledge about the sites in the interior of the *ejido*, to evaluate the possibility of future study. As part of this activity, Johan Normark and I directed several surveys in the Sacalaca *ejido*, utilizing local guides to show us the known sites. A GPS was used to record the coordinates of each locale. Although the locals mentioned the existence of more archaeological remains, due to time constraints we only surveyed a few locales. Here, we present a summary of the characteristics of each site.

Rancho Guadalupe

Rancho Guadalupe, a Prehispanic and Colonial settlement, is located approximately 8 km northwest of the pueblo of Sacalaca (Figure 1). Part of an animal water trough and a very deep well situated on a roughly 1-m-tall platform still remain. To the north of this point, on modern grazing land, are remains of a church, situated on a large platform that may have been the atrium at one time. In the path between the trough and church, a few column fragments, apparently colonial, were observed. These must have come from other constructions that once existed. The condition of the church ruins is deteriorating. Currently, the church lacks a roof and its walls stand only about 2 m tall. On the north wall, are the traces of paint without a clear image. The guide who led us to this place mentioned that previously it was possible to see “drawings,” but now they are illegible because of the passage of time. About 20 m to the north of this church, rises a mound roughly 6 m tall. No architectural features could be discerned on the feature.

In front of this building, to the west, on a 2-m-high natural elevation, we found a well-preserved wall (Figure 29). The area of the Rancho is covered by many natural hills, which could have been utilized and/or adapted to construct structures. Due to the vegetation (the grass is, on average, about 50 cm high), it was difficult to see if other remains existed and it is quite possible that the site was more extensive.

Xtojil

Xtojil is located 8.2 km directly northeast of the pueblo of Sacalaca town, in the middle of a secondary forest (Figure 1). The site is composed of a 6- or 7-m-tall structure (Figure 30), which on the north and east side has a large semidetached platform. Twenty meters to the east, another platform was found, which formed a square with the prior two structures. On the major structure, it is possible to still observe archaeological elements *in situ* as a wall built of large Puuc-style cut stone blocks on the south side. Near the top is a looter's hole that exposed part of the constructive fill. Approximately 100 m to the south of this point, another group of structures was located. This group contained three lower platforms, one of these still clearly includes a stairway and on the top has a Postclassic altar about 2 sq m in area.

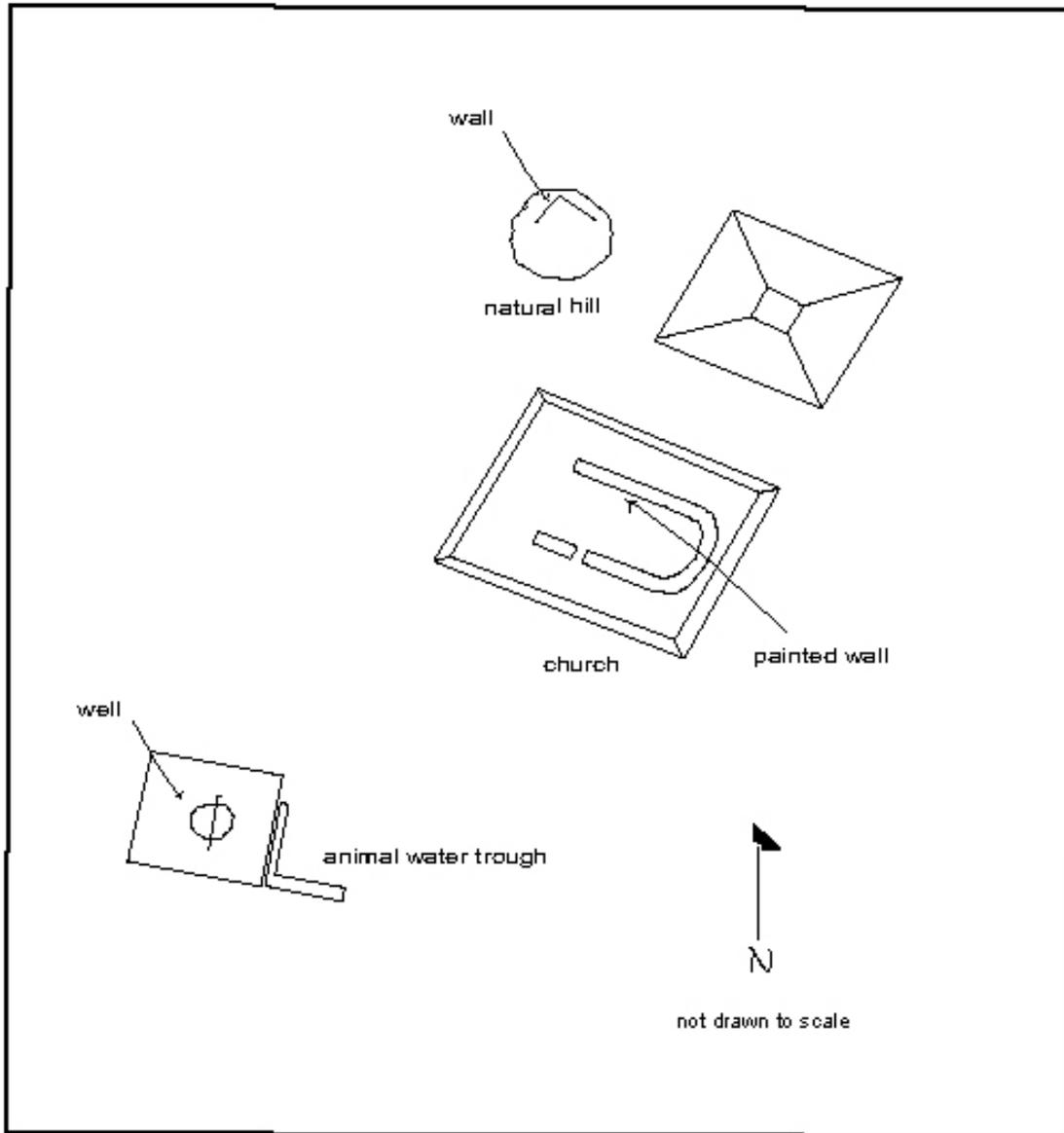


Figure 29. Sketch Map of Rancho Guadalupe



Figure 30. Principal Mound at Xtojil

The stair was built using large, well-cut stones. At a distance of not more than 40 m away, a cave entrance is located (Figure 31). The architectural group was built on a strip of land between two natural hollows, to the east and west, and in the latter is the mouth of the cave. Johan Normak, in another article in this volume (“Caves and Settlement in the *Ejido* of Sacalaca”), discusses in greater detail the relationship between caves and settlements.

Chakal Ja´as

Chakal ja´as means mamey, a local fruit, in Maya. The name was given to this place because many examples of this tree exist here. The site is located 3.6 km to the northwest of the modern town (Figure 1). It includes a large 7-m-tall mound (Figure 32), and at least, nine platforms of variable dimensions (Figure 33).

The main building is situated upon a natural elevation from which a semidetached platform protrudes to the east. On the south side are the remains of a stairway, made with ~40 x 50 cm cut stones. On the summit of the building is a looter's hole. Near this is an additional platform, extending to the southeast, and in front lies another with a small shrine on the top. All of these platforms are joined to yet another platform, located a few meters to the south, forming a small square that contains a Postclassic shrine and a rock pile. To the south is a larger, but shorter, platform (about 2 m in height) and nearby is another platform with a shrine and the remains of a foundation brace. Additionally, more platforms to the south and the east exist; in this direction lies the entrance of a cave. The total extent of the site still unknown, and because the zone surveyed wasn't extensive, it can be assumed more structures are present.

Parcela Escolar

Another site is on the land called Parcela Escolar, a plot donated by the *ejido* to the school for outdoor activities. This land accommodates some archaeological structures of medium size (3 to 5 m), with two buildings above 4 m in height and several small structures distributed throughout the area. A deep well, probably Colonial, was found and we observed many *trincheras* on the surface, probably constructed during the Caste War. Because of the density of the secondary vegetation, visibility was poor and it is possible that other structures exist. The locale is about 1 km to the northeast of Sacalaca's site core, in the center of modern town, and adjacent to structures on the northeastern periphery of the site (Figure 22). Surely this area was part of the periphery of the Sacalaca settlement (Figures 1 and 16).

El Ramonal Oriente

The site of El Ramonal Oriente is located 5.2 km to the northeast of Sacalaca. It is composed of two rectangular platforms that are approximately 2 m high (Figure 1). Two *pilas* were observed on the surface. Due to time constraints, our visit to this place was short and we could not survey an extensive zone, leaving the possibility that settlement was larger.

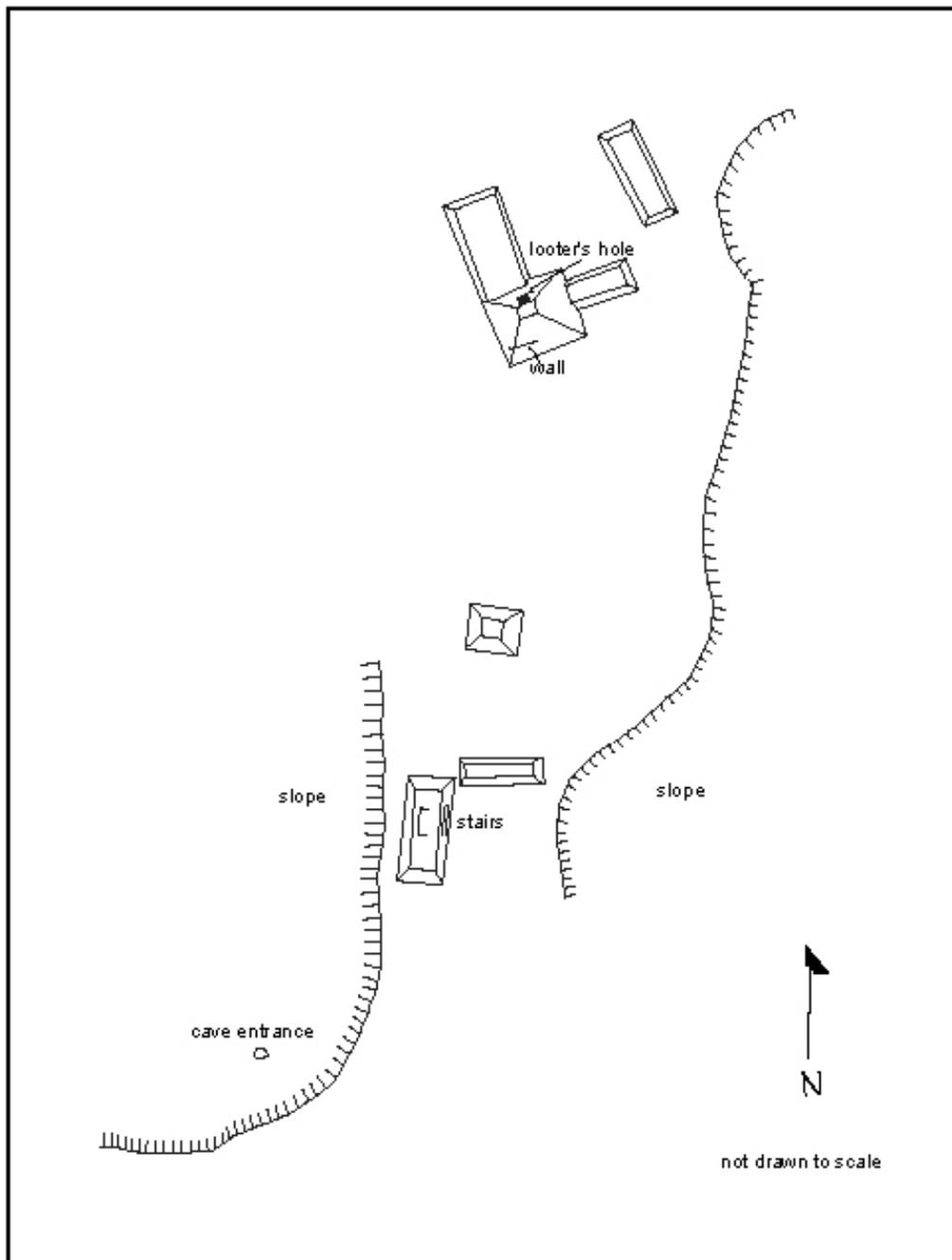


Figure 31. Sketch Map of Xtojil



Figure 32. Principal Mound at Chakal Ja'as

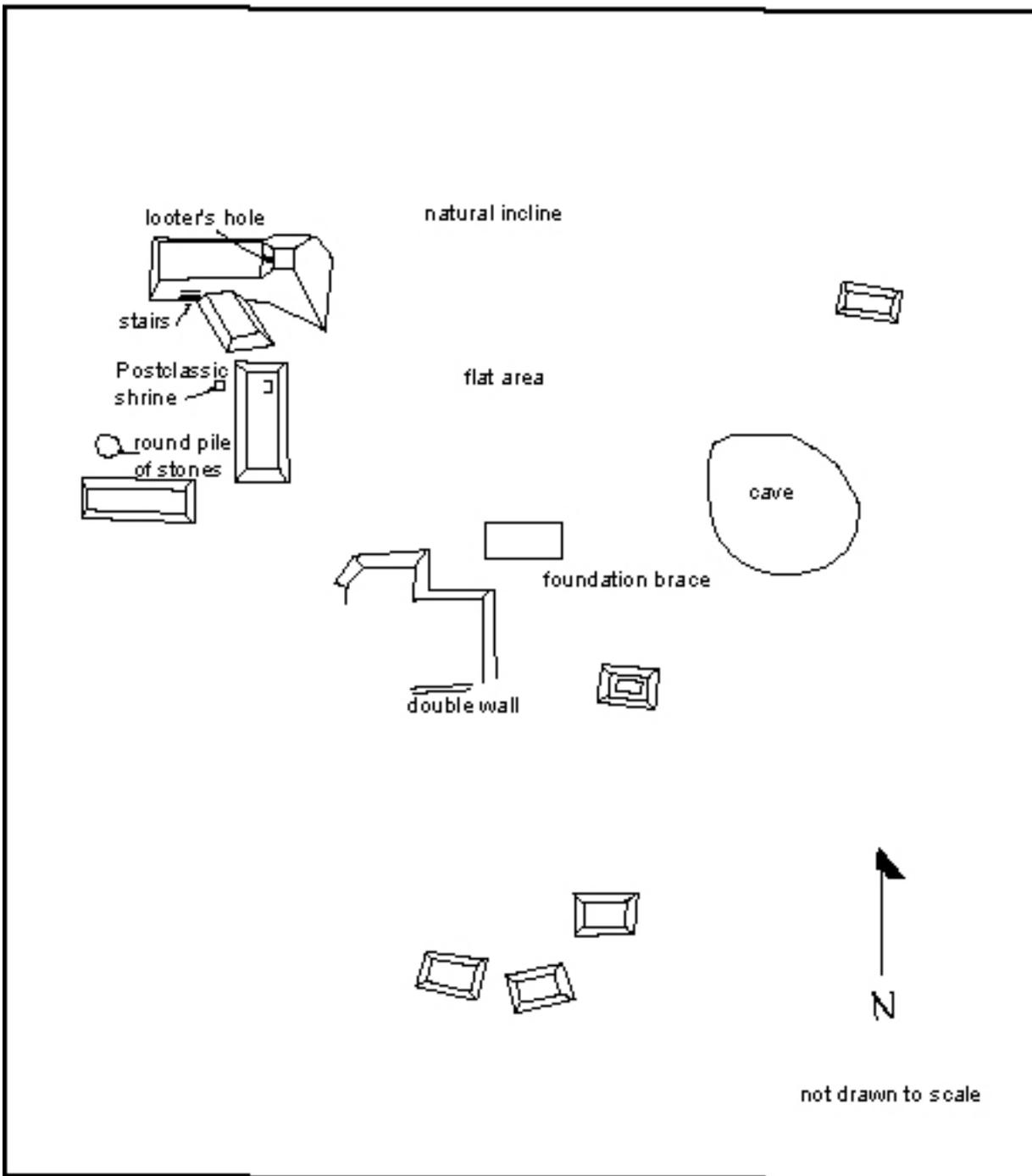


Figure 33. Sketch Map of Chakal Ja'as

Other Sites in the *Ejido*

The *ejidatarios* of Sacalaca mentioned the existence of at least two other sites; however due to the fact that the field season was very near its end when the survey was conducted, it was not possible to visit these locations. The first one is known as Rancho Santa Elena, where presumably three 5- to 6-m-tall pyramidal structures exist. The other site is called El Ramonal also, but because it is located to the southwest, we have given it the name of El Ramonal Poniente (west). It seems to be an *Ex-hacienda* with Prehispanic remains. Individuals familiar with the site mentioned the presence of “rooms” and some pyramidal structures. A future reconnaissance could confirm the existence and the exact characteristics of each location.

