

PROGRESS REPORT OF THE FOURTH SEASON (1991)  
OF INVESTIGATIONS AT CAHAL PECH, BELIZE



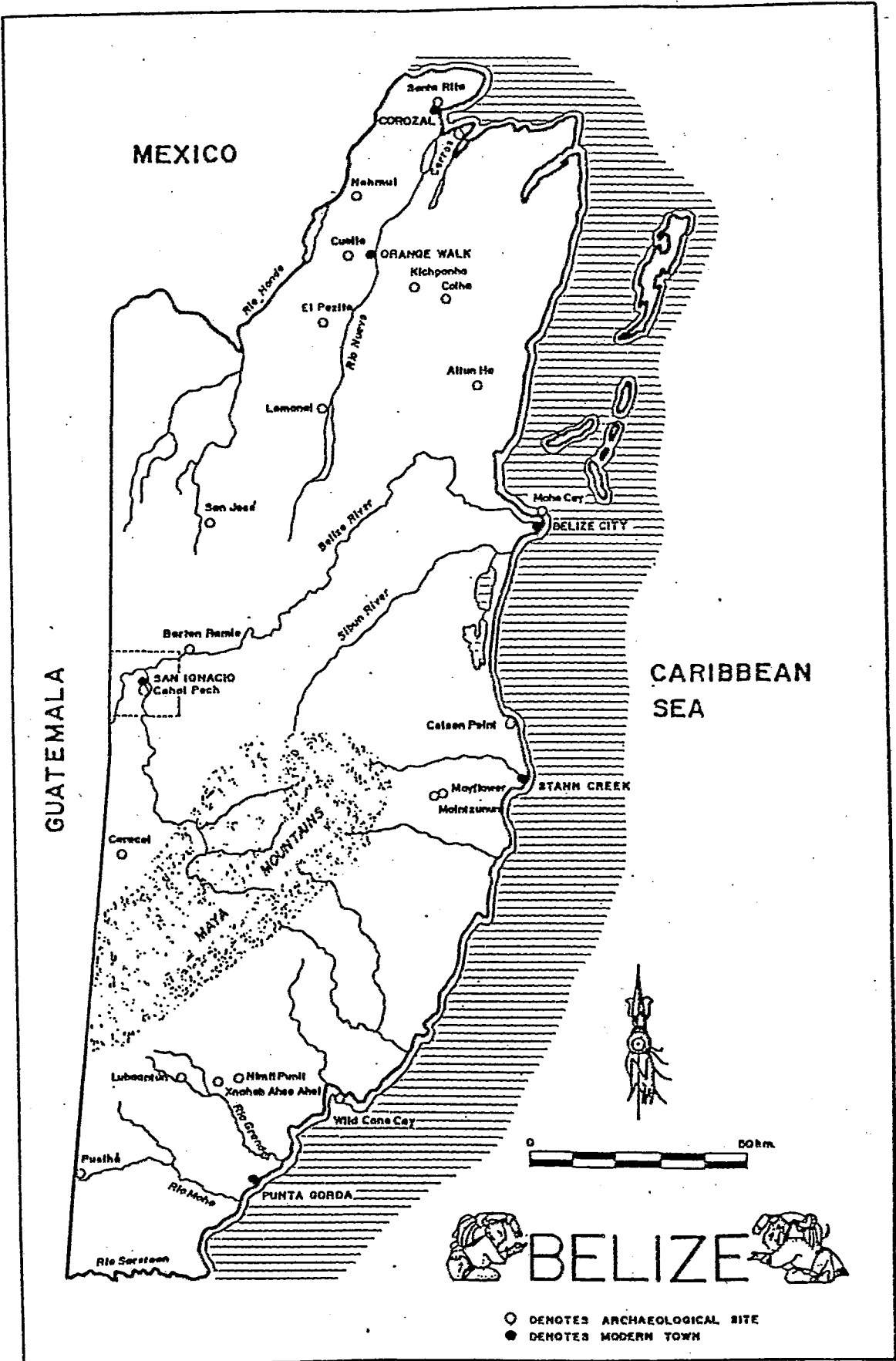
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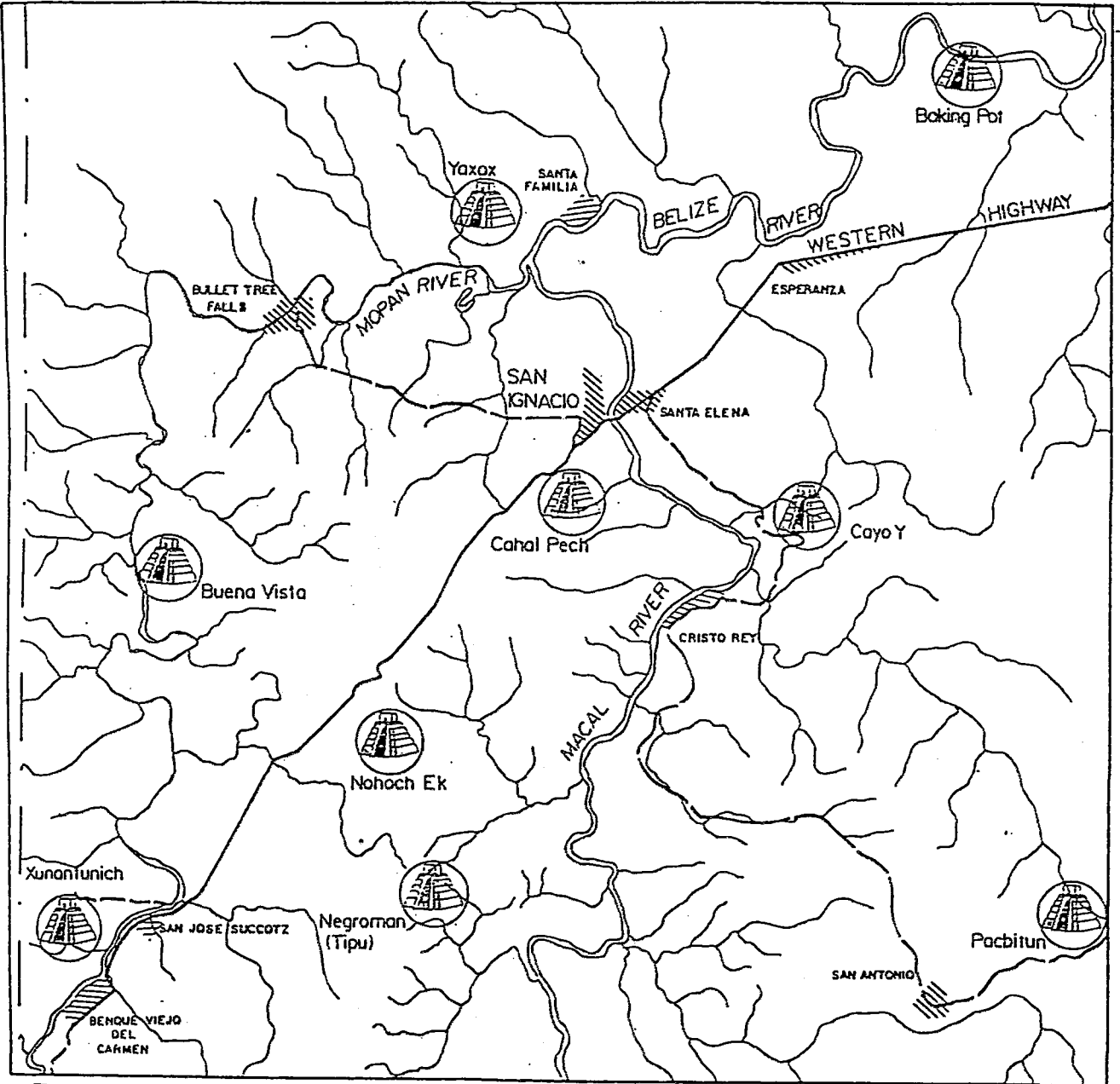
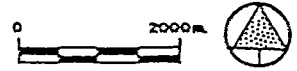
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


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Map of Belize Showing the location of Cahal Pech.