Final Comment

As has been said, this effort to register archaeological sites is only a preliminary step in gaining knowledge about the ruins of the region. Without a doubt, other sites like El Ramonal Poniente and Rancho Santa Elena exist that haven't been reported before. A future study, using aerial photos and a more extensive survey including the collection of materials, could give a better idea of the characteristics and date of the sites. However, the places visited already present some common features. First, all include monumental architectural of modest dimensions and, following the classification of the Atlas Arqueológico de Yucatán, the sites would be classified as Rank Four² sites. Xtojil and Chakal ja'as are composed with two similar-style structures and each site is related to a cave (see “Caves and Settlement in the *Ejido* of Sacalaca” this volume). El Ramonal Oriente has more similarities to Nohcacab, in the *ejido* of Xquerol (see “*Ejido* of Xquerol” this volume), while Parcela Escolar bears a semblance to Sacalaca's northeastern group of structures. The remains of Rancho Guadalupe combine a Prehispanic and Colonial occupation, which indicates that the position of the sites and their characteristics, symbolic and/or economic, continued to be conducive to settlement after the conquest. Since Sacalaca is the major site in the surrounding area, we can suppose that all of these sites had some relation to and/or dependence upon this major center. Without a doubt, a subsequent study could contribute to a better understanding of the affiliation and chronology of each one of these outlying sites.

Acknowledgements

We would particularly like to thank the six local guides who were kind enough to lead us to the sites and liven up the walks in the tropical isolation with their company, as well as all of the *ejidatarios* of Sacalaca who permitted us conduct this reconnaissance.

² This classification refers to sites with an aerial extent of less than 0.5 sq km, with fewer than fifteen platforms below 2 m high, less than ten structures between 2 and 5 m tall, and without a special archaeological element (notable painting and/ or architecture). Generally these sites depend politically upon other sites, although they are capable of performing all of the functions that they need to survive (Velázquez *et al.* 1988: 63-73). Although this classification is subjective and excludes a lot of characteristics, we think this give us a preliminary idea about each site's rank and importance in the region.

Caves and Settlement in the *Ejido* of Sacalaca

Johan Normark

The *ejido* of Sacalaca contains several locations with caves and *cenotes*. Most notably are Sacalaca, Xtojil, Santa Cruz and Chakal Ja'as (Figure 1). These were investigated by Alberto Flores, four local guides, and me during the summer of 2003.

Caves have been the focus for much recent research in various parts of the Maya area. The cosmological and symbolic aspects of caves for both ancient and modern inhabitants have been critical in these studies (Bassie-Sweet 1991 and 1996; Brady 1997; Gibbs 2000; Rissolo 2001; Stone 1995). Caves were important for the intrasite layout and maybe for the intersite layout as well, as it may have been in the area of the *ejido* of Sacalaca.

Large enclosed spaces of the caves made them important as the ancient people could not construct such large enclosed spaces themselves (Rissolo 2001:347). Several sites have some of their major architecture built on top of caves, such as at Dos Pilas (Brady 1997) and Mayapan (Pugh 2001). Where caves were not available, such as at Utatlan or at Teotihuacán, people made artificial caves instead. Temple entrances were associated with cave openings as well (Bonor Villarejo 1991).

The reason why caves had, and still have, this prominent position is that they are believed to be the residences for the deities who control earth and water. Most of the Yucatecan caves have been thought to be used only for drinking water, but Rissolo (2001) argues that even in places with an abundance of drinking water, people used the caves for ritual purposes.

Most Yucatecan places refer to caves, *cenotes*, and other water-related places. For the contemporary Tzeltal, the caves gives the communities their names since the caves are associated with the center from which the four directions originate (Brady 1997:604). This practice goes back to the Precolumbian past, as shown by the hieroglyphic expression *Kab Ch'een* ("earth-cave") which referred to land or property of rulers (Houston 2000:173). *Chan ch'een'* ("sky-cave") seem to have been important centers (Martin 2001).

Cave terminology among the Yucatecans themselves indicate that *ts'onot* (*cenote*) is used for several watery subterranean features (Rissolo 2001:12). This term is used for any cave with connection to the water table. If it is used to collect water on a daily basis it can be called *ch'en* (well). However, the generic word for cave is *aktun* (Rissolo 2001:13).

From a geological perspective, the karstic features of cultural interest in the *ejido* of Sacalaca are a sinkhole or *cenote* (Sacalaca), a collapsed dome (Aktun Santa Cruz), a collapsed dome with water pool (Aktun Xtojil), and a dry cave (Aktun Chakal Ja'as). The last one is partially a rockshelter, as it has an entrance diameter that is greater than the horizontal length of its deepest alcove (Rissolo 2001:13).

There is at least one other cave-like feature in the Cochuah region. To the east of Sacalaca lies the *ejido* of Xcabil, which we did not have time to investigate this year, but anthropologist Miguel Aguilera (personal communication 2001) reports that painted handprints and other images decorate a protected portion of the *cenote* entrance.

Additionally, a cave system exists in the *ejido* of Saban (Dave Johnstone personal communication).

Due to the lack of sufficient equipment and time pressure due to the distance from the modern roads, the two archaeologists did not enter Aktun Xtojil and Aktun Santa Cruz, although our guides entered Aktun Santa Cruz and took pictures with a digital camera. The drawings from this cave have been drawn from these photos.

Sacalaca

Sacalaca is the largest site within the *ejido* of the same name. A 20-m-deep *cenote* may be the primary reason why people settled here on repeated occasions. A *cenote* was usually associated with the turtle in Maya cosmography. The turtle was for instance important as a depiction of the earth at Mayapan. This site had 26 *cenotes* within the site's wall (Rissolo 2001:32). A turtle also carried the three stones of creation on its back. A famous plate depicts the maize god emerging from a crack in the turtle's carapace (Freidel *et al.* 1993). At any site, this crack was most likely the *cenote*, other caves, or man made caves. No major architecture was found in the immediate vicinity of the *cenote* in Sacalaca.

A palace, Structure S5E5-2, sat on top of an acropolis (Structure S5E5-1) that dominated Sacalaca in the past (Figure 18). The center of the palace lies roughly 670 m southwest from the *cenote* (Figure 16). One hundred and ten m east of the center of Structure S5E5-2, on a lower elevation, lies a large platform, Structure S5E6-7. Upon this platform lies a vaulted structure, extending for 3 m before it ends in bedrock and a possible vertical cavity (Figures 34a and 34b). The vaulted passage was covered up by debris and there was no possibility of investigating this cave opening this season. If one draws a line between the center of the *cenote* and the subterranean passage, a distance of 780 m, it will have roughly the same azimuth as the north and south side of the Sacalaca palace. The palace would not have obscured a possible sightline in the past. It may be coincidence but there might be an overriding construction plan of the site, perhaps similar to the one proposed by Harrison and his triangles as Tikal (Harrison 1999). He suggests that the triangles have to do with ancestral veneration and caves and related geological features are often associated with such practices. There could, of course, have been a belief in a subterranean road or passage between these two features or between the other caves in the local area.

Xtojil

Roughly 8.2 km to the northeast of the main palace in Sacalaca lies a small pyramid (around 6 m tall) at the site of Xtojil (Figures 1, 30, and 31). This building lies 150-200 m north of a cave entrance that leads down to a shelf located inside a large collapsed dome. The estimated height down to the cave floor is 10 m. Our informants told us that there is a 30-m-long cave passage at the bottom that goes in a northward direction to a water pool. North of this area, on the surface, are two large domestic structures right on the edge of a decline in the topography (see "Archaeological Reconnaissance of Outlying Sites in the *Ejido* of Sacalaca" this volume). The vegetation was quite dense at this site and we could not estimate its extent in terms of domestic architecture.



Figures 34a and 34b. Subterranean Passage in Sacalaca

As this is the only known cave with a possible pool within it, the feature may have been important in the vicinity of Sacalaca. This water was probably significant for drinking and for rituals. Another effect is the eerie phenomenon caused by moving water and air inside the cave, making sounds unfamiliar to the surface world, which may have had profound influence in the way that the ancient people communicated with their deities and ancestors (Gibbs 2000:28).

From the balcony overlooking the chamber of the cave a photo was taken (Figure 35). Judging from this photo, there appear to be broken stalactites. From the Yalahau region, intentional breakage of speleothems that later were used for ceremonial purposes at other locations has been reported (Lorenzen 2003; Rissolo 2001). Speleothems have been found in Postclassic shrines and it is not unlikely that broken speleothems may have been brought to the site of Nohcacab to the west. However, that is still only speculation, but this practice could have been carried out during pilgrimages between sites and caves.

Santa Cruz

Approximately 6.2 km northeast from Sacalaca, on the way from Xtojil, lies Aktun Santa Cruz, which is a collapsed dome with a vertical entrance shaft (Figure 1). This cave has paintings, most likely from the Caste War, or at least post-contact period, as some of them have Latin alphabetic symbols.

Both the caves at Santa Cruz and at Xtojil had very narrow entrances leading down into the collapsed dome (this was originally a waterfall into the cave). Cave entrances that were narrow may have restricted the access in a similar fashion as buildings blocked off traffic from public to private areas (Rissolo 2001:347).

Neither Alberto Flores nor I entered the cave, but photos were taken by our two local guides. The pictures on the photos were re-drawn by me in Photoshop and, due to the quality of the photos, these drawings should only be seen as preliminary. We do not know how these pictures relate to each other. The following drawings are not the only one in the cave, but the other photos were of less good quality.

Drawing 1 (Figure 36) shows two beings, a birdlike figure above a humanlike figure with a head, torso and two arms. The human is under a rock that extends out towards the viewer and therefore the angle is awkward.

Drawing 2 (Figure 37) depicts a being with a wide and tall hat, a sketchy body, two tiny arms and thicker legs. To its right side is something that looks like an animal with four legs, head and tail, seen from above. There are also some alphabetic signs to the left of the human.

Drawing 3 (Figure 38) seems to show a two-headed animal. Two heads with ears looks in opposite directions from a joint body with two legs. The creature is standing on what look like crossed banners.

Drawing 4 (Figure 39) has a church-bell-shaped feature with a possible cross on its top. To the right is a text that reads "Santa Cruz". Another text is located above this one, but it was not readable from the photo. This was not seen until processing the picture in Sweden, so we do not know if the cave is called Santa Cruz because of this text or if the text is there to state that it is the cave with this name.



Figure 35. Xtojil Cave Interior

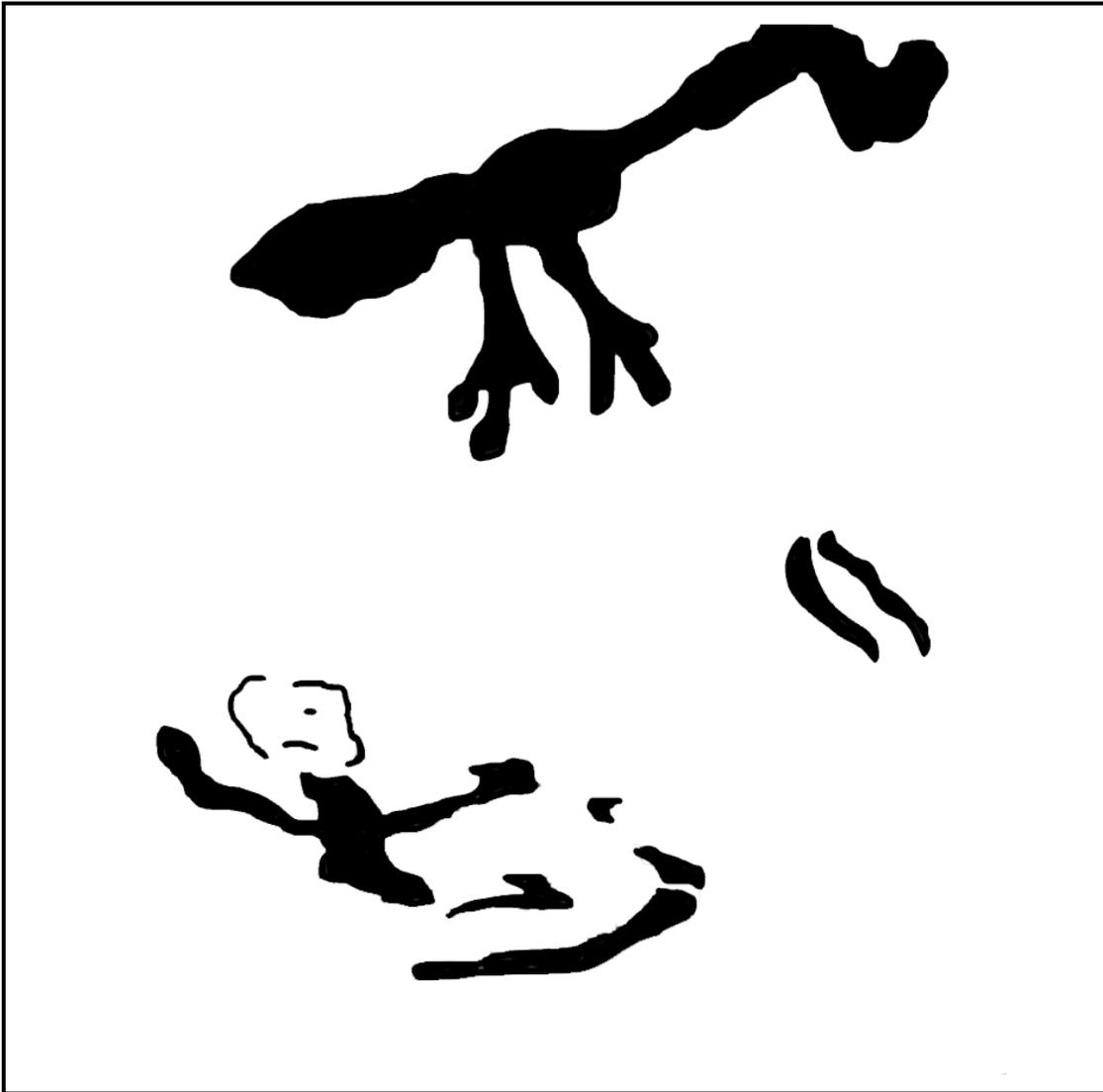


Figure 36. Drawing 1 from Santa Cruz Cave



Figure 37. Drawing 2 from Santa Cruz Cave



Figure 38. Drawing 3 from Santa Cruz Cave



Figure 39. Drawing 4 from Santa Cruz Cave

Drawing 5 (Figure 40) seems to depict a figure in a dress since its garment ends where the ankles are. It could, of course, be a long *huipil*. The figure has two arms, but the head was not detectable.

Drawing 6 (Figure 41) is not easy to interpret. It looks like the face had a hairdress or long hair extending upwards, uniting with a circle that begins with the figure's left elbow. The right arm is depicted within this circle.

Drawing 7 (Figure 42) looks like a person sitting on an animal. It might be a horse, but due to the features on its head it may also be a deer. The animal has four legs, a tail, an eye and a slightly open mouth. The figure on its back is probably holding a rope tied to the animal's head. He may be carrying something on his back.

Drawing 8 (Figure 43) has the name "Alamilla" written with large letters. There is what appears to be a birdlike creature under the text. To the left of the text is a rectangular face with two eyes and a nose or a mouth. Around the face are what could be sun rays. This figure probably depicts the sun. There is another text carved above the "Alamilla" text but it could not be read from the photo.

Drawing 9 (Figure 44) resembles a large skull or head with two eyes. On top of the head is a figure protruding. The smaller figure's arm seems to hold a stick pointing towards two linear features, probably the legs of another figure. The figure protruding from the skull resemble the Precolumbian depictions were the Maize God protrudes from a skull as a sprout.

The last painting could be of older date. There were Precolumbian ceramics inside the cave but no surface site of any date was found near this cave. However, there was not enough time to investigate the surrounding region systematically.

Chakal Ja'as

Not more than 3.6 km east of the Sacalaca main building is Chakal Ja'as (Figures 1 and 33). This old ranch had high *zacate* grass and its size was thus easier to estimate than Xtojil. There was a larger pyramid than at Xtojil (approximately 7-8 m tall), and several residential platforms, including a small Postclassic shrine (see "Archaeological Reconnaissance of Outlying Sites in the *Ejido* of Sacalaca" this volume). From the top of the pyramid one could easily see the modern Telmex tower that is located within the acropolis (Structure S5E5-1) of the palace in Sacalaca. We believe it was possible to see the palace in ancient times if some of the trees obscuring the view today had been gone.

Roughly 100 m east of this pyramid lies a large cave opening/rock shelter (Figure 45). The center of the cave entrance contained debris from eroded collapse. Along the upper eastern wall of the cave, under an overhang but with quite a lot of daylight, is a platform bordered by a wall to the south running east-west. The platform is just in front of a small "cavity" that resembles a vault. This feature penetrates into the eastern part of the cave. White stone slabs seem to have been placed along the eastern wall, north of the platform. A looter's pit was also located in the platform. No mining activities similar to the ones found in the Yalahau region were encountered (Rissolo 2001:360).



Figure 40. Drawing 5 from Santa Cruz Cave



Figure 41. Drawing 6 from Santa Cruz Cave



Figure 42. Drawing 7 from Santa Cruz Cave

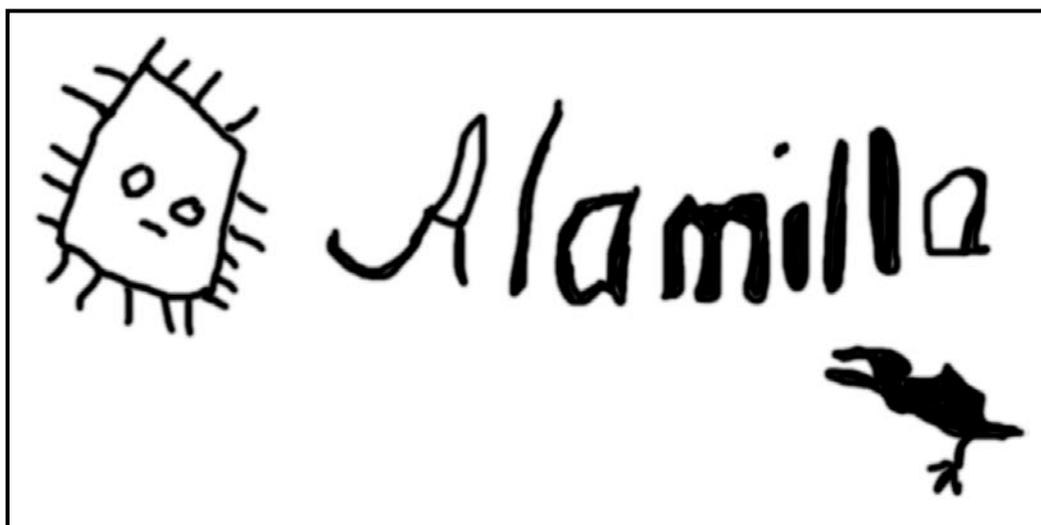


Figure 43. Drawing 8 from Santa Cruz Cave



Figure 44. Drawing 9 from Santa Cruz Cave

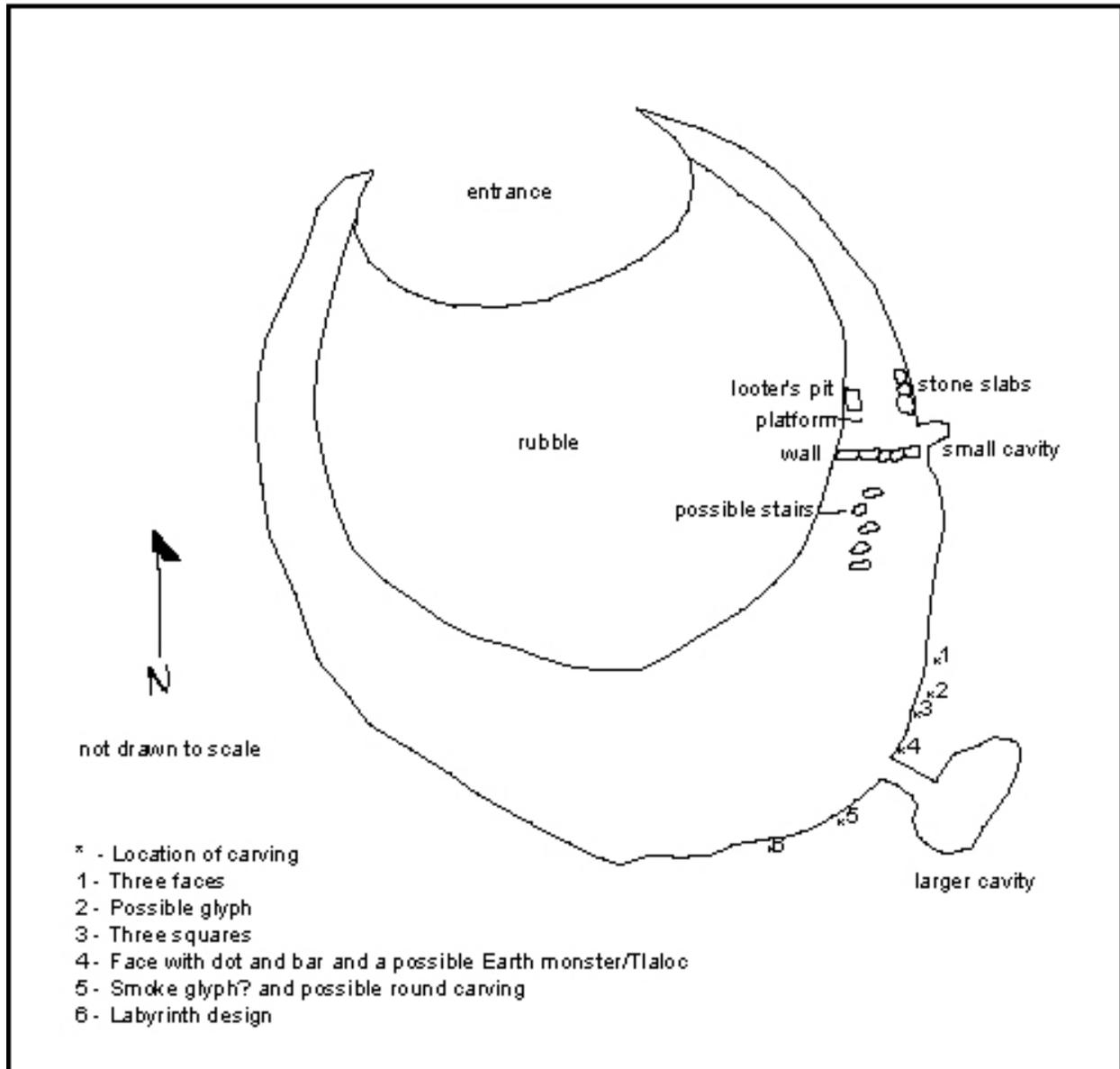


Figure 45. Sketch Map of Chakal Ja'as Cave

There are some scant traces of a possible stairway leading to the south, towards the lowest part of the entrance part of the cave/rock shelter. There are a couple of flat stones lying here and there, mixed with less ordered stones. As these stones are found between the platform and rock carvings in the southern part of the cave we believe it originally was a stairway as this clearly was an important place.

Along this southern and southwestern part of the cave there are plenty of petroglyphs. These are found in a semi-dark environment. Most interesting is an image with fangs, possible goggles (looks like it from one angle but not from other angles), a possible moustache or curled mouth and earflares (Figure 46). The possible goggles may be an indication of Tlaloc but seen from other angles and the rest of the iconography look less like Tlaloc. Above it is a simple face with an inverted bar and dot (the bar is above the dot and the bar is slightly curved). This image is just to the north of an entrance into an inner chamber in which we did not find anything archaeologically interesting. No pool was encountered.

Panel B in Pak Ch'en in the Yalahau region has a central Tlaloc/Ch'aak figure encircled by nine vulva motifs. The Tlaloc has fanged maws, no goggles, similar to representations found at Santa Rita and Mayflower in Belize (Rissolo 2001:134). However, the one found in Chakal Ja'as may have a more Central Mexican appearance as it from some angles seems to have goggles. Rain gods such as Tlaloc or Ch'aak were important in the Maya area. The Balankanche cave near Chichen Itza held 95 effigy censers that depicted Tlaloc. They were located near speleothemes (Andrews IV 1970:9, 12).

There is also a glyphlike carving that resembles the day sign Imix (T501) (Figure 47). It is the first day of the Tzolk'in calendar and represents a water lily blossom. However, it also resembles *b'a* (head, first, self, thing) and *ja'* (water) (Montgomery 2003). The connection to water is interesting in this case. However, all these glyphs have a set of dots encircling the lower part of the rounded center, which the Chakal Ja'as carving does not have. This carving is located further to the north of the "Tlaloc" imagery. Next to it are three faces of the simple face style. To the south of the "water glyph" are three squares and what seem to be engravings of a modern date. There is also a "fish-like" carving (resembling number 8 tilted 90 degrees), one that look like modern glasses (goggles?) and a "penis" carving.

South or west of the inner cave chamber entrance is an interesting area which looks like it could have been a round carving in three dimensions on top with "smoke"-like carvings under it. Close to this one, but along the cave wall, is a small labyrinth pattern.

The head above the "Tlaloc" imagery and the three faces north of this are round, with markings for eyes and mouth. These depictions are very common in the Maya area and, as they are so simple, they are hard to date (López *et al.* 1988; Strecker 1984 and 1985). Some of them may resemble human faces; others perhaps are defleshed skulls, or faces of divinities. The face is the center for identity and the self (*b'aah*) in the Maya area, and as such they may be extending the *ichnal*, an perceptual and interactional field that included the bodies and actions of the people or beings depicted. The *y-ichnal* expression of the Classic period is a cognate to the Yucatec *y-iknal* (Houston and Taube 2000:287). *Iknal* is either a habitual place with a fixed position in space or it is a corporeal field of interaction that is not fixed in space. It is connected to