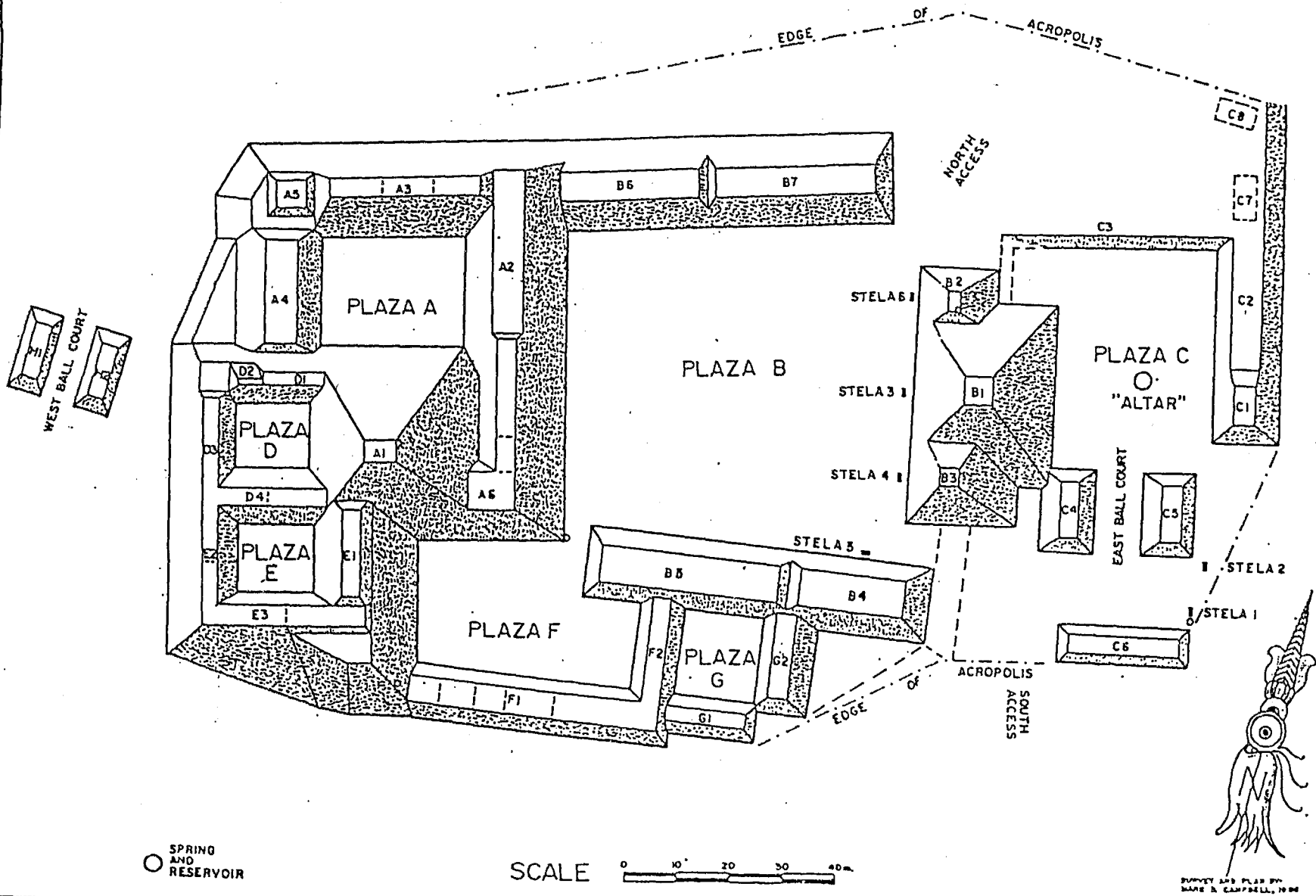
PLAN TO SHOW ARCHAEOLOGICAL SITES IN THE MACAL - MOPAN RIVERS REGION OF CAYO, BELIZE



 denotes archaeological site     denotes modern town     denotes paved road     denotes unpaved road

Archaeological Map of the Macal-Mopan Rivers Region, Cayo District, Belize.

CAHAL PECH, CAYO, BELIZE



Rectified plan of the site core at Cahal Pech, Belize.

**THE 1991 SEASON OF INVESTIGATIONS AT CAHAL PECH**

BY

**JAIME J. AWE AND MARK D. CAMPBELL****INTRODUCTION**

The fourth season of investigations at Cahal Pech was conducted between May and July of 1991. The project was sponsored by the Department of Anthropology at Trent University in Ontario, Canada, and by the Central Research Fund and the Gordon Childe Fund of the University of London, England. An excavation permit, plus invaluable logistical support, was also provided by Commissioner John Morris and the staff of the Belize Department of Archaeology.

As in previous years, the 1991 project benefited tremendously from discussions, collaboration, and direct assistance from many colleagues in the field. The timely ceramic conference organized by Dr. Anabel Ford was particularly beneficial because it allowed us a rare opportunity to exchange information with participants whose area of research extends beyond the central Maya Lowlands. Since part of our research interests is concerned with intra-site spatial relationships, Ford's settlement study in the upper Belize Valley also continued to be a major source for comparative analyses.

Discussions with Fred Valdez, and continued collaboration with

Joseph Ball, led to a greater appreciation of the unique collection of Formative period pottery from Cahal Pech. At the same time, Jim Garber's, Richard Leventhal's, and Ball and Taschek's research in the area allowed us to place our information within a regional/cultural context whose data base is increasing geometrically with each new season. These individuals, our excellent local crew, plus our staff and student assistants, made the fourth season of investigations at Cahal Pech another successful and rewarding experience.

#### OBJECTIVES OF THE FOURTH SEASON

The 1991 season had four major goals: a) to excavate a second 2 m X 2 m column in Str. B-4 in the site core, b) to continue surveying and mapping settlements within the immediate periphery of the site center, c) to excavate at least one settlement group within the eastern, southern, and western peripheries of the central acropolis, and d) to commence analysis of the Formative period ceramic assemblage.

The purpose of the first goal was to retrieve more data on the Formative period of occupation at Cahal Pech, particularly that segment corresponding to the early Middle Formative, Cunil phase (1000-800 B.C). A previous excavation in Str. B-4 indicated that the Cunil phase predated that of the Jenney Creek phase at Barton Ramie. This second column would therefore help to corroborate and confirm this sequence, and at the same time would produce more

information on this poorly known segment of Maya prehistory.

As we have indicated in previous reports (Awe and Campbell 1988; Awe, Bill and Campbell 1990; Awe and Campbell 1991; Awe, Campbell, and Conlon 1991), the site of Cahal Pech is quickly being encroached by an ever expanding San Ignacio Town. By surveying and plotting the settlements within the immediate periphery of the center we would record many of the surrounding mounds and plazuela groups before they were lost from the archaeological record. Concomitantly, the mapping of these settlements would indicate whether Cahal Pech was indeed analogous to a solitary "castle on the hill", or whether the site exhibited the same complex gradation evident in the settlement systems of Xunantunich, Baking Pot, Buena Vista and Black Man Eddy.

The objectives of the third goal were closely related to that of the second. They sought to determine the diachronic development of settlements within the site's immediate periphery, to ascertain the function of these settlement groups, and to examine intra-site relationships between the core and its peripheral population. This type of information is important for most Mayanists accept and understand that the prehistoric human settlements which we attempt to study were part of a very dynamic system. Many of these settlements often display differences in their initial date of occupation, there are variances in their diachronic growth patterns, and they sometimes exhibit temporal changes in their



function and status (cf. Ford 1990). A synchronous study of settlements therefore tells us precious little of the processes which led to cultural complexity, and they provide no insight as to why there were temporal changes in the roles of different settlements and centers in the regional (upper Belize Valley) settlement universe.

The purpose of the fourth goal was to provide a traditional ceramic sequence for the site. More importantly, however, we wanted to define the early Middle Formative Cunil complex (1000-800 B.C.), and determine the regional affiliation of this early ceramic tradition.

#### INVESTIGATIONS

The second 2 m X 2 m column in Str. B-4 was excavated under the supervision of David Cheetham. The unit descended approximately 8.0 m from surface, and exposed a series of 13 construction phases and 15 levels with a time span that ranges from the first half of the early Middle Formative through to the Late Classic period. This stratified sequence is presently one of the longest to be recorded in the Maya Lowlands, and its sealed deposits, like that at Cuello, will provide another opportunity to study the seminal period of lowland Maya prehistory.

The peripheral settlement survey was conducted by Mark Campbell and Sean Brisbin. In 1991 they extended the main southern

and western transects, and they completed the mapping of the Tzinik, Tolok, K'ik', and Cas Pek Groups. Plans of these settlements are provided in the papers by Conlon, Powis, Goldsmith, and Awe et al. respectively.

The first result of the survey was that it provided conclusive evidence of an extensive support population in the immediate periphery of the site core. More importantly, however, differences in the morphology and configuration of these settlements indicate that there was considerable variation in the function and status of the peripheral population. This hypothesis was later confirmed by excavations within several of the surrounding settlement groups for which preliminary reports are provided below. In addition, previous research in the northern periphery, and the investigations at the Tolok, K'ik', Zotz, Cas Pek, and Tzinik Groups, demonstrate that scattered homesteads were established around the site core by at least the late Middle Formative period.

The analysis of the Preclassic ceramic assemblage from Cahal Pech was begun by the senior author and is presently being completed by Joseph Ball. The purpose of this collaborative effort is to produce a new Formative ceramic sequence for the upper Belize Valley. This sequence, which we (Awe and Ball) hope to publish in the near future, will incorporate the previously undocumented Cunil complex with that of the later regional complexes recorded by

Gifford (1976) and by Ball (cf. Ball and Taschek 1986). Although incomplete, the study has already indicated that: 1) the Cunil complex is typologically and stratigraphically a predecessor of the Jenney Creek complex; 2) that Cunil pottery is very unlike the ceramics from the Mamom complex; and 3) that the Cunil assemblage includes ceramics which are typologically similar to material from the Swasey/Bladen and Bolay complexes in northern Belize.

Following the 1991 field season, several specialized studies were also conducted on data retrieved from Cahal Pech. Within this progress report we include three preliminary papers which deal with these special topics. The article by Iannone provides a detailed report of his analysis of several eccentric flints from the Tzinic Group. Aimers, Awe, and Blanchard's paper describes a Formative period round structure from the Zotz Group and discusses the possible functions of these circular platforms. Stanchly and Dale's faunal report provides preliminary insights on the exploitation of animal resources during the Formative period.

Several other studies are presently in progress. One of these focusses on thirteen samples of obsidian (from Formative contexts in Str. B-4) which were submitted for sourcing analysis and hydration dating by Awe and Healy. Initial results of this study indicates that El Chayal was the only source for the seven early Middle Formative samples analyzed, and that late Middle and Late Formative samples originated from both San Martin Jilotepeque and

El Chayal. This data is particularly interesting because it diverges from the pattern noted in the Belize region (cf. Dreiss 1988), but is similar to that recorded for the Pacific coast of Chiapas and Guatemala (Clark and Lee 1984). There is little doubt that future investigations and analyses of the archaeological record at Cahal Pech will continue to produce intriguing data. Much of the information that we presently have, however, would have never been recovered, recorded, and disseminated without the dedication and help of unselfish colleagues and a hard working staff.

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REPORT ON THE 1991 EXCAVATIONS  
AT THE K'IK' GROUP,  
CAHAL PECH, BELIZE

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INTRODUCTION

During the 1991 field season of the Cahal Pech Archaeological Project, the major research focus was directed toward explorations in the immediate periphery of the site. Excavations continued at the Zotz and Tzinik groups, and in addition, new excavations were begun at three other settlement clusters. These were designated as the Tolok, Cas Pek, and K'ik' groups. The excavations at the Tolok and Cas Pek groups are detailed elsewhere in this report; the following is a preliminary analysis and discussion of the 1991 research conducted at the K'ik' group of mounds.

The excavations at the K'ik' group were carried out as a sub-operation within the much larger Cahal Pech project, and as a result, there were certain agendas that we emphasized in the creation of our research strategy. Specifically, we believed that excavation at the K'ik' group (in concert with the investigations at other outlying groups) would provide us with information regarding cultural and political developments at Cahal Pech and the surrounding region. This was not a new priority; from the beginning of the Cahal Pech project in 1988, one of our directives has always been to "provide a much clearer and accurate picture of the settlement around the site." (Awe and Campbell 1988:12). Such

a pursuit needed to include not simply a documentation of mound locations, but also some detailed analyses of their layouts, associated artifact assemblages, and relationships to each other and to the site core. Too often, researchers have glossed over detailed analyses of peripheral groups, and have based developmental or processual hypotheses on assumptions that in many cases have proven inaccurate. We hoped that by conducting extensive reconnaissances in the Cahal Pech periphery, we might build a more realistic picture of the prehistory of this center, and in the Upper Belize Valley.

#### OBJECTIVES

Because the limitations of time and budget prohibited an examination of all mounds in the Cahal Pech periphery, we wanted to obtain a maximum of information from the sample we excavated. Our decision to excavate at the K'ik' group was based on two criteria which we felt allowed us to select a group containing the most relevant information. These two criteria were a) the proximity of the group to the site core and to other excavated groups; and b) the apparent formality of its layout. We developed these two criteria in response to certain research goals, as follows:

1. Because we were interested in questions of core/periphery interaction and development at Cahal Pech, we wanted to obtain as much chronological information as possible for both areas. By 1991, we had established a relatively detailed chronology for the site core, but not nearly such a clear picture for the peripheral

groups. We decided that the best way to build the temporal sequence outside the site core was to investigate the most substantial and formally planned of the outlier groups. We expected, following Tourtellot's example, that groups "occupied for a longer time should have more dwellings than units occupied for a shorter time." (1988a, 104). We did not accept the above as an axiomatic statement, but instead used it as a working hypothesis - an heuristic tool for selecting the groups most likely to provide the best information. The K'ik' group seemed an appropriate choice in that respect.

2. We were also interested in determining something of the status relationships between the occupants of the Cahal Pech site core, and those in the peripheral areas. It seemed to us that a simple postulation of elite/core, peasant/periphery was too naive to explain cultural processes at Cahal Pech. Specifically, we wanted to examine the notion that some residents in the peripheral areas shared a higher status than originally suspected. Furthermore, we felt that it was in the examination of the most formally planned and architecturally substantial of the groups that we might derive evidence for this higher status. The K'ik' group, by virtue of its layout in a formal "plazuela" configuration, and also because of its location with respect to the core itself, seemed a good choice for clarifying status issues.

3. We also wanted to clarify, insomuch as was possible, the interactive relationships among the peripheral groups, and between the periphery and the site core. Again, the K'ik' group seemed an



ideal choice, given its proximity to both the Zotz group and the site core.

4. Finally, we considered it desirable that groups be chosen that could be studied as defined and separate units. That is, while the entire Cahal Pech core/periphery area certainly functioned as a coherent cultural entity, each of its component parts likely maintained an internal cohesion separate from the site as a whole. Thus, we believed that only by first examining the individual groups could we eventually gain a larger understanding of Cahal Pech itself. The K'ik' group was chosen because it shows the characteristics of a discreet unit (see below).

#### THE K'IK' GROUP

The K'ik' group is located approximately 80 metres south of Plaza F in the main site acropolis, and about 25 metres northwest of the Zotz group. The architectural features of the K'ik' group consist of the following: 1) a "plazuela" group of two mounds, arranged in a formalized pattern (Figs.1 & 2). The mounds form the north and west sides of a square; there is no evidence for structures on the east or south sides. 2) These two mounds sit on top of a raised platform, which elevates the "plazuela" group slightly more than a metre above the surrounding terrain. The entire platform measures just under 300 square metres in area. 3) A third, enigmatic feature is situated off the northeast corner of the raised platform.

The group as a whole shares similarities to formal mound groups across the Maya lowlands. These have been described