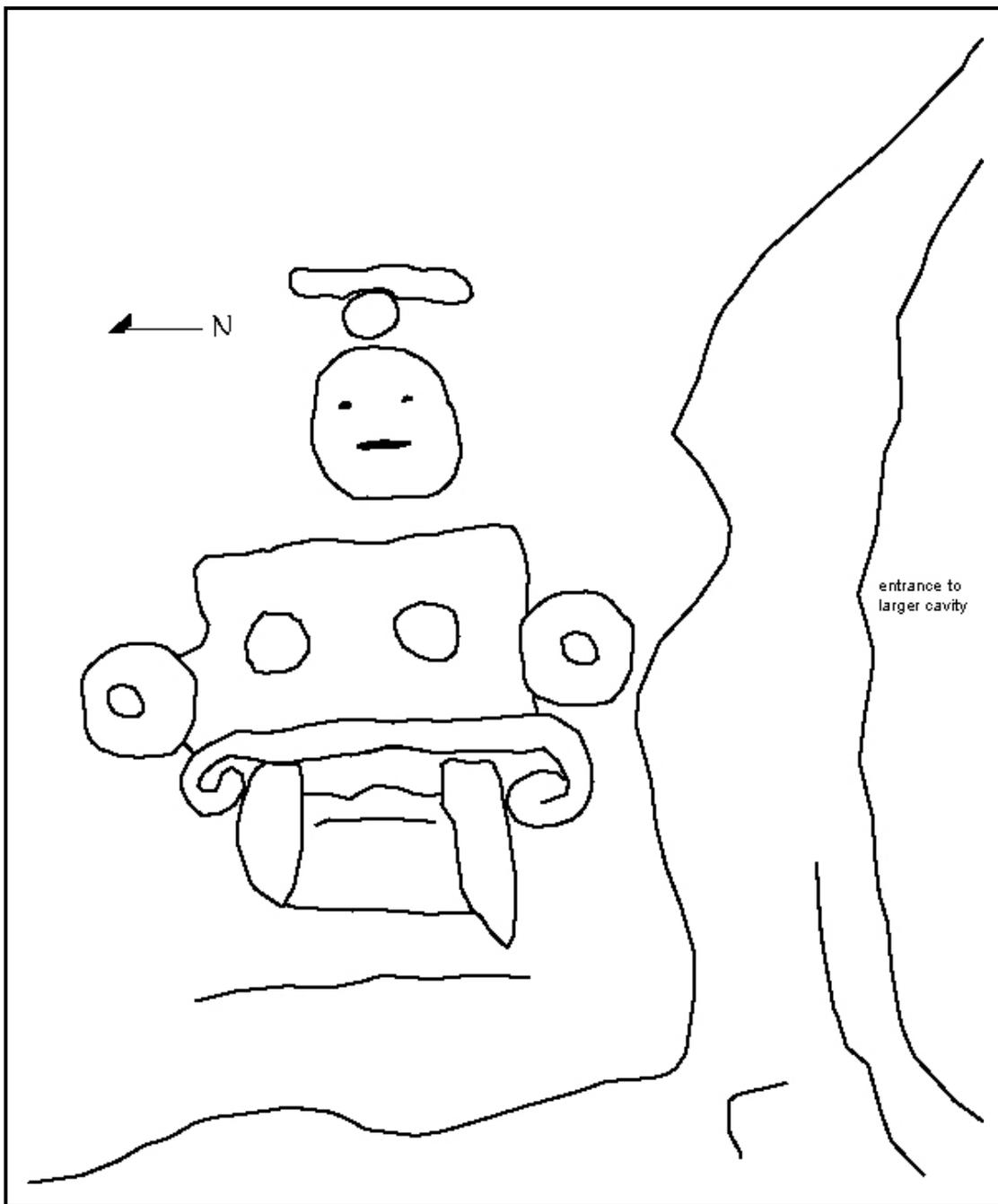


Figure 46. Image of Maya Deity from Chakal Ja'as Cave

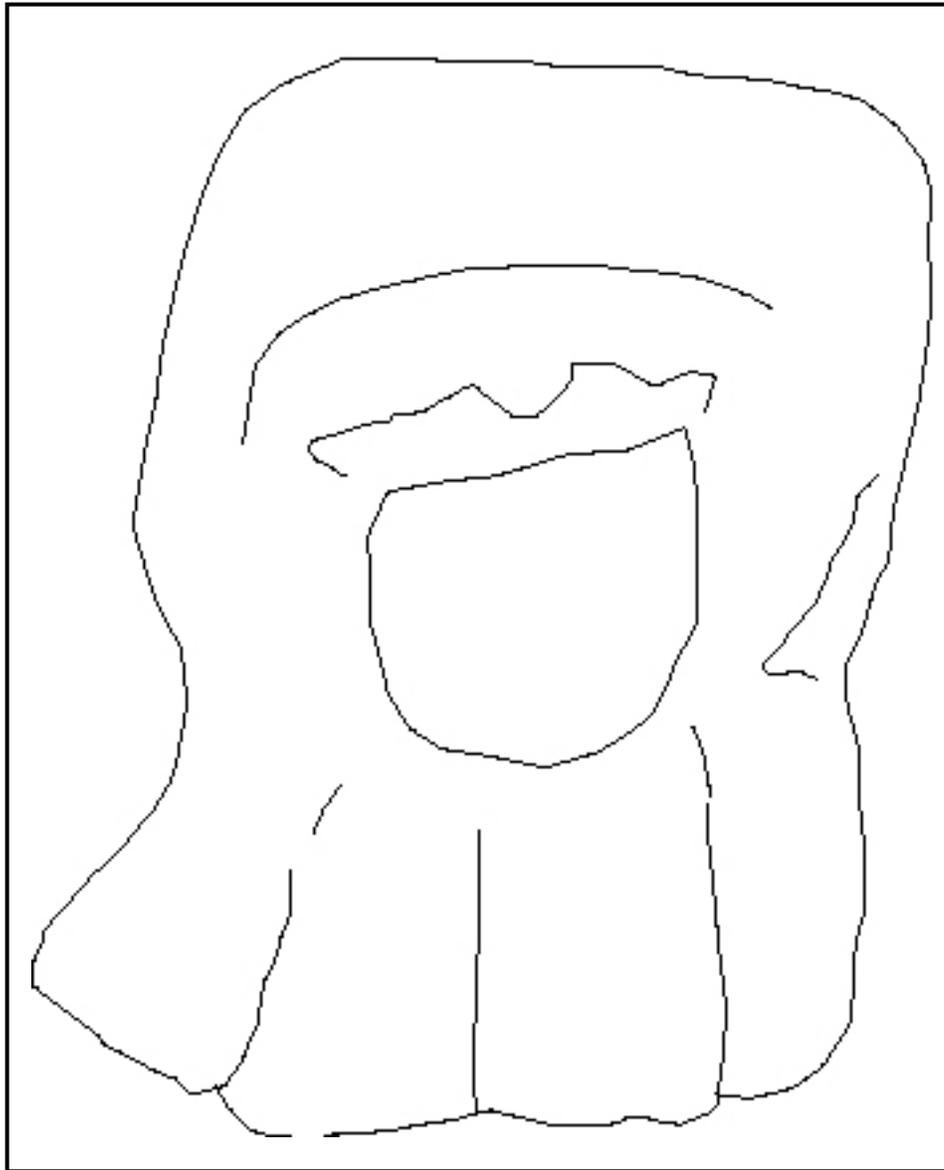


Figure 47. Glyph-like Image from Chakal Ja'as Cave

the corporeal actions of a speaker, often in front of the body (Hanks 1990:91-92). Plank (2003) has recently argued that buildings had their own *ichnal* and possibly caves had it as well.

Local settlement and caves

Brady (1997) and others (Bassie-Sweet 1996; Stone 1995) claim that caves were/are important for site layout, and here we speculate upon whether or not the caves also were important for the local political layout, as Sacalaca is the major site in the vicinity of the other cave sites. However, Sacalaca is not far from the larger site of Ichmul-Xquerol to the north and the even larger (regional center?) of Yo'okop (which so far lack any known caves) to the southeast. Hopefully, the ceramic analysis of both caves and surface sites in the future will give some answers, but for now this is speculation.

Ceramic collection from Aktun Toh in the Yalahau region indicates a long use from the Middle Formative and onwards (Rissolo 2001:68). Late Classic ceramics were found in relatively high frequencies in the caves of the same area but they seem to be lacking on the surface sites of the Yalahau region (Rissolo 2001:345). The caves may have been used for pilgrimages from a dispersed settlement during this period.

Sacbeob, as well as other less formal roads/trails or sightlines, probably united important structures, caves, and participants in certain rituals related to rain and fertility in relation to particular calendar dates (see "The Sacbe Between Xquerol and Ichmul in the Greater Cochuah Regional Context" this volume). The site of El Naranjal in Quintana Roo has *sacbeob* linking major architectural groups to water-related features such as caves, wells and wetlands (Lorenzen 1999:98). Some caves in the Yalahau region, such as Aktun Toh and Aktun Zodz, even had their own interior miniature "causeways" (Rissolo 2001:51, 185). Lorenzen (1999:102) believes the *sacbeob* were used in ritual processions associated with water. In Postclassic Yucatán, *Zuhuy ha*, or virgin water was collected from sacred-cave pools by persons who impersonated the rain god Ch'aak. They carried the water back to the village in a ritual procession that re-enacted Ch'aak's movements across the eastern sky as he sent the rains over the milpa. However, no *sacbe* has yet been found near any of the cave sites in the Sacalaca *ejido*. Less formal roads, such as trails, could have functioned in the same way.

Caves are central in various creation stories in the Maya area. For this reason, caves became important as pilgrimage destinations (Konrad 1991; Turner 1974). Humans were created from corn inside a cave. Thus, the cave was and is like the womb from where life and gender emerged. Among the Kekchi, the mountain has a face, head, and body and the cave is either the mouth or the womb of the Tzuultaq'a (mountain spirit). Every Tzuultaq'a has a gender, name and character. Female Tzuultaq'as tend to live in large mountains with soft contours and caves. These mountains are associated with rain, rivers, lakes or seas. Male mountains have sharper contours and through their caves come lightning, thunder, and earthquakes (Wilson 1995:51-61). It is generally assumed that the Maya temples resembled mountains and may have had similar qualities (Schele and Mathews 1998; Vogt 1969). The caves at Xtojil, Chakal Ja'as, and Sacalaca all have "mountains"/temple mounds relatively near the caves.

Caves and temples during ancient and modern times may thus have symbolized both masculine and feminine principles. For example, the Tzotzil word *ch'en* ("cave") is used to describe a woman's vagina (Stone 1995:79). Vulva motifs are not uncommon in petroglyphs found in caves (López *et al.* 1988; Rissolo 2001; Strecker 1985). Panel A in Pak Ch'en includes an anthropomorphic figure with a face carved into the lower part of the belly (Rissolo 2001:131). Perhaps it resembles a pregnant woman, but then women are usually not allowed inside caves in some contemporary Maya societies (Wilson 1995).

Speleothems in Yucatán are called both *xix ha tunich* ("drip-water stone"), *zuhuy tun* ("immaculate stone") and *yach kak* ("its penis") (Bassie-Sweet 1991:80-86). Breakage of such speleothems has been reported in several caves in the Yalahau region. This practice have been dated to the Late Postclassic (Rissolo 2001:358). Xtojil may have traces of this kind of practice. The ancient Maya most likely viewed the speleothems as petrified water. Speleothems were the source of sacred water and, as dripwater, it resembled semen and could only be collected by men (Lorenzen 2003:67-68).

Since caves were important in the creation they were also important for death. Plenty of cave burials in Belize indicate the importance of caves as ancestral shrines and for rainmaking ceremonies (Gibbs 2000:41). Caves near Oxkutzcab have carvings that some have interpreted as skeletons, although they also resemble larvae. Strecker (1984:26) believes the carvings relate to fertility and reincarnation.

As caves were associated with fertility, water, and ancestors it is no coincidence that we find them depicted in the iconography of the Maya. According to Bassie-Sweet (1991:146), the Vision Serpent (which may have been a centipede) indicated the place where a particular form of bloodletting ritual was conducted, in this case in the caves. The underworld was thus seen as a serpent body. The sun was swallowed by a serpent in the west and it was reborn in the east the morning after (Bassie-Sweet 1991:137).

Probably due to the abundance of caves in the Maya area, there is a widespread belief that underground or celestial *sacbeob* connect various sites, such as between Cobá and Chichén Itzá (Folan 1983:224). There is accordingly a subterranean route from Chichén Itzá to Uxmal and further on to Tenochtitlán (Bolles and Folan 2001:300).

Rainbows came from caves according to Maya cosmology and the phenomena was also related to serpents (Bassie-Sweet 1991:86; Stone 1995:143). The shape of the rainbow, and its occurrence during rainy days, probably makes it an extension in the sky of a subterranean road that ended at the cave opening. The sky-umbilicus called *cuxaan zum* (living rope) or *sacbe* is a blood-filled tube fed the kings with life sustaining powers (Freidel *et al.* 1993:105-106). This tube transported life force between the Underworld, the human world, and the heavens (Bolles and Folan 2001:300).

In any case, caves and roads seem to have been associated with different kinds of fertility in the Maya area. It is possible that in a local area, such as the one around Sacalaca, there may have been caves for different purposes that people had to visit to pay their respect or ask for help either at local caves or through a pilgrimage to other locations.

As caves and *cenotes* were believed to be ancestral places where deities that control agricultural fertility, human fertility, and water lived, they were important locations

were people either settled or made pilgrimages to. Important lineages attached themselves to other sites by will or by force and thus incorporated other caves that needed to be visited, and perhaps aligned with other important caves or sites.

The caves may have represented the boundaries of the settlement or the edges of the world surrounding Sacalaca, which may have incorporated Chakal Ja'as, Xtojil and Santa Cruz. The caves might have been as important in possible sightlines as the visible pyramids, since they were part of the cosmological complex. Only a more thorough and intensive survey than our two days can make this possible.

The Ceramics of Xquerol, Nohcacab, Sacalaca, and Cortada

Dave Johnstone

Ceramic samples were collected at four sites visited by members of the Project during the 2003 field season. Two collection methods were employed: test excavation of plazas with excavated materials passed through a 1-cm mesh screen, and surface collection of exposed ceramics. As the quality of surface collected specimens has been poor, efforts were made to limit collection areas to locations where recent human activity has disturbed portions of the site, exposing ceramics in the process. Such disturbances included road cuts, latrine pits, and fill mining. As the ceramics from these contexts had not been long exposed to surface weathering and erosion, the percentage of identifiable sherds was higher than collections of long exposed sherds. A total of 2,049 excavated and 213 surface sherds were collected. All ceramics were subjected to Type-Variety analysis (Smith *et al.* 1960).

At Xquerol (Figure 2), examples of ceramic types representative of time periods from the Middle Formative through the Postclassic were recovered (Table 1). The vast majority of those identified dated to the Late Formative and Terminal Classic periods. Middle Formative ceramics were found admixed in lots dating to later periods. The Late Formative sherds were more numerous, and it was possible to identify both early and late facets of this period. With the exception of a few worn sherds mixed into construction fill from later periods, neither the Early Classic nor the Late Classic periods were represented at Xquerol. Xquerol's Operation 1 did however yield abundant Terminal Classic sherds, both from construction fill and from collapse debris. This included both Puuc and Chichén Slate wares, though the latter were numerically insignificant. The Postclassic sherds from the site were all associated with post-construction events. The abundance of Chen Mul incensario fragments may indicate a nearby locus of ritual activity from this period.

The ceramic picture at nearby Nohcacab (Figure 4) was quite similar, with ceramic types spanning the Middle formative through the Postclassic periods recovered (Table 2). The Middle Formative sample was small, but contained a functionally complete assemblage, with a variety of forms (Figure 48), and representatives of four Ceramic Groups. The Late Formative period was represented by a slightly larger sample, but only containing four types. Like Xquerol, Nohcacab's Early and Late Classic periods are only represented by a few sherds mixed into the construction fill of later periods. The Terminal Classic period was well represented in construction fill, with ten types identified, including Dzitas Slate ware (Figure 49) and a sherd of Silho Fine-Orange ware. The Postclassic was represented entirely by Chen Mul modeled *incensario* fragments. This was expected, as Operation 1 was located adjacent to a Postclassic masonry altar.

With two test pits, Sacalaca (Figure 16) should have produced the largest ceramic sample, but Operation 2 was not very deep, while Operation 1 was largely dry core fill. Nevertheless, the site yielded sherds representative of all time periods from the Middle Formative through the Postclassic (Table 3). The Middle Formative sherds (Figure 48) are less numerous than at the previously mentioned sites, but this was

Table 1. Ceramics from Xquerol, CRAS 2003

<u>Type</u>	1/1/1 Op/Lev /Lot	1/2/1	1/2/2	1/3/1	1/4/1	1/4/2	1/5/1	Total	S1E1-1
Achiotes Unslipped								0	
Chunhinta Black v. Ucu				3	3		2	8	
Nacolal Incised								0	
Joventud Red	2			1				3	
Desvario Chamfered								0	
Guitarra Incised								0	
Dzudzuquil Cream to Buff	1			10	2	1	3	17	
Tumben Incised								0	
Chancenote Unslipped		1	1		1		2	5	
Tancah Unslipped								0	
Xanaba Red (LF)					1			1	
Dzalpach Composite								0	
Huachinango					2			2	
Sierra Red	5		2	27	5	1	10	50	
Laguna Verde Incised								0	
Ciego Composite								0	
Lagartos Punctate								0	
Repasto Black on Red								0	
Flor Cream								0	
Mateo Red on Cream								0	
Polvero Black				1				1	
Saban Unslipped								0	
Yaxcaba Striated								0	
Xanaba Red	4							4	1
Caucel Trickel on Red	2							2	
Tituc Orange Polychrome v. Tituc								0	
Balanza Black	1							1	
Lucha Incised	1							1	
Aguila Orange								0	
Dos Arroyos Orange Polychrome			1					1	
Cetelac Fiber Tempered								0	
Elote Impressed								0	
Yalchak Striated								0	
Maxcanu Buff				1				1	
Hunabchen Red								0	

Table 1. Ceramics from Xquerol, CRAS 2003
(continued)

<u>Type</u>	1/1/1 Op/Lev /Lot	1/2/1	1/2/2	1/3/1	1/4/1	1/4/2	1/5/1	Total	S1E1-1
Kanachen Black								0	
Tituc Orange Polychrome v. Tituc			1					1	
Tituc Orange Polychrome v. Bandas								0	
Dos Caras Striated	1							1	
Sacalaca Striated	2							2	
Encanto Striated v. Sacna	2							2	
Arena Red								0	
Batres Red								0	
Lakin Impressed								0	
Muna Slate (LC)								0	
Sacalum Black on Slate (LC)								0	
Saxche Orange Polychrome		2						2	
Chum Unslipped								0	
Yokat Striated	117	13	4	4				138	4
Muna Slate	160	30	9	9	3			211	3
Sacalum Black on Slate	13	2	1					16	
Tekit Incised	22	1		2				25	
Teabo Red	3							3	1
Ticul Thin Slate								0	
Dzitas Slate	3							3	
Balantun Black on Slate	1							1	
Navula Unslipped								0	
Yacman Striated								0	
Chen Mul Modeled	33			1				34	1
Mama Red	3							3	
Unidentified	144	16	5	51	24	1	31	272	
Total sherds	520	66	24	109	41	3	48	811	10

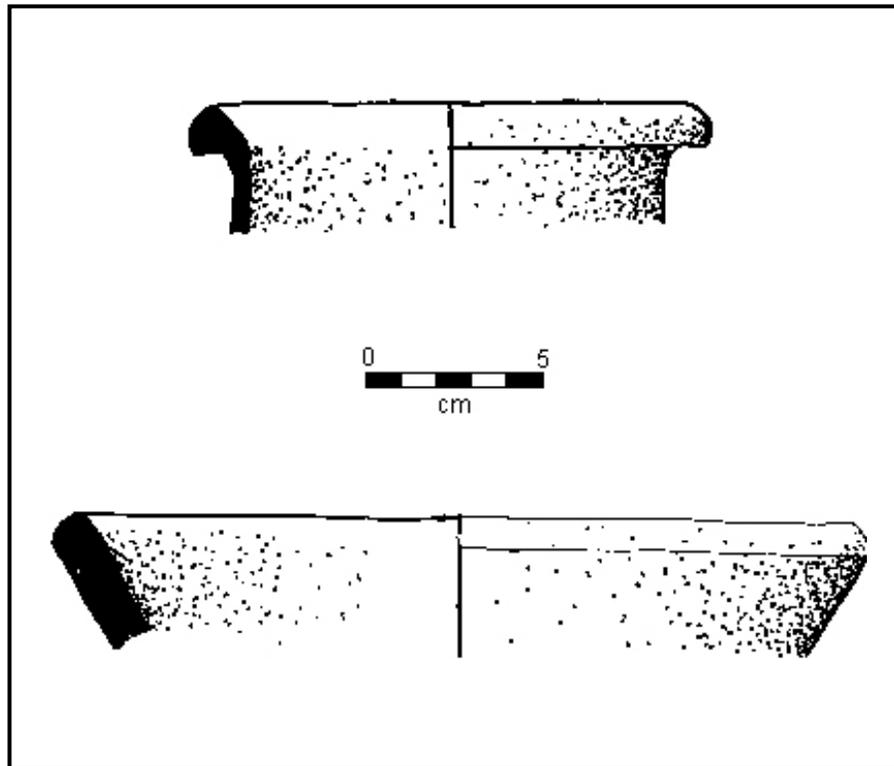
Table 2. Ceramics from Nohcacab, CRAS 2003

<u>Type</u>	1/1/1 Op/Lev /Lot	1/1/2	1/1/3	1/2/1	1/3/1	Total	S1E1-1
Achiotes Unslipped					6	6	
Chunhinta Black v. Ucu	5	2	4	4	8	23	
Nacolal Incised			1		1	2	
Dzocobel Red on Black	5					5	
Joventud Red	2				9	11	
Desvario Chamfered						0	
Guitarra Incised	1				2	3	
Dzudzuquil Cream to Buff				8	13	21	
Majan Red on Cream to Buff					2	2	
Tumben Incised	3				5	8	
Chancenote Unslipped	1		1	7	3	12	
Tancah Unslipped						0	
Xanaba Red (LF)						0	
Dzalpach Composite						0	
Sierra Red	40	6	29	9	14	98	
Laguna Verde Incised	6			1	4	11	
Ciego Composite						0	
Lagartos Punctate						0	
Repasto Black on Red						0	
Flor Cream						0	
Mateo Red on Cream						0	
Polvero Black	2		1	1	2	6	
Saban Unslipped						0	
Yaxcaba Striated						0	
Xanaba Red		1				1	
Caucel Trickle on Red						0	
Tituc Orange Polychrome v. Tituc						0	
Balanza Black	3					3	
Lucha Incised	1					1	
Aguila Orange						0	
Dos Arroyos Orange Polychrome						0	
Cetelac Fiber Tempered						0	
Elote Impressed						0	
Yalchak Striated						0	
Maxcanu Buff	1					1	
Hunabchen Red						0	

Table 2. Ceramics from Nohcacab, CRAS 2003

(continued)

<u>Type</u>	1/1/1 Op/Lev /Lot	1/1/2	1/1/3	1/2/1	1/3/1	Total	S1E1-1
Kanachen Black						0	
Tituc Orange Polychrome v. Tituc						0	
Tituc Orange Polychrome v. Bandas						0	
Dos Caras Striated						0	
Sacalaca Striated						0	
Encanto Striated v. Sacna						0	
Arena Red	2					2	
Batres Red						0	
Lakin Impressed						0	
Muna Slate (LC)	2					2	
Sacalum Black on Slate (LC)						0	
Saxche Orange Polychrome						0	
Chum Unslipped						0	
Yokat Striated	31	2	2			35	
Muna Slate	54	5	14			73	5
Sacalum Black on Slate	2					2	
Tekit Incised	1					1	
Teabo Red	12					12	
Becal Incised			1			1	
Ticul Thin Slate						0	
Dzitas Slate	9					9	
Balantun Black on Slate	13					13	
Chacmay Incised	2					2	
Kilikan Composite var. Cream Slip	1					1	1
Navula Unslipped						0	
Yacman Striated						0	
Chen Mul Modeled	25					25	
Mama Red						0	
Unidentified	91	16		34	30	171	11
Total sherds	315	32	53	64	99	563	17



**Figure 48. Middle Formative Ceramics:
(top) Joventud Red Jar and (bottom) Dzocobel Red-on-Black Bowl**

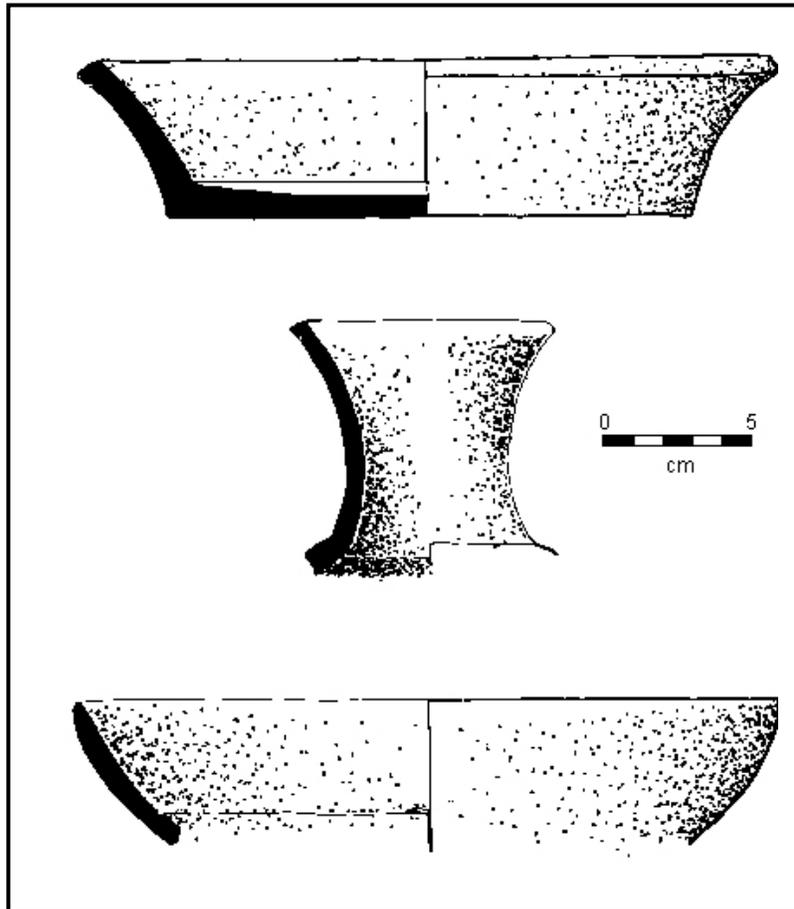


Figure 49. Terminal Classic Ceramics: (top) Muna Slate Bowl, (middle) Dzitas Slate Jar, and (bottom) Chacmay Incised Grater Bowl

Table 3. Ceramics from Sacalaca, CRAS 2003

<u>Type</u>	1/1/1 Op/Lev /Lot	1/1/2	1/2/1	1/3/1	1/3/2	1/4/1	1/4/2	1/5/1
Achiotes Unslipped								
Chunhinta Black v. Ucu								6
Nacolal Incised				1				
Joventud Red								2
Desvario Chamfered								
Guitarra Incised								
Dzudzuquil Cream to Buff							3	4
Tumben Incised								
Chancenote Unslipped				13	1			
Tancah Unslipped								
Xanaba Red (LF)								
Dzalpach Composite								
Sierra Red		1		12	3	4	5	8
Laguna Verde Incised						1	1	1
Ciego Composite								
Lagartos Punctate								
Repasto Black on Red								
Flor Cream								
Mateo Red on Cream								
Polvero Black								
Saban Unslipped								
Yaxcaba Striated				10	2			
Xanaba Red				21	2			
Caucel Trickle on Red				3				
Tituc Orange Polychrome v. Tituc								
Balanza Black								
Lucha Incised								
Aguila Orange		2		2				
Dos Arroyos Orange Polychrome				4	6			
Cetelac Fiber Tempered								
Elote Impressed								
Yalchak Striated								
Maxcanu Buff				1				
Hunabchen Red								

Table 3. Ceramics from Sacalaca, CRAS 2003

(continued)

<u>Type</u>	1/1/1 Op/Lev /Lot	1/1/2	1/2/1	1/3/1	1/3/2	1/4/1	1/4/2	1/5/1
Kanachen Black								
Tituc Orange Polychrome v. Tituc				3				
Tituc Orange Polychrome v. Bandas						1		
Dos Caras Striated						1		
Sacalaca Striated								
Encanto Striated v. Sacna								
Arena Red								
Batres Red								
Lakin Impressed								
Muna Slate (LC)								
Sacalum Black on Slate (LC)								
Saxche Orange Polychrome								
Chum Unslipped								
Yokat Striated	5	12	2	9	12			
Muna Slate	14	16		5	10		1	
Sacalum Black on Slate	1	2			1			
Tekit Incised		2						
Teabo Red	2	3	1					
Ticul Thin Slate		2						
Balantun Black on Slate								
Navula Unslipped								
Yacman Striated	5							
Chen Mul Modeled	12	17						
Mama Red	1							
Unidentified	20	27	2	68	23	6	22	7
Total sherds	62	82	5	152	62	14	41	16

Table 3. Ceramics from Sacalaca, CRAS 2003

(continued)

<u>Type</u>	2/1/1	2/2/1	Total	S10E2-1	S5E5-1/1	S5E5-1/2	S5E5-1/3
Achiotes Unslipped			0				
Chunhinta Black v. Ucu			0				
Nacolal Incised			0				
Joventud Red			0				
Desvario Chamfered			0				
Guitarra Incised			0				
Dzudzuquil Cream to Buff			0			2	1
Tumben Incised			0				
Chancenote Unslipped	1		1				1
Tancah Unslipped			0				
Xanaba Red (LF)	1		1				
Dzalpach Composite			0				
Sierra Red	10	4	14	2		6	2
Laguna Verde Incised		2	2				
Ciego Composite			0				
Lagartos Punctate	1		1				
Repasto Black on Red			0				
Flor Cream			0				
Mateo Red on Cream			0				
Polvero Black			0				
Saban Unslipped			0				
Yaxcaba Striated			0				
Xanaba Red			0				
Caucel Trickle on Red			0				
Tituc Orange Polychrome v. Tituc			0				
Balanza Black			0				
Lucha Incised			0				
Aguila Orange			0				
Dos Arroyos Orange Polychrome			0				
Cetelac Fiber Tempered			0				
Elote Impressed			0				
Yalchak Striated			0				
Maxcanu Buff			0				
Hunabchen Red			0				

Table 3. Ceramics from Sacalaca, CRAS 2003
(continued)

<u>Type</u>	2/1/1	2/2/1	Total	S10E2-1	S5E5-1/1	S5E5-1/2	S5E5-1/3
Kanachen Black			0				
Tituc Orange Polychrome v. Tituc			0				
Tituc Orange Polychrome v. Bandas			0				
Dos Caras Striated			0				
Sacalaca Striated	1		1				
Encanto Striated v. Sacna			0				
Arena Red			0				
Batres Red			0				
Lakin Impressed			0				
Muna Slate (LC)			0	1			
Sacalum Black on Slate (LC)			0				
Saxche Orange Polychrome	1		1				
Chum Unslipped			0				
Yokat Striated	72		72	55		2	
Muna Slate	26	1	27	21		5	
Sacalum Black on Slate			0	3			
Tekit Incised			0				
Teabo Red	12	4	16	5		1	
Ticul Thin Slate			0			1	
Balantun Black on Slate			0				
Navula Unslipped			0				
Yacman Striated			0				
Chen Mul Modeled	1		1				
Mama Red	1		1				
Unidentified	83	20	103	26	2	3	4
Total sherds	210	31	241	113	11	11	8

expected, since Sacalaca's Operation 1 was terminated before reaching bedrock. Late Formative sherds were present in contemporaneous construction fill, and mixed within construction fill of later periods. Like the previously mentioned sites, few types were encountered for this period, with Sierra Red being by far the most frequently represented. Sacalaca provided the best sample of ceramics from the Early Classic period of all the sites tested. This material was incorporated within the fill of Terminal Classic construction. For a small sample, it is relatively heterogeneous, with six types and eight varieties identified. The same cannot be said for the Late Classic period, with only four sherds recovered. The Terminal Classic period is well represented ceramically, with over half of the identified sample dating to this period. These materials were recovered from Terminal Classic construction fill as well as collapse levels. The Postclassic ceramics were recovered exclusively from collapse levels and were, like other sites in the study area, dominated by sherds of Chen Mul *incensarios*.

The last site for which we collected ceramic data was Cortada (Figure 23). Unlike the other sites for which we recovered data, the sample at Cortada was composed exclusively from surface collected materials. As a result, the percentage of identifiable sherds is rather low, owing to their poor state of preservation (Table 4). Despite this, there is some interesting spatial patterning. The sides of the principle structure yielded Terminal Classic ceramics, while the summit provided an exclusively Postclassic sample. This might suggest that the mound was built in the Terminal Classic, and served as a base for rituals during the Postclassic (see "Small Postclassic Shrines at Nohcacab" this volume).

At this early juncture, I am hesitant to offer a regional summary given the preliminary nature of our work outside of Yo'okop. The results of our test pits there (Johnstone 2001 and 2002a) showed that construction activities tended to be quite localized, resulting in individual test pits often lacking one or more periods, while the site as a whole showed continuous occupation. This is likely the case at Sacalaca, where we have essentially no ceramic data for the Late Classic period, but where at least some structures (Figures 34a and 34b) indicate Late Classic construction at parts of the site not yet sampled.