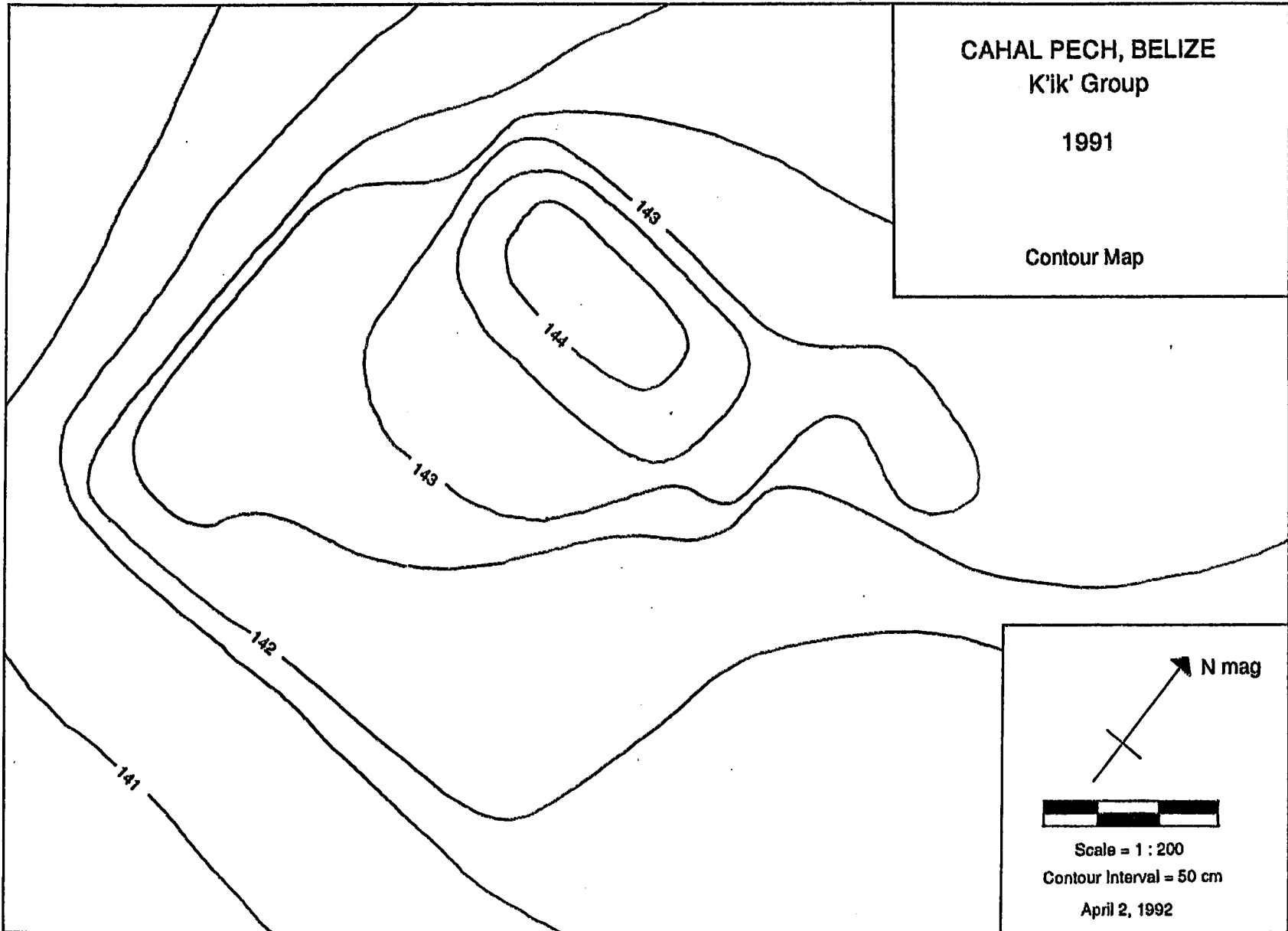


Fig. 1: Contour Plan of the K'ik' Group, Cahal Pech, Belize

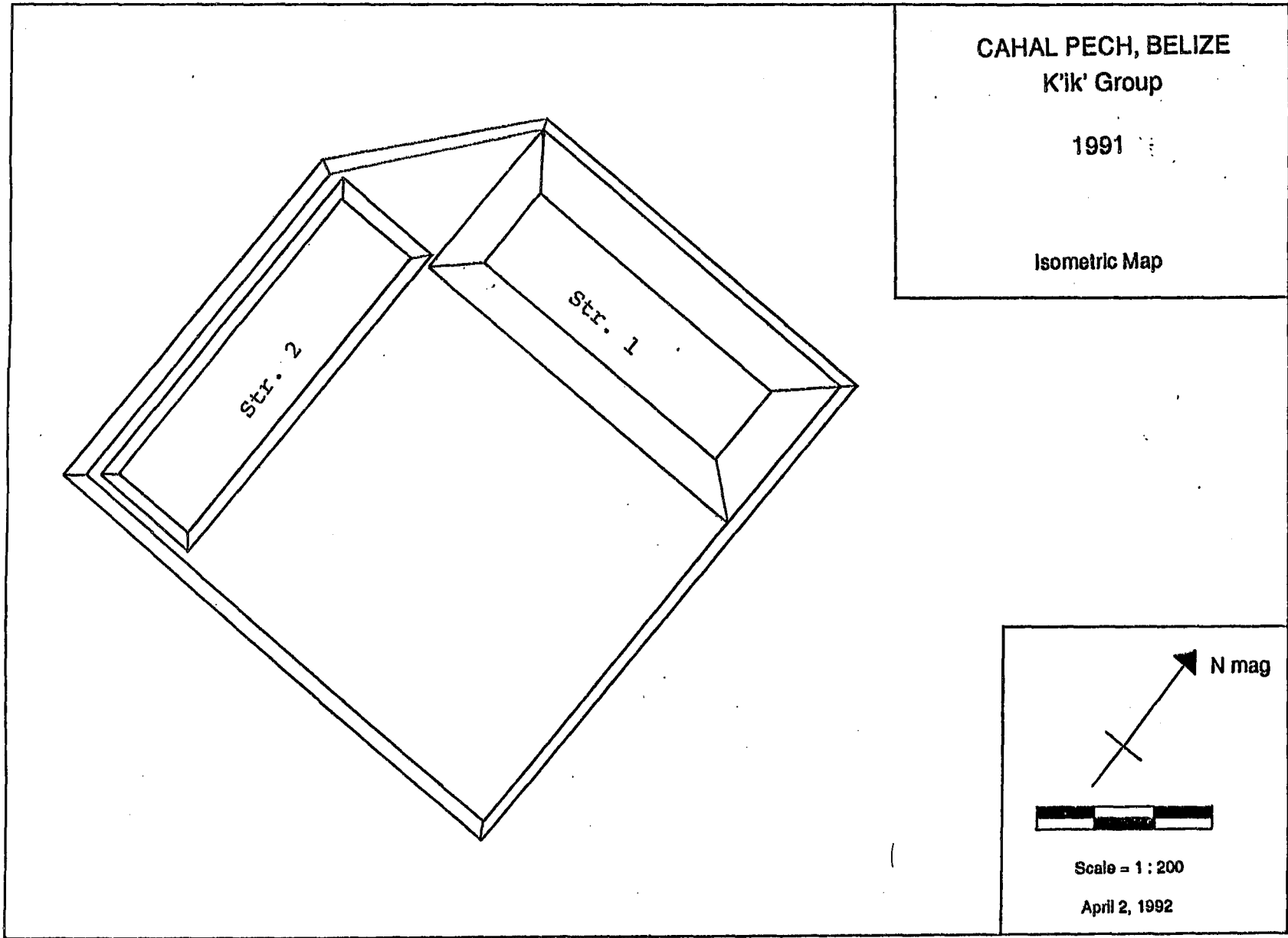


Fig. 2: Rectified plan of the K'ik' Group, Cahal Pech, Belize

throughout the twentieth century by various researchers such as Eric Thompson, who coined the term "plazuela", and who noted that these groups were ubiquitous in the southern Cayo district (Thompson 1931). Gordon Willey's famous settlement pattern survey in Belize revealed the presence of numerous plazuelas in the Upper Belize Valley as well (Willey et al. 1965). These and other authors, on the basis of excavation and the "principle of abundance", classified the plazuela groups as "housemound groups". That is, the plazuelas were assigned a residential function, because they were so common, and because the artifact and architectural record for groups tested was analogous to modern ethnographic accounts (cf. Redfield and Villa Rojas 1934; Wauchope 1938) This idea of "housemounds" has become entrenched in lowlands archaeology to the present day, and has often been assumed without question by researchers. One of the aims of the K'ik' project was to test the assumption that this particular plazuela group served a residential function.

### EXCAVATIONS

When we arrived at K'ik in 1991, we noted evidence of small-scale looting. Looting seemed to have been concentrated on the east end of the north mound (henceforth designated Structure 1), and the northwest corner of the west mound (Structure 2). A small pile of rubble in the middle of the central area seems also to have been created by modern disturbance. However, excavation eventually revealed that damage by looters in these areas had been minimal.

Most extensive looting efforts at Cahal Pech seem to have been directed toward the larger structures in the site core, and at the Tzinik group (cf. Awe and Campbell 1988; Conlon and Awe 1991). Our excavations attempted to avoid areas disturbed by looting, since we felt that this would reduce the risk of stratigraphic confusion.

The excavations at the K'ik' group were designed as a single-season endeavour, making horizontal exposure of the entire group untenable. We therefore designed a sampling strategy which would allow us to obtain both stratigraphic and spatial information from all major areas of the group, including the two plazuela mounds, the central area, and the extra-platform mound. With the above objectives in mind, we organized our excavations to try to maximize the collected database. Since the main goals of the K'ik' project were heuristic, our excavation strategy was designed to be quite flexible. The general rule that we followed was to perform trench excavations first - the expectation being that this would provide the clearest indications of architectural stratigraphy. Such strata, once defined, would then be exposed horizontally, and would thus provide spatial and material data. Looking retrospectively at the 1991 season, our heuristic procedures were, in fact, even more successful than we had anticipated. This was due in part to the excellent preservation of the features themselves. The excavations at each locus are detailed below.

### Structure 1

Structure 1 is the most substantial of the platform-based

mounds at the K'ik' group, and forms the north side of the plazuela arrangement. At the start of excavations, the mound measured approximately 13 metres along its length, and seven metres from front to back, with a maximum height above the platform of about 1.5 metres. Its relative prominence above the other features at the K'ik' group has apparently made it a target for small scale looting; on our first visit to the group we noticed a looter's trench into the east end of the mound. It seems likely that no information of any importance was lost during the looting, and in fact, the disturbance provided us with initial clues concerning architectural phases and preservation.

Our initial investigation of the mound consisted of a long trench into what we expected was the midline of the structure below. Starting on the north side of the mound, this trench cut fully through the structure and well into the central platform area. Our excavations were conducted to the level of bedrock, and revealed a series of superimposed architectural features. Examination of these in profile has suggested a sequence of three discreet phases of building activity, the earliest of which predates the initial construction of the north structure. The three building phases, as well as can be reconstructed, are as follows:

Phase 1 - The construction of the initial plazuela platform, slightly above bedrock.

Our excavations in the plazuela central area clearly showed the remains of an early plaster floor, near the bedrock level. This

first construction seems to predate the entire structure 1 sequence, since we recovered what I believe to be the original facing wall on the north side of the early platform. The wall lies to the south of the main architectural features of structure 1, indicating that the construction of the north structure greatly increased the overall size of the later plazuela. Any structures that may have stood on top of the early platform were almost certainly of perishable materials; no evidence was found to suggest where they were located.

Phase 2 - The northward expansion of the plazuela platform and initial construction of the Structure 1 building platform. During the second building phase, the initial construction of Structure 1 expanded the plazuela dimensions at least 7 metres to the north. The plazuela central area was raised further above bedrock, and was capped by a second plaster floor. The floor seems to have extended about a metre further north than the original platform, abutting the newly built Structure 1, which continued toward the north. The initial phase architecture for Structure 1 consisted mostly of loose fill deposits, faced on the south (the front of the structure) by a thick plaster wall, which was in turn topped by a line of large, well finished cut-stones. The structure platform was built to a height of approximately 80 cm above the central area, and very likely supported a perishable building of pole and thatch. (No traces of such a perishable structure have been recovered, however.) A large plaster and stone step was

subsequently added to the front of the Structure 1 terrace, seemingly to allow access to the building from the central area.

Phase 3 - The southern expansion of the Structure 1 platform.

In the final building phase, a new terrace was added to the front of Structure 1 - evident in the stratigraphic record as a plaster floor abutting the earlier terrace just below the line of large cut-stones. This terrace was approximately one metre wide, and was faced on the south (the front of the terrace) by a wall of rough stones (now evident only as rubble). This terrace is quite poorly preserved, and it is not clear if there were additional steps attached to the front of the terrace. Such steps would be likely, if the builders were maintaining a similar architectural style as exhibited by the earlier phase. The new terrace joins to the earlier platform below the large cut-stone wall, and it thus appears that the wall feature continued to be used - this time as a low step to the next terrace level. On top of that second terrace, more new architecture was added. Specifically, it seems that a desire for increased height led the residents of the K'ik' group to add further fill material to the earlier surface of the structure platform, and to cap this with a final plaster floor. Like the Phase 3 terrace, this final architectural addition is very poorly preserved, and it is not clear how far south the front of the structure actually stood. It does not appear, however, that any further height was added to the plazuela central area itself.



Without question, we recovered the most well preserved of all Structure 1 architecture from Period 2 levels, and it was upon this building phase that we concentrated our subsequent spatial analyses. While time permitted only limited excavation in that respect, we were able to recover certain interesting pieces of information. First, the south (front) terrace wall of the building extends the entire length of Structure 1, although it seems that the plaster step which abuts it, does not. Second, the plaster floor which caps the initial loose fill of the structure platform is not a single level floor, as we might have expected. Instead, the platform floor is split into two distinct levels, thus dividing the structure into a lower front area, and a higher back area. I am not entirely sure what purpose this split-level arrangement may have had. I suspect, however, that the lower front area (about 1.25 metres from front to back) functioned as an exterior terrace-patio. The higher back area represented a raised building platform which may have been crowned by a perishable building. The plaster floor itself has been remarkably well preserved, and on the basis of extensive horizontal excavation, I estimate the area enclosed by the Phase 2 building to have been no less than 20 square metres. The total area on top of the Structure 1 platform would have been at least 27 square metres. The north side (back) of Structure 1, although confused by collapse debris, seems to have been built as a steep terrace wall from the top of the platform to the base of the plazuela.

## Structure 2

Structure 2 lies on the west side of the plazuela central area. At the beginning of excavation, the mound measured approximately 13 metres from north to south, and four metres in width. It was significantly lower than the Structure 1 mound, measuring less than one metre at maximum height. Some very limited looting may have taken place at the northwest corner of the mound, but this seems to have caused little disturbance of the architectural features under the surface.

Our recovery of well preserved plaster floors within the Structure 1 mound led us to believe that such features might be evident as well within Structure 2. Two small units were dug into the top of the mound to test that expectation. These units revealed not only a series of superimposed plaster floors, but other important architectural details as well. Subsequent trenching along the structural midline, as well as some limited horizontal exposure, helped to further define the construction sequence for Structure 2. That chronology, as well as can be reconstructed, is strikingly similar to the Structure 1 building sequence. In the case of Structure 2, however, the architectural stratigraphy is represented by four construction phases. This sequence is as follows:

Phase 1 - The construction of the original K'ik' platform.

As is the case with Structure 1, the initial construction of the large platform in the K'ik' locus seems to predate any

architectural considerations at Structure 2. The evidence for the earliest construction comes from the far east edge of the Structure 2 mound, and consists of a line of substantial cut-stones just above the bedrock level, with their faces toward the west. I suggest that this is the remains of the west facing wall for the initial platform, and as such belongs to the same architectural phase as the early stone wall described above (see Structure 1, Phase 1). Again, since this wall lies to the east of all Structure 2 architecture, and seems not to be associated with it, I believe that it belongs to a period in which no structure platform existed on the west side of the plazuela. And while it seems likely that this large raised platform supported perishable structures, there is, as yet, no evidence to suggest where they were located.

Phase 2 - The initial construction of the Structure 2 building platform.

In a situation very similar to that at Structure 1, the initial construction of a structure on the west side of the plazuela seems to have significantly increased the total size of the K'ik' group. During the earliest phase of construction on the west side of the plazuela, nearly half a metre of loose fill was deposited on bedrock, and was capped by a thick plaster floor. The resulting platform was only slightly raised above the plazuela central area, although there is some evidence to suggest that the east (front) side of this small platform was faced with stone. A unit placed at the south end of the mound shows that the initial plaster-capped

fill platform extended the limits of the plazuela further south than its original dimensions. A perishable structure was almost certainly built on top of this new platform, and likely faced into the central area.

Phase 3 - Additional construction on top of the original Structure 2 platform.

During this phase, the K'ik' residents added more fill and a new plaster floor to the surface of the earlier platform. The front face of the earlier platform seems to have continued in use; the new construction simply added another step to the east side of the structure, approximately 80 cm to the west of the original. This new front terrace face was not of stone, but merely dense and compacted plaster. Again, a perishable building likely stood on top of the Structure 2 platform.

Phase 4 - The final construction at Structure 2.

During the last building phase, a much more formalized building platform was erected. This entailed the addition of still further fill to the top of the earlier platform, and the laying down of a final plaster floor. The resulting platform was faced entirely by large, well-cut stones. At the front of the structure (its east side), these stones were placed directly in front of the earlier plaster step. Our excavations defined the north and south ends of this final terrace, and we noted that the cut-stone facing continued along these areas as well. No architectural details were

recovered from the back (west) of Structure 2; erosion seems to have completely obliterated that side of the mound.

Horizontal exposure of architectural features from this final period has revealed interesting construction data. Our ability to define three of the structure's four sides allowed us to estimate the floor area of the building at no less than 16 square metres. (In fact, the area is likely more, given the erosion which has cut away a portion of the structure's west side.) Furthermore, this terminal construction phase revealed the only evidence found at the K'ik' group to support the idea of perishable buildings crowned the summit of the building platforms. Specifically, a posthole was discovered in the final phase plaster floor, near the middle of the platform itself. This posthole may have been used to hold a wooden support beam of a pole-and-thatch building.

#### Feature 1

Feature 1 is a small tumulus that lies off the northeast corner of the plazuela platform. Our initial measurements showed it to be about seven metres long, and less than half a metre at maximum height. Its small size, and its position off the formal group, aroused our curiosity concerning its possible function. Since the other two structures had revealed such excellent architectural preservation, we expected to find similar features here.

Unfortunately, two excavation pits placed into the top of the mound revealed no structural information of any kind. No plaster

floors were evident, nor was the existence of any walls. In fact, the excavations recovered no artifacts, a situation we found very unusual. (All other units at the K'ik' group recovered large quantities of lithic and ceramic material.) As a result, we have not been able to create any solid hypotheses to explain the existence of Feature 1, nor can we suggest any possible functions for that feature. Many researchers have suggested (cf. Wauchope 1938; Tourtellot 1983; Leventhal and Baxter 1988) that common features of Maya households were ancillaries, or buildings which had a non-residential function such as kitchens, shrines, etc. These have usually been postulated to be smaller than dwellings, and often physically separate, at least to a certain extent. If this model holds true, then Feature 1 at the K'ik' group could be classified as an ancillary. However, in the absence of supportive architectural or artifact evidence, any such claim must remain merely a "best-guess".

#### DISCUSSION

As the preceding data indicate, one of the most striking aspects of the K'ik' investigations has been the discovery of such an excellent state of architectural preservation. The degree to which we have been able to document plaster floor sequences, terrace remodelings, and general plazuela expansion exceeds all expectations. While in general, the nature of the preserved archaeological record at Cahal Pech has been very good, the degree to which the outlying groups have survived is not repeated at all

sites in the Belize Valley. At the nearby site of Blackman Eddy, for example, investigation into a similar plazuela group revealed comparatively poor architectural information (Goldsmith 1992). At the K'ik' group, the quality of the archaeological record has allowed us to begin to address certain important issues concerning the development and maintenance of society around the site of Cahal Pech.

Ceramics recovered from the deepest architectural strata at K'ik' suggest that the group was first occupied well into the latter half of the Classic Period. The fact that a new, formally arranged group was established during this period suggests that by the Middle Classic period (A.D. 550 - 700), Cahal Pech was enjoying a certain economic strength, and was witnessing an expansion in population. Architectural data in the site core agree strongly with such a suggestion (Awe and Campbell 1988:41). However, the questions of why the K'ik' group was first established, and how it functioned in the greater picture of Cahal Pech, deserve some further consideration.

First, there can be little question by this point that the primary function of the K'ik' group was residential. That conclusion may not be surprising, considering that in the majority of cases, plazuela groups in the Maya heartland have simply been assumed to have such a function. However, it is not on the basis of such an assumption that I have assigned a residential function to K'ik'. Instead, supportive evidence is as follows:

1. No information has been recovered to suggest that any of

the three structures, or the central area itself, held any kind of ritual significance. This would be expected if the K'ik' group was a ritual locus, and not used for everyday living. It may be noted that this constitutes an "absence of evidence" - in itself a weak argument. However, in concert with the following points, the absence of ritual data strengthens the residential hypothesis.

2. The floor areas of the K'ik' structures, while a bit below average for household structures in the Peten, are not preclusive to residential house sizes. Tourtellot (1983:37) states that many prehistoric dwellings (further north in the Yucatan Peninsula, and also in the highlands) have floor areas of less than 15 square metres. At Tikal, the average dwelling size is about 40 square metres, but Tourtellot also lists buildings of 25 square metres as houses.

3. The artifact record recovered from all levels at the K'ik' group supports the notion of domesticity. The majority of ceramics represented are of plain, utilitarian wares - the type of items that one might expect to be used and discarded in everyday contexts. Abundant lithic debris hints at the possibility that tools may have been produced by and for consumption by the K'ik' residents. The existence of other "household" tools also reinforces this argument. For instance, numerous fragments of manos and metates, as well as many fragments of use-worn obsidian blades were recovered in the excavations. We might expect all of these things to be discarded as the result of a daily household routine, and to eventually provide fill for future episodes of



architectural activity at the K'ik' group. Certainly it can be argued that the fill deposits at K'ik' are not necessarily of K'ik' origin. It seems likely, however, that the use of the nearest materials (i.e. those in K'ik' middens) would be chosen most often simply because of their proximity.

4. The layout of the K'ik' group in a formal plazuela echoes similar plans at other parts of the Maya area in which household research has been carried out. Willey's Belize Valley research is an example of such plazuela excavation, and his conclusions with regard to function are similar to those made here (Willey 1965:11). Tourtellot's extensive excavation of peripheral groups at Seibal also supports the idea of residential plazuelas (Tourtellot 1988b).

The issue of function at the K'ik' group thus seems quite clear. On the other hand, the question of status at the K'ik' group has remained more ambiguous. Our excavations, while bringing a lot of suggestive materials to light, have also resulted in some seeming contradictions. Consider, for example, the relationship of K'ik' to the site core. First, the K'ik' group is arranged in a very formalized manner - a residential configuration which sets it apart from isolated mounds and random small mound clusters. It shows architectural qualities, such as large cut-stone terraces, thickly plastered floors, and a nearly 300 square meter platform, all of which suggest a relatively large expenditure of energy in construction. The ceramic record contains a concentration of polychrome pottery, generally assigned an "elite" function by ceramicists. All of the above pieces of evidence seem to suggest

that the occupants of the K'ik' group held a relatively high status with respect to other groups. However, not all lines of evidence agree. The sizes of the two plazuela dwellings at K'ik' are estimated at nearly 20 square metres each - just barely the minimum suggested by Ashmore (1981:47) as a necessary dwelling size. We might expect that higher status houses were larger than those with lower status, but if the other indicators are correct, this is not the case at the K'ik' group.

Issues of status within the K'ik' group should be noted as well, since it would be unwise to assume that all K'ik' occupants shared an identical social position. Structure 2, for example, was slightly smaller than Structure 1, and was certainly never raised as high above the plazuela central area. If we can equate size and height to status, and if we assume that different individuals were occupying the two K'ik' structures, we might suggest that the occupants of Structures 1 and 2 shared slightly different social positions with respect to each other. On the other hand, we might also suggest that the size difference of the two building platforms simply implies differing functions, or even slightly differing ages. The interpretation of status among K'ik' residents has been hindered by a complete lack of burial information at the group. Such burial (and burial goods) information would have aided greatly the reconstruction of individual social stature, as well as the wealth of the K'ik' group in relation to its neighbours and the site core. The absence of burial information is interesting in itself, and I offer a possible explanation below.