With the above proviso in mind, it is interesting to examine the results from each site in a regional context (Table 5). All excavated sites show occupation during the Formative, as well as during the Terminal Classic and Postclassic Periods. These occupations are seemingly separated by occupational hiatuses for much of the Early Classic, and all of the Late Classic periods. Cortada did not yield evidence of occupation earlier than the Terminal Classic, a condition shared by the Becanchen regional survey (Velazquez Morlet and Lopez de la Rosa 1989), which also relied on surface collections. I would expect in both cases that, should test excavations be carried out, evidence of earlier occupations would be forthcoming. If the apparent hiatus is a real event, rather than an artifact of sampling, then we must ask where did the population go? The obvious answer would be to the larger nearby regional centers of Yo'okop and Ichmul, both of which were occupied through this time (Stromsvik *et al.* 1955). The cause of this shift in settlement remains open to speculation.

The placement of a site's ceramic assemblage within a larger regional framework (the ceramic sphere) is restricted by a number of factors: the sample size of the

Table 4. Ceramics from Cortada, CRAS 2003

<u>Type</u>	Summit	Roadcut	S.slope
Achiotes Unslipped			
Chunhinta Black v. Ucu			
Nacolal Incised			
Joventud Red			
Desvario Chamfered			
Guitarra Incised			
Dzudzuquil Cream to Buff			
Tumben Incised			
Chancenote Unslipped			
Tancah Unslipped			
Xanaba Red (LF)			
Dzalpach Composite			
Sierra Red			
Laguna Verde Incised			
Ciego Composite			
Lagartos Punctate			
Repasto Black on Red			
Flor Cream			
Mateo Red on Cream			
Polvero Black			
Saban Unslipped			
Yaxcaba Striated			
Xanaba Red			
Caucel Trickel on Red			
Tituc Orange Polychrome v. Tituc			
Balanza Black			
Lucha Incised			
Aguila Orange			
Dos Arroyos Orange Polychrome			
Cetelac Fiber Tempered			
Elote Impressed			
Yalchak Striated			
Maxcanu Buff			
Hunabchen Red			

Table 4. Ceramics from Cortada, CRAS 2003
(continued)

<u>Type</u>	Summit	Roadcut	S.slope
Tituc Orange Polychrome v. Tituc			
Tituc Orange Polychrome v. Bandas			
Dos Caras Striated			
Sacalaca Striated			
Encanto Striated v. Sacna			
Arena Red			
Batres Red			
Lakin Impressed			
Muna Slate (LC)			
Sacalum Black on Slate (LC)			
Saxche Orange Polychrome			
Chum Unslipped			
Yokat Striated			1 6
Muna Slate			1
Sacalum Black on Slate			
Tekit Incised			
Teabo Red			
Ticul Thin Slate			
Balantun Black on Slate			
Navula Unslipped			
Yacman Striated			
Chen Mul Modeled		26	
Mama Red			
Unidentified			7 2
Total sherds		26	8 9

Table 5. Cochuah Ceramic Complexes

<u>Period</u>	<u>Complex</u>				
	Xquerol	Nohcacab	Sacalaca	Cortada	Yo'okop
Postclassic	<i>Quech</i>	<i>Tsu'ub</i>	<i>Kuk</i>	<i>Sina'an</i>	<i>Kauil</i>
Terminal Classic	<i>A'ayin</i>	<i>Ma'ax</i>	<i>Ts'uuyi</i>	<i>Am</i>	<i>Balam Kin</i>
Late Classic					<i>Chac</i>
Early Classic			<i>K'olonte'</i>		<i>Ixchel</i>
Late Formative	<i>Tolok</i>	<i>Kitam</i>	<i>Ch'oom</i>		<i>Pahuatun</i>
Middle Formative	<i>Kaan</i>	<i>Chi'ik</i>	<i>Moo</i>		<i>Izamna</i>

complex in question, the context from which the sample was obtained, the nature of the ceramic collection methodology, and the nature of available comparative material. The first problem is the easiest to deal with. In order to make samples more representative (collector's curve bias) only complexes containing over 100 identifiable sherds were considered. This consideration effectively ruled out the majority of complexes in the study area. Context is an important consideration, as certain locations might over-represent certain ceramic types (functional bias). Given the nature of our excavations in plaza fill, this is not considered to be a problem, as the majority of ceramics can be considered to be in secondary context. Collection method ruled out consideration with some sites, as they employed a different collection strategy, particularly surface collection. This method introduces significant variation (observer bias) between collections based on individual decisions regarding the collection, or non-collection, of individual sherds. For this reason, it is not possible to directly compare the composition of the Cortada complexes with other sites within the study area. For comparisons to be made with the ceramic composition of other sites, those sites must first have been subjected to archaeological research, second that research must be directly comparable (using the same method and degree of analysis), and lastly the results of this analysis must be made available for direct comparison. For example, the Uaymil survey is not available for comparison, as the data have only been presented in preliminary form (Fry 1973 and 1987).

These problems made it difficult to assign Yo'okop to ceramic spheres (Johnstone in press), and also apply to the ceramics from the sites under consideration here. For the Middle Formative, no sites have samples sufficiently large to confidently assign them to a ceramic sphere. Only Nohcacab has a sufficiently large sample for consideration, and it can be placed, along with Yo'okop, in the Chicanel ceramic sphere. This sphere is composed of complexes in which Sierra Red is the most frequently occurring ceramic type. No assignments can be made for the Early Classic or Late Classic periods owing to small sample sizes. For the Terminal Classic, Xquerol, Nohcacab and Sacalaca can be included, along with Yo'okop, in the Cehpech ceramic sphere. This sphere includes sites with complexes dominated by Puuc unslipped and Puuc Slate wares. At Nohcacab, the presence of Dzitas Slate wares as an important minority ware suggests closer ties to Chichén Itzá than at other sites in the region. The nature of this relationship is certainly worthy of future investigation. None of the sites investigated this season had large enough samples from the Postclassic to assign them to a ceramic sphere, though the presence of significant Postclassic architecture at Nohcacab makes it likely that sufficiently large samples should be forthcoming from that site with further excavation.

Cochuah Regional Archaeological Survey (CRAS) 2003: Small Finds Data: Sacalaca, Nohcacab, and Xquerol

Christopher Lloyd

Previous field seasons at Yo'okop yielded few non-ceramic artifacts. During the 2002 field season, forty non-ceramic artifacts were recovered, including two projectile points, and five obsidian blade fragments. Proportionally, the small test pits and relatively brief examination of their contents conducted during the regional survey of the Cochuah region yielded significantly more non-ceramic artifacts than the excavations and collections at Yo'okop had (Shaw *et al.* 2002). A total of ten such artifacts were excavated or collected from the surface at the sites of Sacalaca, Nohcacab, and Xquerol (Figure 1). These non-ceramic “small finds” included chert cores, chert block shatter, a chert projectile point, a perforated shell pendant, and an obsidian micro-blade (Table 6 and Figure 50).

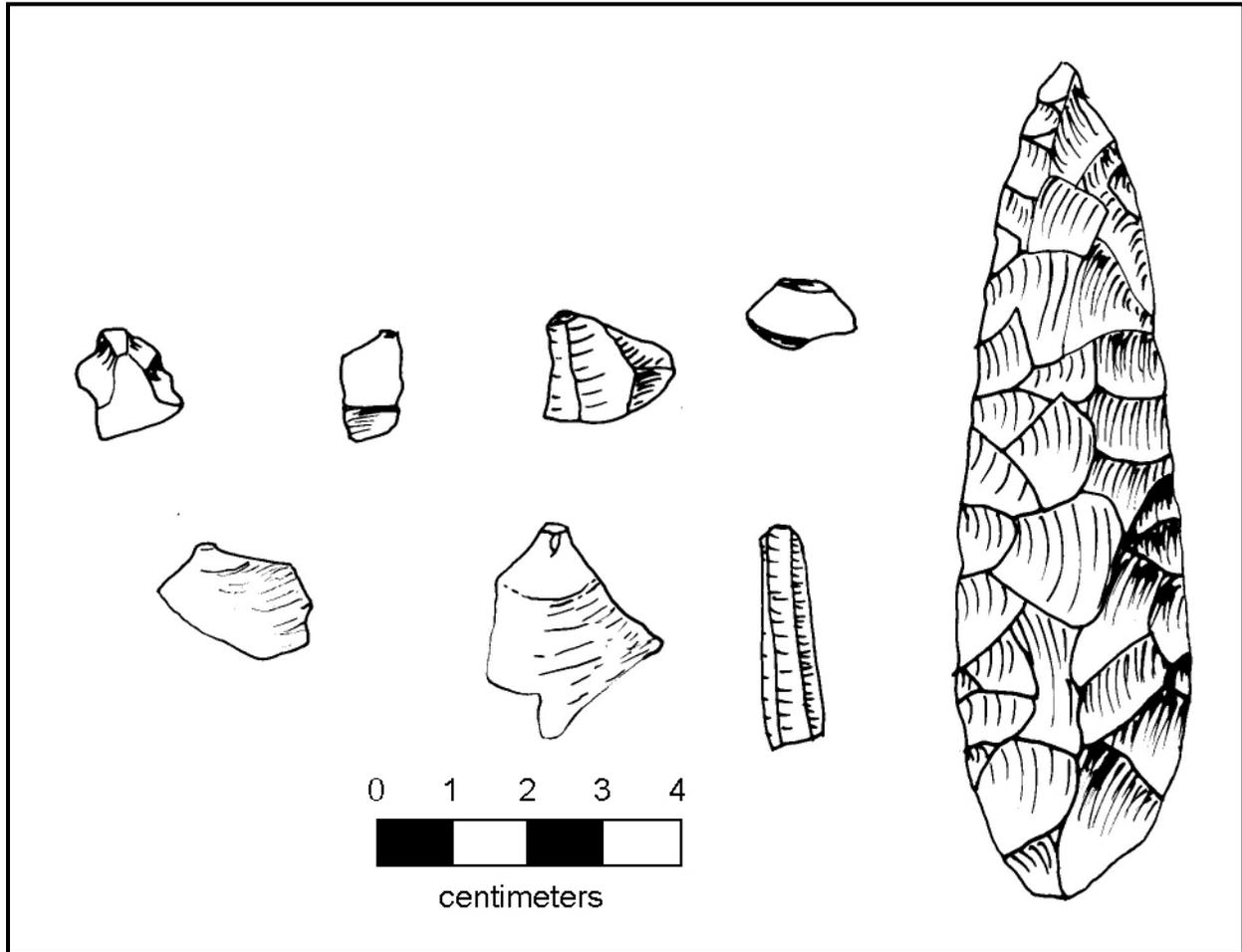
The sites from which these non-ceramic artifacts were recovered are located to the northwest of Yo'okop (Figure 1). Yo'okop is hypothesized to be a regional center for the Cochuah region. The sites of Sacalaca, Nohcacab, and Xquerol are significantly smaller than Yo'okop, and in most cases the sites are not as well preserved, in part due to their geographic relation to modern-day pueblos.

CRAS requested and received permission to excavate two test pits per *ejido* in the study area; Xquerol and Nohcacab are both located in the *ejido* of Xquerol, so one unit was placed in each site. All of the non-ceramic artifacts recovered, except for a solitary chert projectile point, were found within these test pits. The chert projectile point was recovered from a surface collection at Nohcacab. The projectile point was found in a presumed midden, identified by an abnormal amount of surface artifacts. The midden was adjacent to a Postclassic structure (Structure S3E1-2). The haft on the chert projectile point was broken. This lithic doesn't appear to have been reworked. Chert, not being from the northern Yucatan area, was a valuable commodity. It seems plausible that this projectile point was used toward the end of the occupational sequence at Nohcacab, and that the site was abandoned soon thereafter, otherwise such a valuable piece of chert would have been reworked.

Eighty percent of the “small finds” were found at Nohcacab within the site's Operation 1. Operation 1 was a 2x2 m test pit situated behind a Terminal Classic, Chichén “L” style, double wall lined building (Structure N1E1-8; Figure 14); and adjacent to a Postclassic altar (see “Nohcacab's Operation 1” this volume). These structures were all situated on a raised platform, constructed of dry core fill. One can presume, based on the type and the size of the surrounding architecture, that this was probably an elite residence. The scarcity of quality raw materials might be related to the Maya of this region using everything down to the smallest fragment of important, non-local materials such as chert, obsidian, and other external resources. Obsidian was obtained “near present-day Pachuca, north of Mexico City; from Orizaba Volcano, near present-day Puebla; and from as far south as El Chayal, near Guatemala City” (Adams 1991: 74). Furthermore, “...deposits of obsidian in the highlands of Guatemala were accessible to lowland peoples through a trade network” (Adams 1991: 124).

Table 6. Non-ceramic Artifacts from the CRAS 2003 Season

Artifact	Width (cm)	Length (cm)	Thickness (cm)	Site	Op/Lev /Lot	Munsell Color
chert core	1.70	3.40	1.50	Nohcacab	1/1/3	5 YR 4/1 (dark gray); 7.5 YR 5/4 (weak red)
perforated shell pendant	1.70	2.60	0.25	Nohcacab	1/1/3	7.5 YR 7/2 (pinkish gray)
chert spearhead (projectile point)	3.20	11.30	0.90	Nohcacab	surface	10 YR 3/2 (very dark grayish brown)
obsidian micro-blade	0.90	3.60	0.15	Nohcacab	1/1/1	10 YR 4/1 (dark gray)
chert flake	1.30	1.90	0.80	Nohcacab	1/1/1	5 YR 4/1 (dark gray); 7.5 YR 5/4 (weak red)
chert bipolar core fragment	1.90	2.20	0.70	Nohcacab	1/1/1	7.5 YR 4/3 (brown)
chert bipolar core fragment	2.0	2.80	1.50	Nohcacab	1/1/1	7.5 YR 4/2 (brown); 7.5 YR 2.5/1 (black)
chert block shatter	1.10	1.60	0.80	Sacalaca	1/5/1	7.5 YR 6/1 (gray); 7.5 YR 2.5/1 (black)
chert block shatter	1.40	1.70	1.20	Sacalaca	1/5/1	10 YR 6/4 (light yellowish brown); 5 YR 3/4 (dark reddish gray)



**Figure 50. Non-ceramic Artifacts from the CRAS 2003 Season:
(top) Bipolar cores, (bottom) Flakes and Blades, and (right) Biface**

The context in which the artifacts were found may have also played an important role in the limited number of lithics excavated. All of our operations were located in areas of presumed high traffic. Sharp flakes and other refuse adjacent to one's home or lying about a public, administrative center, such as Structure N1E1-8, could be potentially dangerous. Middens were a clear alternative for disposing of dangerous, sharp refuse. Finding such artifacts was somewhat unexpected.

A small, banded, transparent obsidian micro-blade fragment was recovered from Operation 1, Level 1, Lot 1 at Nohcacab. The microblade fragment may have been utilized in bloodletting, associated with the Postclassic altar to the southwest. The obsidian microblade is symmetrically beveled on one side while the other side remains completely flat. The proximal end contains the bulb of percussion; the distal end is missing. This obsidian microblade fragment was most likely deposited during the Postclassic. The occurrence of Chen Mul Modeled sherds, a Postclassic ceramic, was the latest ceramic excavated in association with the obsidian microblade. In addition to the obsidian microblade, a chert flake and two chert bipolar core fragments were all found within the same level. This dark gray and weak red (5 YR 4/1, 7.5 YR 5/4) chert flake is very similar in coloring to the chert core found in Operation 1, Level 1, Lot 3. Perhaps this flake came from the same core. This might imply either contamination between the levels, or merely a similar source of chert. It is possible that there was disturbance to the surrounding soil during the construction of the Terminal Classic Structure N1E1-8, or the presence of burrowing animals. The two chert cores recovered appear significantly different from one another. The smaller of the two has many different bands of color, texture, and opacity; while the larger of the two is composed of much darker brown pigments.