It is the relationships between K'ik' and the other groups around Cahal Pech that must remain most elusive to definition. Clearly the K'ik' group functioned in a larger sense as a part of the Cahal Pech site framework; that much is beyond debate. However, what remains unclear is the interaction that must have occurred between the site core and the K'ik' residents. Can the formality of the K'ik' group layout be seen as somehow elevating the K'ik' residents above the status shared by most of the surrounding population? If this is the case, it would be easy to develop a model for core/periphery interaction which saw the K'ik' group as a liaison to both the site-core elites, and the rural population. Such a social position need not have been that of "referee" between the classes; certainly it is possible that the K'ik' group was simply an extension of the site core, with an interest solely in the promotion of core interests. Yet such speculations, however intriguing, cannot easily be put to the test, and it is for this reason that any discussion of status must remain more vague than desired.

To a certain extent, the interaction of K'ik' residents to neighbouring outliers also remains an issue of speculation. It must be noted, however, that the K'ik' group shares a rather immediate proximity to another formal plazuela - the Zotz group. In fact, the Zotz group is quite clearly more substantial in its layout than is K'ik'. The Zotz plazuela is also built on a raised platform area, and contains not two, but four structures arranged in a quadrangular configuration. Zotz also possesses a chultun, or

storage chamber; the K'ik' group does not. Many burials have been recovered from the Zotz structures; none have been found at K'ik.

Furthermore, the Zotz group seems to have a much longer occupational chronology than does the K'ik' group. Zotz was first established in the Middle to Late Preclassic, K'ik' near the Late Classic. When the above information is examined altogether, it becomes hard to create a model for outlier interaction in which the K'ik' and Zotz groups are not very closely related. It does not even seem unreasonable to hypothesize a situation in which the initial development at the K'ik' group arose out of Zotz itself. That initial tie, and likelihood of a continued close relationship, might be used to explain certain inconsistencies at the K'ik' group. The absence of burials, unusual in itself, might be explained if we accept the possibility that K'ik' residents continued to use "ritual space" long established in the Zotz plazuela. The absence of chultuns at K'ik' is less problematic if we accept that the occupants of the K'ik' plazuela were interacting with Zotz on a day-to-day basis.

Again, the entire argument for K'ik'/Zotz interaction is based largely on circumstantial evidence. To date, no causeway has been found which links the two groups (although a search has been carried out). As well, no clear artifact evidence exists to support such an intimate relationship. However, in the absence of such absolute confirmation, the evidence which exists creates a strong supportive argument for close, interpersonal ties between the Zotz and K'ik' people.

## CONCLUSIONS

During the 1991 excavations at the K'ik' group, we hoped to recover information which would tell us something about developments in the Cahal Pech periphery over the long occupational period of the site. We anticipated that by digging at a reasonable sample of outlying mound groups, we would be able to build a picture of cultural processes that would contribute to our understanding of Cahal Pech and the Upper Belize Valley. While this report remains a preliminary examination of the 1991 season, I think it is already clear that our excavations in the Cahal Pech periphery (including the K'ik' group) have provided some valuable insights. The next step, it would seem, will be to conduct similar projects at other sites in the Belize Valley, and to continue to examine the results in a holistic sense. It is only then that we may begin to grasp, in a more general way, the framework of which each household group was a small part.

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PRELIMINARY EXCAVATIONS AT THE TOLOK GROUP: A SETTLEMENT  
CLUSTER IN THE SOUTHEASTERN PERIPHERY OF CAHAL PECH, BELIZE

BY

TERRY G. POWIS

INTRODUCTION

Regional analysis at Cahal Pech suggested the presence of a substantial support population around the central precinct beginning in the late Middle Formative period (650 - 350 B.C.). One of the primary goals of the 1991 field season was to confirm this long history of occupation through excavations at five settlement groups on the immediate periphery of the site core.

This paper will report on the preliminary investigations (1991) of one of these settlement clusters known as the Tolok Group. Following Haviland (1978:44-46), the Tolok Group investigations are based, in part, on answering a number of questions concerning social differences, population estimates and contemporaneity of mounds within a "group" of mounds. Present analysis of site data combined with field work in the summer of 1992 will further increase our understanding of the settlement patterns and the artifact assemblages. This aggregate information will be useful in establishing both inter-site and intra-site chronological and spatial relationships.

SITE SURVEY

The Tolok Group was first discovered during reconnaissance of the southeastern periphery of Cahal Pech in 1989. At this time J. Awe and D. Cheetham noted two large mounds (later identified here

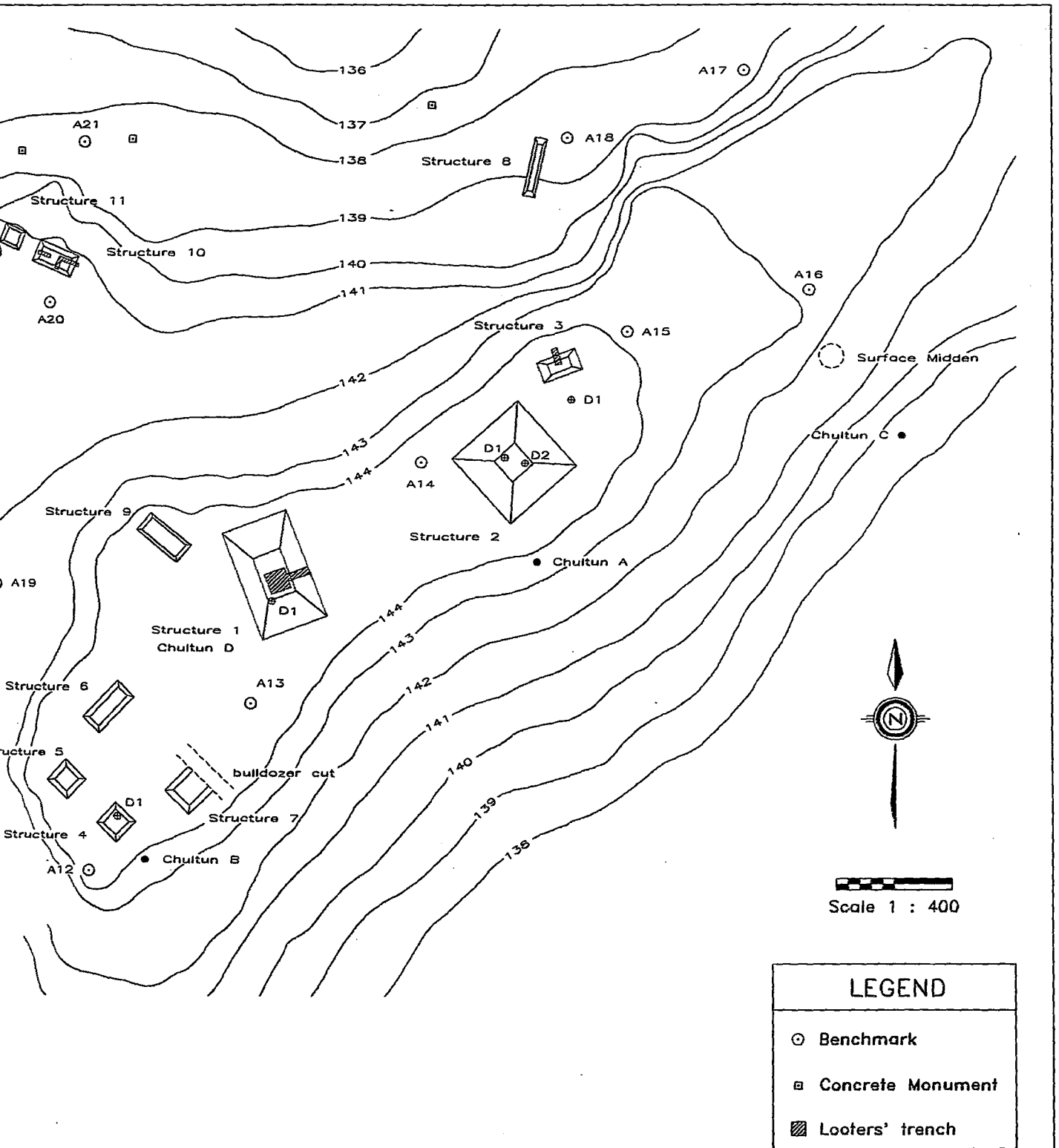


as Str.1 and Str.2) on an asymmetrically shaped ridge. During the 1991 season a more extensive survey and mapping project was conducted to determine the extent of the Group. Since local farmers had cleared and burned the area for milpa, it provided optimal survey conditions to record all the mounds in the settlement cluster and to do an extensive surface collection.

The 1991 survey located an additional 9 mounds (Str.3 - Str.11) on the ridge. These mounds, including Str.1 and Str.2 previously recorded in 1989, form the Tolok Group (Fig. 1). To the north of Str.1 and Str.2 are three mounds (Strs.8, 10 and 11) which are located at a lower elevation on the same ridge. Str.3 and Str.9 are found in close proximity to Str.2 and Str.1, respectively, with four mounds (Str.4 - Str.7) forming a small patio group at the southern extent of the ridge. Four chultuns were discovered in the Tolok Group. Chultuns A, B and C are located downslope on the south side of the ridge, while Chultun D was discovered beneath Str.1 and exposed by a looters' hole. Chultuns A and B are located adjacent to Str.2 and Str.4, respectively, while Chultun C was found at the northeast end of the ridge, near a large surface midden.

#### SITE DESCRIPTION

The Tolok Group is located 350 m southeast of the site core and 250 m east of the major settlement cluster known as the Tzinic Group. The Group covers an area of 17,700 m<sup>2</sup> or 1.8 hectares, and



# Tolok Group, Cahal Pech Cayo, Belize, 1991

Plan and Survey by : S.M. Brisbin

Figure 1

is situated on a long narrow ridge which is separated from the site core by a dry creek bed with an east-west orientation. The mounds and the chultuns are on land owned by Mister Carlos Habet of San Ignacio Town, who kindly allowed us to work on his property.

Eleven mounds, four chultuns and a surface midden comprise the settlement at Tolok (see Figure 1). Str.1 and Str.2 are the major mounds of the Group and are located on the highest part of the ridge. These mounds are adjacent to each other and are possibly connected by a sacbe. Both Str.1 and Str.2 measure just under 3 m in height, while the rest of the mounds generally do not exceed 1.5 m. The majority of the low-lying mounds are concentrated around Str.1 and Str.2 in a spatial configuration that fits Ashmore's (1981:51) definition of a "Structure-Focused Patio Cluster".

### EXCAVATIONS

Excavations began in 1991 with the intent to record as much information about the Group's diachronic history, structural features, and artifact distribution, in order to understand the site's culture history. This data will subsequently be used to determine the relationship between Tolok and the site core, and for ascertaining the position of the Group within the site's settlement hierarchy. Since several mounds and archaeological features were not tested this year, the results provided in this paper are preliminary in nature. Described below are the results of the present findings.

**Structure 1** This is the largest mound of the group. It measures 2.7 m in height and has a base of 20 m x 12 m. Prior to the 1991 field season, a deep looters' hole and trench had destroyed a large part of the mound and altered its morphology. The looters' trench is 4 m x 1 m and extends from the east side to the summit of the structure. The looters hole descended in a 4 m x 4 m vertical tunnel from the summit of the mound toward bedrock.

A 1 m x 1 m unit was placed in the looters' backdirt at the inner base of the mound to salvage as much architectural and artifactual information as possible. At a depth of 1.7 m below collapsed rubble and looters' backdirt an undisturbed midden was found. The midden was directly above bedrock and varied in depth from 20 cm to 46 cm. Ceramic analysis dates the midden layer to the late Middle Formative period (650 - 350 B.C.).

Within the midden there was a large faunal assemblage consisting mainly of freshwater bivalves (*Nephronaias ortmanni*), jute shells (*Pachychilus glaphyrus*), bony fish (*Osteichthyes*) and white-tail deer (*Odocoileus virginianus*) remains. Ground-stone tools were noticeably absent from the midden relative to the number of mano (1) and metate (8) fragments found in the looters' backdirt.

The looters hit bedrock in one area exposing Chultun D which is located at a depth of 5.8 m from the summit of the mound. They also disturbed the fill inside the chamber of the chultun. Ceramics recovered around the chultun are dated to the same time period as the midden. West of chultun D lay another possible chultun,

however, no attempt was made to excavate this feature due to the instability of the overhead fill.

A single construction phase was recorded in the looters' hole and ceramic analysis suggests that this initial structure was probably erected during the late Middle Formative period. In addition to Mamom-related pottery we recovered several anthropomorphic figurine fragments, incensario pieces, and the strap handles and spouts of about four chocolate pots. The strap-handled chocolate pots are similar to the specimens recovered at Colha in Northern Belize (Valdez 1987:101).

The looters' backdirt complicated matters as it was piled to the west end skewing the physical shape and orientation of the structure. Because of this, a second unit measuring 4.0 m x 1.5 m was placed on the south side of the mound. The excavation recorded four thick plaster floors and the end of a north-south aligned wall. The excavation also exposed the step or landing of an early Late Formative building platform. Due to continual collapse of the baulk, however, the unit was halted. The construction fill was made of dry stone core masonry, consisting predominantly of large and medium rubble in the lower levels, and ballast and medium-size rubble in the upper levels.

Ceramics from the earliest level of Unit 2 date to the early Late Formative period. Other artifacts recovered from this level included two anthropomorphic figurine and whistle fragments, jute shells (*P. indiorum*) and freshwater bivalves (*N. ortmanni*).

## Structure 2

Str.2 is the second largest mound of the Group. It is 2.6 m high and measures 15.6 m x 15.6 m at its base. No looting was observed on the mound. Two units were excavated on Str.2. The first was placed at the summit of the mound and measured 2 m x 2 m. The second unit measured 3.0 m x 1.5 m and was placed on the south side of the mound. Four plastered floors were recorded in the two units. They had an average thickness of 3 cm and were separated by construction fill composed primarily of dry stone core masonry. The fill between floors in the later levels was medium size rubble and ballast with marl and ballast predominating in the earlier levels. The penultimate phase of construction, which dates to the terminal Late Formative period, contained a building platform with three intact walls that extended into both units. The longest wall was 3.7 m in length running in a north-south direction.

In the second unit, the excavation exposed another corner wall of a building platform. The north-south wall measured 3 m in length and was oriented in the same direction as the structure above it. The ceramics recovered from within these walls date the structure to the Late Formative period. Ceramic analogy also suggests that the earliest construction phase exposed in the unit dates to the late Middle Formative period.

A third unit measuring 1 m x 1 m was placed at the base of Str.2 to determine if there were plaza floors or a sacbe connecting Str.1 and Str.2. Several stone slabs (approximately 10 cm thick) uncovered in the excavation indicate a sacbe similar to the one connecting the southern end of Group I and Group II at Baking Pot

(Willey 1965:301). There was also a poorly preserved plaster floor, 2-3 cm thick, beneath the stone slabs. Among the many artifacts located between the stone slabs and floor was a small projectile point 2 cm in length. These types of miniature projectile points have the greatest frequency during the Terminal Classic and Late Postclassic periods (Shafer and Hester 1988:112). This information, plus the presence of a large quantity of ash-tempered, Belize Red pottery, indicate a possible Late Classic date (750 - 900 A.D.) of construction for the plaza floor.

### Structure 3

Str.3 is a low-lying mound 1.2 m in height with a base measuring 7 m x 4 m. It is located to the north of Str.2 and is connected to it by a sacbe possibly similar to the one joining Str.1 and Str.2. A looters' trench, 3.5 m x 1.0 m, bisected the primary axis on the north side of the mound destroying the terminal phase floor. A 2 m x 1 m unit, which encompassed the looters' trench, was placed at the top of the mound. After clearing the looters' trench, the unit was expanded to 3 m x 2 m. Three walls representing a series of small additions to a building platform were recorded in the unit. Based on ceramic data, the construction of the walls date to the Late Classic period (700 - 900 A.D.).

Two 1 m x 1 m units placed at the north and south ends of unit 1 exposed a total of six floors. The floors are thin, averaging 2 to 4 cm in thickness, and display no evidence of replastering. All of the floors date to the Late Classic period with the exception of the earliest level which dates to the Late Formative period. The number of successive floors during the Late Classic may suggest a

period of continued architectural development occurring in response to an increase in population.

In the south unit the excavation uncovered two preserved walls forming the corner of another Late Classic building platform directly above the Late Formative level. This platform was located off the south side of the mound below the level of the sacbe(?) at a depth of 88 cm. The orientation of the platform paralleled the Late Classic structure above it.

The large ceramic assemblage recovered from the Late Classic levels was predominantly utilitarian and closely related to the ceramics found in the surface midden (described below). Other artifacts identified from the Late Classic levels are: obsidian blades, projectile point preforms, unifacial scrapers and a drilled conch shell pendant. The artifacts from the Late Formative level are fewer in number and included ceramics of the Polvero and Sierra groups, plus chert flakes and jute shells (*P. species*).

#### Structure 4

Str.4 is the most southern of four low-lying mounds that form a small patio. With a height of 1.5 m and a base measuring 5 m x 5 m, it is also the largest mound in the patio. Either of the four mounds in this particular plazuela could have been excavated this year, but Str.4 was chosen because of its possible association with Chultun B. A 1 m x 1 m unit was placed at the top of the mound, but was later expanded to 2 m x 2 m when the remains of a terminal phase building platform were uncovered. Just below surface two well-preserved walls, made of thick cut-stones three courses high,



were found. The walls did not form a 90° angle but may have shifted as a result of natural processes. The excavations uncovered three more floors below the terminal architectural phase, ranging from 4 cm to 8 cm in thickness. The construction fill between these floors was consistently composed of small ballast and compacted soil. Comparatively, the fill was similar to the wet-laid material found in the earliest levels of Str.1 and Str.2.

The earliest level of occupation at Str.4 dates to the late Middle Formative period. In fact, with the exception of the terminal phase of construction which dates to the Early Classic period, all four sub-levels date to this time period. The terminal phase structure is also the only definite Early Classic component found at the Tolok Group to date.

The artifacts from this period coincide with the cultural remains found within the two stratigraphic levels inside Chultun B (described below). No faunal remains, however, were recovered from the Early Classic component, while in Formative levels they included freshwater bivalves (*N. ortmanni*) and jute shells (*P. glaphyrus*). Conversely, lithic artifacts (i.e. chert cores, flakes, and debitage) were few in the Formative phases, but more numerous in the Early Classic level.

#### Chultun B

<sup>e</sup> This lateral-chambered chultun (Puleston 1971:323) is located 5 m downslope on the southeast side of Str.4. The three lateral-chambers are located to the east, west and south of the chultun orifice and the entrance was originally capped by a covering stone

60 cm in diameter. The covering stone was found in fill 90 cm below the orifice of the chultun. The fill inside the chamber was primarily compacted soil and ballast. Excavation of the chultun indicated that sometime after its construction the Maya intentionally filled in most of the chambers. Some soil was subsequently deposited through the orifice by natural erosion. No evidence of plaster was detected on the walls of the chultun, but the remains of a 4 cm thick lime-plastered floor was found about 120 cm below the orifice of the chultun. This poorly preserved floor covered most of the three chambers. No antechamber or sill was found in the chultun.

Many artifacts were recovered from the two levels inside the chultun. At the end of the plastered floor in the southern chamber, a well-preserved Platon Punctated-Incised vessel was discovered. A second broken, Silk Grass Fluted, vessel containing 2 obsidian blades was found in the fill between the floor and bedrock in the same chamber. The vessels date to the Spanish Lookout and the Tiger Run phases of the Late Classic period, respectively, and suggest that the chultun may have been in use throughout the Classic period.