Found within Operation 1, Level 1, Lot 3 was a small, broken, perforated shell pendant, probably made of conch. The sides that aren't broken appear beveled. The shape of the piece is roughly triangular, with obvious pieces missing. If the widest end is positioned downward, there is a perforation through the left-hand corner. This hole is presumably for suspending the shell from a cord and/ or attaching it to another material. Nohcacab is roughly 130 km inland from the coast. Obtaining shell this far inland would have required a trade network. The discovery of shell, often a possession of the affluent, seems to coincide with the grandeur of the surrounding architecture. Terminal Classic Muna Slate ceramics were the latest ceramic excavated from Operation 1, Level 1, Lot 3. Also found within Operation 1, Level 1, Lot 3 was a small chert core. The chert core is probably left over from the flaking of artifacts such as projectile points, scarpers, or possibly agricultural tools. According to Killion (1992) when agricultural land was close to residential areas often the refurbishing, maintenance, and flaking of tools occurred at the residence. At Nohcacab, residential areas are quite close to depressions in the land that may have been used for agriculture. It is reasonable to assume that the chert flakes, and block shatter are residual from the flaking of agricultural implements (Killion 1992: 211).

Xquerol and the site north of Sacalaca, Cortada, yielded no small finds. However, only surface collections were conducted at Cortada. In addition to Cortada, the *ejido* of Sacalaca contains a number of other archaeological sites. In 2003, two 2x2m test pits were excavated within the site of Sacalaca. The first, a test pit situated in front of Structure S5E5-2 was Operation 1 (see "Operation 1 at Sacalaca" this volume).

Operation 1, Level 5, Lot 1 yielded two pieces of chert block shatter. Each piece of chert block shatter was a different color, although they were roughly the same size. There were few ceramics recovered from this lot (Table 1). Laguna Verde Incised, a Late Formative ceramic, was the latest ceramic type excavated from level 5. Littering the base of Structure S5E5-2 with sharp chert block shatter seems careless, especially if the building was a public center. Perhaps stone masons used chert flakes derived from this block shatter to help cut/ carve limestone blocks used in the construction of Structure S5E5-2.

There are similarities between the non-ceramic artifacts collected during the 2003 field season and those from the previous Yo'okop field seasons. Within their relatively small samples, both field seasons yielded high frequencies of chert flakes and bipolar cores. Chert cores from both samples appear to have been utilized to the fullest extent. The intense utilization of chert implies it was a highly valued and scarce resource. Yo'okop is a significantly larger site than Nohcacab, Sacalaca, or Xquerol. The intense utilization of chert at Yo'okop suggests that, despite its size, Yo'okop too had a difficult time obtaining this valuable resource. Perhaps trade to the Cochuah region was limited due to politics, distance, or the lack of valued items for reciprocal trade. The obsidian blade fragments all appear similar in design, symmetrically beveled on one side, while the other is flat; all are roughly the same size.

The shell pendant and chert core from Nohcacab appear to date to Terminal Classic occupation. The obsidian microblade, chert flake, and bipolar chert core fragments appear to be Postclassic artifacts. Chert and obsidian are not local to the northern Yucatan Peninsula and were most likely brought to the area through a trade network; chert can be obtained from northern Belize. The individuals that acquired these valuable marine and mineral resources probably belonged to the elite class. Most of the recovered chert pieces are different in texture and coloration from one another, perhaps the products of many different localities, and/ or geological events. The pieces of chert block shatter were most likely a last ditch effort to salvage useful pieces of chert from a core, through smashing the remains. The excavation of chert flakes and block shatter from what appear to be areas of high traffic seem peculiar. Such sharp items would more likely have been discarded in a low traffic location to avoid injury. This indiscriminate discarding of refuse could be evidence of chaos, when proper disposal of refuse would be less important. This trend seems to be more prevalent toward the end of the occupational sequence, perhaps coinciding with a decrease in population. The majority of the artifacts excavated were flakes, cores, and block shatter.

The Cochuah region is located a significant distance from the sources of many raw materials such as chert, obsidian, and shell. Trade between other larger localities and the small, probably non-influential sites of Sacalaca, Nohcacab and Xquerol was likely rare. Consequently, raw materials uncommon to the Cochuah region were used down to the last nubbin.

Childbirth Practices in Saban and Huay Max: The Coexistence of Midwifery and Biomedical Care

Veronica Miranda

The communities of Saban and Huay Max are found along Highway 295, in the state of Quintana Roo. They are located approximately 85 km south-southwest of the city of Valladolid. The archaeological site of Yo'okop is situated 12 km south from Saban's town square. It belongs to the *ejido*³ of Saban. At the time of this research there was an ongoing American archaeological investigation taking place in the region.

Saban and Huay Max are rural, Yucatec Maya communities where the main economic activity is subsistence agriculture supplemented by migrant wages or other wage labor, like participation in the archaeological project or running a small business. The population of Saban in 1997 consisted of 1,697 individuals. Huay Max had 874 individuals producing a combined total of 2,571 residents (Forand 2001). It is estimated that there are currently 3,500 total individuals residing in Saban and Huay Max (Bever 2002:124). The ethnic makeup of both communities is predominantly Yucatec Maya. The primary languages spoken are Yucatec Maya and Spanish. Most individuals are fully bilingual, yet there are a few residents, usually the older generations, who may speak limited Spanish.

Saban has a medical clinic located off the main square that is currently staffed by two doctors, who will be referred to as "Dr. Alfonso" and "Dr. Jose" in this chapter. The clinic houses a resident doctor on call at all times. There is a second supervising doctor and two nurses who also work at the clinic. During my research I was only aware of four practicing midwives in both communities but I do believe that there are more.

This chapter presents the reasons why women in Saban and Huay Max prefer home births under the supervision of a midwife to hospital or clinical births under the supervision of a medical doctor. Six reasons why women in this area prefer home births will be identified. Additionally, two case studies that further support the findings will be presented. Finally, I will conclude how gender ideology and traditional beliefs and customs continue to support a woman's decision to have a home birth.

Methods

From the beginning, my goal for this project was to establish a relationship with young women in the community. After achieving that relationship I wanted to further understand the daily aspects of these young women's lives. I am interested in childbirth practices due to the fact that Yucatec Maya women typically marry young and have children in their later teens to early twenties (Beyene 1989:111). Issues dealing with young women genuinely interest me because I am also a young woman and I feel as though I could relate with other young women's experiences.

With four weeks to conduct an ethnographic study on childbirth practices in Saban, I was unable to include the entire community in this research project. I was also unable to gather a random sample of participants. Instead, I talked to as many women

³ The *ejido* is a system of communal land ownership established in Mexico in the 1930s to ensure farmland to *campesinos* (peasant farmers) (Bever 2002:124).

in the community as possible, especially mothers who could remember their childbirth experiences.

My main form of data collection was through participant observation. I focused my time on the establishment of six trusting informants. They consisted of two local midwives, two young local mothers and two doctors working in Saban. Various members of the community were also interviewed. The interviews were non-structured and lasted between one and four hours each. I participated in local community events as much as possible and kept daily field notes. All the names in this chapter have been changed to protect the privacy of the informants.

The Research Question

I chose to focus my research on a women's issue, figuring that it might be easier to establish rapport with women in the community than with men because of my own gender. Within Yucatec Maya communities, people generally feel more comfortable and disclose more information about themselves with members of the same sex. There is a separation of the sexes because of the traditional separation of gender roles that are upheld in the community. Women spend most of their time at home in their *solares*, or property lot, amongst other women and their children. Men on the other hand are viewed as the main household providers and their work is outside of the house in the *milpa* or field. Generally only men go out to work in the *milpa* (Bever 2002:127).

In order to further focus my research topic I began talking to some local women about childbirth and child rearing. All of them had mentioned to me that they had gone to the clinic for prenatal care but had chosen to seek a midwife for the birth of their child. I chose to further investigate this trend. I talked to both local doctors and they confirmed that almost all women in the community came to them to receive prenatal vitamin supplements and a check up, but when it came down to the birth, none of them chose to have their child in the clinic under the supervision of a doctor.

My researches centered on the question of why women in the community choose to continuously see a doctor for prenatal care and then decide to have a midwife deliver their baby. I discovered six different reasons why women in the community choose to see a midwife for the birth rather than a doctor.

Reasons Why Women Choose to See a Midwife

No language barrier

Yucatec Maya and Spanish are both spoken in Saban and Huay Max, yet Yucatec Maya is the dominant language that is spoken. Yucatec Maya is primarily spoken in the home and for many children it is the only language that they hear for the first years of their lives. Spanish is later taught and re-enforced in school.

The medical doctors in Saban are not original local community members. They come from various parts of Mexico complete with a Mexican formal education and are unable to speak the local language of most rural communities. Many people living in rural areas in Mexico can speak and understand Spanish but there are a number of people who do not speak and/or understand it well. Doctors working in rural areas tend to have difficulty communicating with their patients due to language barriers. At times, women in Saban especially feel shy and ashamed that they cannot speak Spanish fluently. Also, potentially, even if the language is not a functional barrier, it is a

social/cultural barrier that emphasizes the different backgrounds and social positions of the doctor vs. the rural Maya.

Every midwife in Saban and Huay Max speaks Yucatec Maya. They speak to their patients in Yucatec Maya and during the delivery it is the only language that is spoken. When midwives speak to their patients in Yucatec Maya it allows them to feel comfortable and enables them to relax. Women are able to focus on the birth experience itself, rather than struggling to find the right words to communicate with a healthcare professional. Women in Saban and Huay Max can understand and communicate with a midwife, which is one reason why they choose to see a midwife rather than a doctor.

Birth seen as a social event

At a hospital or medical clinic where women from Saban and Huay Max are taken to give birth, no family member is allowed in the delivery room⁴. Women often feel alone and scared because they have no one to turn to except for the doctor or nurses who are sometimes busy assisting other women. Not until after the birth of the child can the father come in and see his wife and baby. The other family members have to wait until visiting hours to see the mother and child.

At a home birth, all adult family members who want to be present are gathered together in the same room as the mother during the birth. They are there to assist the mother in any way possible with both emotional and physical support (Press 1975:90). Family members provide religious support by continuously praying for God's grace, guidance and protection. They ask God to give strength to the mother and the child. During the birth the woman is never left alone (Davis-Floyd 2001:202).

The woman's husband is a key and central figure during the home birth. He is present at all times (Jordan 1983:24). He helps his wife keep focused and relaxed. The husband is the main person who provides the mother with physical support; at times, the father or the father-in-law also assists the mother. When it comes time for the actual birth of the child, the husband helps carry or hold the woman up while she is pushing (Cosminsky 1982:242).

Both midwives and women in the community emphasize the importance of the husband being present during the birth. Husbands should see "how a woman suffers" (Jordan 1983:24). Women believe that by men watching their wives give birth it will help give them a better appreciation and understanding of them. In the long run men will have respect for their wives and treat them better. Both midwives and women believe that there would be less physical and/or mental spousal abuse if husbands were allowed to be with their wives during the birth of their children. Three different women in the community confirmed these last statements.

Thus, a home birth centers on the interaction that takes place between the mother, the midwife and her family. With a strong supportive and nurturing network present during birth the woman does not feel abandoned or scared. During a home birth the woman feels as if she is assisted through the birth rather than doing it all on her own.

⁴ Although most women plan to deliver their babies at home, if there are complications during a birth, women are sometimes taken to a nearby clinic or hospital.

More personal and physical attention

Prenatal massages have been documented throughout the Yucatan Peninsula (Jordan 1983:19; Cosminsky 1982:240). They are a custom that is also practiced in Saban and Huay Max. Prenatal massages are given by the midwife to the mother and last about half an hour. They cost 5 or 10 pesos⁵. Massages are private and men are not typically allowed to be present.

One of the primary reasons that women choose midwives over doctors is because doctors do not give massages of any kind. Women tend to get massages if they feel any pain or discomfort during their pregnancy or if the baby needs to be moved (Jordan 1983:19-20). All women at some point during their pregnancy come to the midwife for a massage. On average, most women visit the midwife once or twice a month for a massage. During the massage, the midwife is continuously talking to the mother.

Another reason that women choose midwives over doctors is that doctors and nurses do not offer a nurturing and supportive environment. Compared to midwives, most medical practitioners offer little encouragement during the birth. Women often feel that doctors are more distant and cold than a midwife. In addition, individuals from other rural communities in the Yucatan feel that they are also treated badly by hospital staff members (Beyene 1989:44).

One of the midwife's main purposes is to provide the mother with emotional support (Cosminsky 1982:240). The midwife is constantly encouraging the mother. She helps calm and relax the mother. During the birth she often massages the woman's legs, back and midsection to sooth her as well as to relieve pressure.

Women feel comforted by the constant attention that they receive from midwives. The midwife is there to offer them emotional as well as physical support, which is not the case when a birth takes place in a hospital. Women greatly value this assistance given by the midwife and that is why they choose home births assisted by a midwife rather than hospital births assisted by a doctor.

Gender preferences

In Saban and Huay Max women are extremely conservative about their sexuality. From early on in their youth, Yucatec Maya women are brought up to be shy and soft-spoken. They do not usually carry out conversations with men outside of their family (Beyene 1989:80). Dr. Alfonso stated that before women come to the clinic for any health reason, they ask their husbands for permission to be at the clinic.

There is a strong cultural value placed on modesty among the Maya (Cosminsky 1982:240). Women tend to feel very uncomfortable if they have to see a male doctor and especially if he is going to perform a pelvic exam. Women in the community are very shy and embarrassed about allowing a male doctor to give them a check up. All midwives are women; therefore women are less likely to feel embarrassed or ashamed around them.

⁵ During the time the research was conducted the current exchange rate was 9.5 pesos for 1 U.S. dollar (2003).

Cultural traditions are upheld

Midwives understand and acknowledge cultural traditions dealing with the birth of a child. The practice of midwifery allows for cultural traditions to be observed in Saban and Huay Max. For centuries, women in the community have used the assistance of a midwife during the birth of their child. According to Dr. Alfonso and Dr. Jose, midwives deliver about 98 percent of all births in Saban and Huay Max.

An essential tradition that midwives continue to uphold is the proper disposal of the placenta. This is of vital importance because the placenta is thought to have a special relationship to the mother and child (Cosminsky 1982:243). Once the placenta comes out after the birth it is taken outside and burned until nothing but ashes are left. Usually the husband burns the placenta. The traditional understanding behind this custom is that the placenta represents a source of heat that is connected with the woman and if the placenta is allowed to get cold then the woman will suffer from intense abdominal pain.

The custom of burning the placenta coincides with the hot and cold theory common in much of Latin America. It is a system that is based on a hot-cold dichotomy without the formal degrees of intensity of temperature. Foods, beverages, herbs, medicines, animals, and humans are categorized as “hot” or “cold” (Foster 1979:186). The hot and cold theory centers on the belief that there exists a “balance and imbalance” of “hot” and “cold” elements in the body (Beyene 1989:41). The hot and cold theory is attributed to the “principle of opposites”, which deviates from Greek humoral pathology (Foster 1994:3-4). Remedies to illness or injuries are determined by whether the symptoms are hot or cold. “Cold-classified illnesses are treated with hot medication and foods, while hot illnesses are treated with cool substances” (Foster 1994:4).

Midwives carry on and enforce the tradition of burning the placenta. On the other hand many doctors in the area do not allow this custom to continue. Doctors do not allow the woman’s family to have the placenta because they consider it a health hazard. The doctors claim to dispose of the placenta in a safe and uncontaminated way. They do this by dumping it in a hazardous waste bin, like they would any other medical “waste”. In contrast, midwives continue to uphold traditional practices that are valued by the community. This allows women to give birth in a way that they feel is culturally appropriate, this is yet another reason women choose midwives over doctors.

Midwives are less controlling

A midwife typically delivers a child in the mother’s home or at the home of a relative of the mother. During the birth the woman automatically feels comfortable being in a familiar environment (Jordan 1983:17). By being in her own house the mother feels that she has some sense of control during the birthing process. She has more ownership of the birth.

The midwife will allow the mother to move around as she wishes. She can walk around, sit down, squat or lay in her hammock. The mother can also request something to eat or drink while in labor. She can eat whatever she wants. For the actual birth of the child the midwife grants the woman the same sense of freedom and mobility that she has during the labor. The mother can choose to have her child lying down or in a

squatting position. The midwife always encourages the most comfortable position for the mother.

This differs from a hospital birth where the woman would be told that she could not have anything to eat or drink until after the birth of the child (Davis-Floyd 2001:207). At a clinical or hospital birth the mother is more restricted during the birth. For most of the woman's labor, she will be told to lie down in a hospital bed. Before the birth, doctors or nurses will often times have the mother walk around the hospital, even if she is tired and does not want to walk, in order for her to get fully dilated. Once she is ready to give birth, the woman will lay down on a bed with her legs open for the rest of the delivery. In this situation the mother has little-to-no control during the birth.

Midwives give women freedom and mobility during the birth. The mother decides what she wants to do when she wants to do it. At a home birth she has full control of the birth. Women value the freedom that they have during a home birth and that is yet another reason why they prefer them to hospital or clinical births.

Unique Medical Support in the Community

Dr. Alfonso has been working in Saban's health clinic for the past two years. He is the head doctor of the clinic and oversees two nurses and a resident intern named Dr. Jose. Dr. Alfonso's main goal is to set up a medical clinic in Saban where all members of the community can feel comfortable attending.

Dr. Alfonso's first step is to establish a bond of trust between himself and his patients and the rest of the community. Dr. Alfonso believes that building trust is the most important aspect of being a doctor. He realizes that without trust there are no patients. Dr. Alfonso recognizes that he must always be aware and understanding of the cultural traditions and practices of the community.

Dr. Alfonso has chosen to work with the midwives instead of against them. He understands the cultural importance that midwives have in the community and sees the trust that the community has in them. So for the better health of the community, Dr. Alfonso knows that the midwives need to be properly trained. Dr. Alfonso tries to maintain a good relationship with all the local midwives, so that if anything ever goes wrong during a delivery, they will not hesitate to call upon him.

Both Dr. Alfonso and Dr. Jose give free workshops in proper medical procedures dealing with delivering a baby to all midwives willing to attend. During the workshops the doctors lecture on procedures that rural midwives can incorporate into their existing routines; they are not costly and they do not interfere with cultural traditions, yet they are significant enough to prevent contamination or spread of germs.

Dr. Alfonso hopes to continue to build trust amongst the midwives. Furthermore, Dr. Alfonso has allowed midwives to be present during births at the clinic so that they can work together to help the mother and child. It seems that all of Dr. Alfonso's hard work is starting to payoff. As of the time of the research, all the midwives in Saban and Huay Max were sending their patients over to the clinic for prenatal treatment. Once the woman arrives at the clinic, the doctors give her a checkup and hand out vitamin supplements every two months so that the she will keep coming back.

In Mexico today, biomedicine has taken over childbirth and midwives are in a fast decline. "For centuries the primary birth practitioners in Mexico, traditional midwives were, by the 1970's, attending 43 percent of Mexican births. Between 1995 and 1996,

traditional midwives attended less than 17 percent of births in Mexico” (Davis-Floyd 2001:192). Government officials and doctors dismiss the importance of midwifery, stating that there are plenty of doctors and nurses in Mexico. The poor do not need to see midwives because they are entitled to the same health care as the middle class (Davis-Floyd 2001:192-193). The support and acceptance that Dr. Alfonso has provided to the midwives is a unique approach that is quite uncommon amongst his peers. Due to the doctors’ cooperation with midwives, midwifery has continued to thrive in Saban and Huay Max because it is not being contested.

Midwife Qualifications

There are a few general qualifications that that a woman must meet in order to be a midwife. I obtained this set of criteria from interviews with two local midwives of Huay Max, local mothers from Saban and Huay Max, as well as gathering references from research done by other anthropologist on midwifery throughout the Yucatan peninsula. They are general qualifications, yet the practice of midwifery centers upon them.

According to one of the local midwives interviewed, many women do not have the strength to become midwives. They do not have patience, tolerance or the stomach for it. Many women get disgusted with handling bodily fluids and some cannot stand to see another woman in pain. In order for a woman to be a midwife she must be physically and emotionally strong and unafraid.

A woman must have had children before becoming a midwife. Personal experiences are key in midwifery. Without the experience of childbirth, a midwife cannot relate with her patients. She has not gained the knowledge and insight that comes with having gone through labor (Beyene 1989:43). All of the midwives in Saban and Huay Max have had children.

The amount of births that a midwife has assisted in reflects heavily upon her status as a midwife. A woman in Saban stated that for a midwife to be highly respected, she must have successfully delivered many babies. She should have at least one year of experience working with another midwife before she begins to attend patients on her own.

Case Studies

In this section two specific case studies will be presented. The case studies were conducted with two midwives who, according to Dr. Jose, are the most prominent in the area. In addition, he stated that these two women attended the majority of births in Saban and Huay Max.

Case Study #1

Rocio lives in a simple, but comfortable, home in Huay Max. She has a nice home with several cement rooms and a *guano*-thatched house and kitchen⁶. Rocio also has a refrigerator and a 20-inch screen television. Large appliances like refrigerators

⁶ Cement rooms are a new and expensive trend in Saban and Huay Max; people are starting to build their homes with cement blocks but it happens slowly and in stages. It is quite common to see half-built cement rooms on people’s *solares* in which work has been postponed due to lack of money.

and televisions are beginning to fill more homes in the area, yet they are sporadically dispersed among the community and there are many families that live without them.

Rocio has been a practicing midwife for 13 years. She started apprenticing under her mother's tutelage and guidance when she was 27 years old. By that time she had already had children and was at a mature enough age to handle the job. Rocio attends about four to ten births a month and performs prenatal massages daily. She is in constant demand making her one of the areas most sought-after midwives.

Rocio charges her patients 5 to 10 *pesos* for a massage and 200 *pesos* for a birth. Other than midwifery, Rocio has a few alternative sources of income. Rocio runs a small store from her home selling mainly candy, sodas and eggs. She raises pigs and weaves hammocks for sale whenever she can.

Rocio is also the *auxiliar de salud*, health promoter, for Huay Max. It is a government-funded position and she receives a monthly salary for her services. Rocio chose not to disclose the total amount of money that she receives every month from the government. The position of the *auxiliar de salud* has been instituted in many rural areas throughout Mexico. The job consists of handing out medicine and birth control, as well as giving vaccines (Beyene 1989:44).

Rocio spends most of her evenings giving prenatal massages. Rocio sets up a large curtain that runs along one end of her *guano* house. The purpose of the curtain is so that the woman can have some privacy while Rocio massages her. Rocio will also set a blanket on the floor so that the woman can lie down on it.

Once the woman is lying on the floor Rocio will begin to massage her. Rocio uses oil to gently glide her hands around the woman's midriff or torso. She always first tries to locate the baby's head and once she finds it she tries to position the head down towards the pelvis. She slowly rotates the baby around by pushing and pulling along the sides of the torso and midsection.

Rocio treats her patients with much respect and modesty. She never demands that her patients undress for a massage or for the birth. During the massage Rocio has the woman expose only her midsection. When the woman is in labor Rocio checks to see how far dilated she is by feeling with her fingertips. Even when the baby is coming out, Rocio will put a cloth over the woman's pelvic area to give her privacy as she catches the baby. There is never a moment in which Rocio will purposely look at the woman's vagina.

Case Study #2

Sara is a 43-year-old midwife that lives in Huay Max. She has been practicing midwifery for eleven years. Sara apprenticed with her mother-in-law for two years to learn the trade of midwifery. On average, Sara delivers two to five babies a month as well as giving prenatal massages daily.

Sara has just recently begun to speak Spanish fluently, yet she struggles with the language at times. She never mastered the Spanish language because her father pulled her out of school when she was ten years old so that she could help her mother with domestic chores. Sara has begun to speak Spanish more frequently because in the last four years she has been attending free basic public health workshops from the

doctors in Felipe Carrillo Puerto⁷. These workshops have allowed her to fuse some modern medical practices with her traditional work of midwifery.

Sara and her husband sometimes suffer from financial problems. Though Sara works as a midwife, it does not generate enough of an income. She charges 5 *pesos* for a massage and 150 *pesos* to attend a birth. Sara has to weave hammocks and embroiders napkins and *huipils* in order to further generate a sustainable income. One room in her house is constructed out of cement, another room has *guano* roof and her kitchen is a room with a dirt floor and guano roof.

Sara chose to become a midwife because she wanted to help people. She enjoys her work even though it can be challenging at times. Sara expressed a desire to pass on her knowledge. She would like to one day have an apprentice, but Sara is going to have to wait a while for that day to come. Sara's only daughter Ana does not want to learn about midwifery. Ana has said that she could not stand to see the amount of pain a woman must go through to have a child. Sara knows that Ana does not have the strength or the nerves necessary to be a midwife, and Ana agrees with that.

Discussion and Conclusion

When the research question was first presented - Why do women in the community choose to see a doctor for prenatal care but then choose to have a midwife attend their birth? - I assumed that the answer was simple. Women must have midwives attend their births because it is economically more reasonable than having a doctor attend their birth. I was obviously wrong.

With further research, I discovered that economics were not the answer to the question. During one of my first meetings with Dr. Alfonso and Dr. Jose I had asked them if financial reasons were the cause as to why women chose to see a midwife. The doctors said money was not the issue. The medical clinic in Saban asks only for a donation of clean towels or sheets and a contribution of one 150 *pesos* in order for a woman to have her baby in the clinic. The clinic has also said that it would not refuse to help a woman if she could not afford to contribute the usual fee, they just ask the family to give whatever they can. Midwives, on average, charge from 150 *pesos* to 250 *pesos* to attend a birth.

After many more interviews with women and midwives in the community, it became clear that there was not one answer as to why women continuously choose to see midwives over doctors. Instead there are multiple motivations for women to choose midwives. The reasons why women choose midwives over doctors have to do with several cultural distinctions between the two. Midwives speak Yucatec Maya, where many doctors do not. Midwives allow family members to be present during the birth; doctors do not. Midwives provide emotional support and offer physical attention through massages; doctors are perceived as distant and they never provide massages. All midwives are women; therefore, women in the community feel more comfortable around them than they would around a male doctor. Midwives continue to uphold cultural traditions, like the burning of the placenta: doctors typically do not give the placenta back to the woman after a birth. Midwives give the woman freedom and mobility during the birth; doctors are more restrictive and controlling during the birth process.

⁷ Felipe Carrillo Puerto is located approximately 80 km east of Saban, although it must be reached by going north and then southeast.

This study is intended to contribute to an understanding of midwifery in this cultural region. The Mexican medical community could use this study to have a greater understanding of their patients and in turn provide them with better medical services. A possible suggestion would be that the Mexican medical community continues to provide rural midwives with educational medical workshops and supply them with medical supplies used during the birth, like gloves, alcohol, sterile scissors for cutting the umbilical cord, sterile cords to tie the umbilical cord, etc. The hope is that women in this cultural area will be encouraged to continue to have birth in a traditional and comfortable way for them, yet their health and safety will not be neglected.

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Discussion and Conclusions

Owing to the sporadic distribution of archeological survey throughout the Yucatán peninsula, it was difficult to place the data generated by our research at Yo'okop into a regional context. The nearest well studied and documented sites were between 60 and 100 km away. Working in nearby *ejidos* afforded us an opportunity to begin to assemble data on a regional scale in which Yo'okop functioned as an economic and political capital over smaller centers. The sites investigated this season lie between Yo'okop and the next major site to its north, Ichmul.

Unlike Yo'okop, none of the sites showed continuous occupation. While this may be due in part to the limited nature of our sampling, the fact that the Early and Late Classic periods are largely unrepresented at all of the sites could be indicative of a larger pattern in which much of this region experienced an occupational hiatus. Interestingly, this hiatus does not seem to have affected the largest sites in the region, Ichmul or Yo'okop. Indeed, these periods were the ones in which Yo'okop was dedicating its dynastic monuments. One possibility is that Ichmul and Yo'okop were rivals engaged in periodic warfare during this time. The depopulation of the study area at this time would have created a buffer zone between these sites.

The reoccupation of the region during the Terminal Classic might be an expression of political decentralization. At Yo'okop, this period was one in which there was no central focus for new construction, with elite residences scattered across the site (Kashak 2002). All of this year's sites that were mapped and tested showed strong Terminal Classic occupations, both architecturally and ceramically. At Nohcacab, this included elite residences with carved stone mosaic facades (Figure 9), a rarity in sites of this size.

In contrast to decentralization, the construction of a *sacbe* between Ichmul and Xquerol formally and physically links these two sites. The *sacbe* is of the core-outlier type (Shaw 2001:262) in which the smaller locality could not be considered to be politically independent of the larger one. Yo'okop's Sacbe 2 (Lloyd 2002) also fits this pattern. Interestingly, both the site of Xquerol and Yo'okop's Group C consist of a large mound at the *sacbe* terminus, with little else represented architecturally. If, like Yo'okop's Sacbe 1 and Sacbe 3, these core-outlier *sacbeob* date to the Terminal Classic period, then the construction of such *sacbe* systems might be politically unifying mechanisms.

With the possible exception of Sacalaca, which may be a Class 3 site, all sites recorded this season can be considered to be Class 4, as they are small in area, lack tall mounds, and have little exceptional architecture (Velazquez Morlet *et al.* 1988). What then was the reason for the reestablishment of sites in the region? Only Sacalaca had access to a permanent source of drinking water, while Nohcacab might have captured surface runoff. One possible explanation could be that the primary resource may have been fertile soils; all sites in the survey area are associated with pockets of deep soil. Like Yo'okop (Johnstone 2002b:7), Nohcacab seems to have reserved its choicest soils for agricultural purposes, even when these soils fell within the central portion of the site.

The Postclassic saw continued use of the region, with *incensario* fragments found at all sites. Nohcacab, in particular, seems to have been a focal point of activity during the Postclassic, with some substantial remodeling of the site including the

construction of temple platforms, shrines, and altars. These often employed recycled architectural elements from the Terminal Classic, a pattern seen at Yo'okop (Stromsvik *et al.* 1955). Indeed, the shrine-altar complex documented at Nohcacab is also present at Yo'okop, though with larger, vaulted shrines.

Similarities in ceramic assemblages and lithic inventories suggest a great deal of cultural interaction and exchange across the region. The continued use of midwives in Saban is an example of strong cultural continuity. This is also seen in the use of caves as documented by artwork ranging from Tlaloc to thoroughbreds, and in the modern occupation of ancient localities such as Sacalaca and Xquerol. What remains a source for future inquiry are explanations for why this region might have experienced a break with tradition over the Early Classic and Late Classic.

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