To the west of the collapsed covering stone excavators uncovered a simple burial. The juxtaposition and poor preservation of the bones in the fill suggests that it may have been a secondary interment. Most of the bones recovered are also fragmented, but those identified include about 10 severely worn teeth, plus cranial and long bones. The identification of the individual's age or sex was not determined, however, preliminary analysis indicates that

some pathologies may be present. The burial had a north-south orientation with the cranial bones and teeth located at the north end. Approximately 20 cm below the burial, and just above the floor, there was an intact Platan Punctated-Incised vessel with hollow oven feet and enclosed rattles. A small projectile point with a missing tip was also found beside the left tibia. These associated artifacts suggest that the burial dated to the Late Classic period. The other two vessels found in the south chamber may also be associated with the burial.

Non-ceramic artifacts within the chultun included a piece of worked (drilled) mammalian bone (identified as either red brocket or white-tailed deer), 2 obsidian blades, a projectile point preform fragment, chert flakes and core fragments, jute shells (*P. species*) and pomacea shells (*Pomacea flagellata*).

Much has been written on the function of chultuns (cf. Puleston 1965, 1971; Reina and Hill 1980; and Dahlin and Litzinger 1986), but to maintain the preliminary scope of this report, only a few comments will be made here. The function of this chultun may have changed through time. Initially, it may have served as either a storage area for water, foodstuffs, famine foods or alcoholic beverages. Later, the chultun was used as a burial place possibly for a family member from the nearby patio. It is possible that the burial also served as some kind of termination ritual for the chultun in the Late Classic period.

A total of six soil samples were taken from within the three chambers and from the burial. Any carbonized plant remains

recovered from the flotation analysis will hopefully shed light on the function of the chultun. The present data nevertheless suggests that the chultun initially had an agriculturally related function, then later served a specialized purpose (grave) for the residents of the Group.

### Surface Midden

The surface midden, which is located 41 m from Str.3 and 56 m from Str.8, was only discovered as a result of the burning of the milpa. Artifacts in this feature were scattered over a large area but the major concentration was approximately 4 metres in diameter. A 1 m x 1 m unit was placed in the middle of this concentration to obtain artifactual information and to establish a diachronic chronology. The soil depth was 18 cm and no layers or lenses were discernible. The shallow depth of the soil may be the result of erosion through extensive slash and burn agriculture.

The majority of the artifacts found in the midden are ceramic with a few chert cores and debitage. Most of the ceramics are large pieces of rims and bases of utilitarian wares that are eroded and burned, probably as result of milpa clearing. Analysis of the pottery suggests that the midden dates to the Late Classic period.

### SUMMARY AND DISCUSSIONS

Located in the southeastern periphery of Cahal Pech, the Tolok Group demonstrates evidence for continuous occupation from the late Middle Formative through to the Late Classic period. During the initial phase of occupation the Group may have consisted of a few simple pole and thatch dwellings constructed above lime-plastered

building platforms. As population increased during subsequent phases, several new structures were added to the group and the height and size of some existing architecture was increased. The periods of greatest construction activity at the site core occurred during the Late Formative and Late Classic periods (Awe 1992) and these developments are reflected, although on a much smaller scale, at the Tolok Group.

The lack of substantial monumental architecture and the low frequency of wealth/status goods indicate that the inhabitants of the Tolok Group were probably a residential farming community. These characteristics are in contrast with the Tzinik Group to the west which has two large pyramidal structures, a stela, a small reservoir, and a higher frequency of elite goods (Conlon and Awe 1991).

Preliminary analysis of the data recovered during the 1991 field season also indicates that from the earliest phase of occupation (650 - 350 B.C.), Tolok was closely integrated with the larger Cahal Pech community. This inter-relationship is suggested by the similarities in the artifact assemblages, and construction techniques of the site core, other peripheral settlements, and the Tolok Group. Further study of intra-site chronological and spatial relationships are, however, necessary before any conclusions can be substantiated.

Future investigations of Str.5 through Str.11 during the summer of 1992 should increase our understanding of the Group's diachronic history, help to clarify Tolok's relationship with the site core,

and provide clues regarding its position within the site's settlement hierarchy.

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INVESTIGATIONS AT THE CAS PEK GROUP  
IN THE WESTERN PERIPHERY OF CAHAL PECH

BY

JAIME J. AWE, JULIAN VINUALES, MERCEDES VELASCO AND ROBERT NOVELA

INTRODUCTION

Excavations in the western periphery of Cahal Pech were began in 1991 in order to determine the diachronic pattern of settlement within this section of the site's sustaining area. The work was conducted under the supervision of Julian Vinuales and Mercedes Velasco of the Institute of Archaeology (University College London), and under the general direction of the senior author. The 1991 research concentrated on a large settlement cluster which was designated as the Cas Pek Group. Investigations focused on this group because several mounds in the settlement were on the verge of being destroyed by a new housing project.

DESCRIPTION OF THE CAS PEK GROUP

Cas Pek is a patio-focused settlement cluster located about 150 m west of the site core. At the center of the group there is a large raised platform which is crowned by four mounds spaced in an informal configuration (Fig. 1). Scattered around the central platform there are at least eight other mounds of varying sizes, and the large western reservoir lies 50 m east of the raised platform.

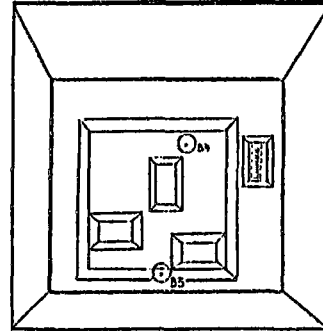
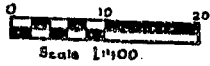


CAS PEK GROUP  
 CAHAL PECH,  
 CAYO, BELIZE

Plan & Survey by: S.M. Brisbin

STR. 11

STR. 12



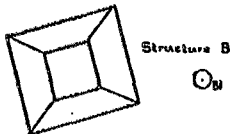
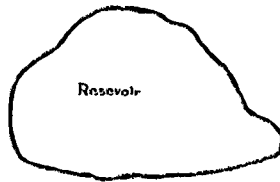
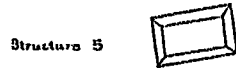
Structure 4

Structure 3

Structure 1

Structure 2

B2



STR. 9



STR. 10

Legend	
○	Benchmark
△	Concrete Monument

Fig. 1: Map of the Cas Pek Group, Cahal Pech, Belize.

## INVESTIGATIONS

Prior to the 1991 season two of the mounds (Strs. 2 and 3) on the central platform had been looted, and Structures 10, 11, and 12 had been practically levelled by land development activities. During consultation with the present land developer we were also informed that the reservoir was to be filled in, and that several other mounds (Strs. 5, 6, and 7), and a large part of the raised platform, were to be destroyed by the construction of roads into the housing subdivision. In response to this development plan we decided to focus our investigations on Structures 1, 4, 5, 6 and 7, and we agreed (with the landowner) to oversee the careful bulldozing of the structures slated for destruction. These investigations revealed that the Cas Pek Group had a long continuous history of occupation, spanning from the Late Middle Formative through to the Late Classic period.

Most of the data pertaining to Formative period occupation was recovered in the centrally located raised platform. Excavations, and a bulldozer cut, within this large structure exposed a sequence of seven platform floors and uncovered six cist burials. The earliest floor (Floor 7) was 3.8 m below surface. It was constructed of lime plaster over fill and contained ceramics that were typical of the Middle Formative Jenney Creek complex at Barton Ramie.

During the Late Formative three consecutive floors (Floors 6,

5, and 4) were constructed above the initial platform and four burials associated with these modifications were uncovered. The earliest burial, which intruded into Floor 7 but was associated with Floor 6, contained a red-slipped jar with vertical grooves and a flat base. According to Ball (personal communication) this jar shares characteristics with specimens from both the Joventud and Sierra ceramic groups, thus the vessel and the burial probably date to the early part of the Late Formative period. The second burial was located below Floor 5 and contained a single Sierra Red flaring-side dish. The other two Formative period burials were deposited next to each other and capped by Floor 4. Between these two interments there were two (one complete and one severely fragmented) ceramic vessels, three spindle whorls, four bone pins, and six obsidian prismatic blades. The whorls are among the earliest specimens made from stone in the central Maya Lowlands. The complete vessel is represented by a small jar with affinities to Late Preclassic Chan Pond Unslipped pottery from Barton Ramie. The fragments of the poorly preserved vessel shares similarities with both the Polvero and Balanza ceramic groups.

The last three building platforms of the central patio were all constructed during the Classic period - Platform 3 during the Early Classic, and Platforms 1 and 2 during the Late Classic. There were also two burials below Platform 3, but none contained grave goods.

Apart from the raised platform, only Strs. 9 and 10 have so far produced evidence of Formative period occupation at Cas Pek. Interestingly, at the start of the investigations the research team was completely unaware of Structure 9, and this "hidden" structure would have been missed had it not been exposed during the construction of a roadway by the bulldozer. The structure was completely concealed under a level section of land about 12 m northeast of the reservoir. It consisted of a single large platform which was constructed, occupied, and abandoned during the Late Formative period. This short history of occupation is unusual at Cahal Pech and there are few clues as to why the platform was only used for such an abrupt period of time. The accidental discovery of the platform, nevertheless, indicates that more often than not "hidden structures" are rarely recorded by most settlement studies.

Excavations on the largely destroyed Str. 10 exposed sections of three fragmented floors. Pottery below the earliest floor included material which was typical of the Savana, Sierra, Aguacate, Paila, Chan Pond and Monkey Falls ceramic groups. These types fall within the Middle and Late Formative periods thus indicate that the initial architecture in Str. 10 dates to the Late Preclassic. Pottery below the two uppermost floors were predominantly Classic period types. They suggested that the penultimate phase of Str. 10 dated to the end of the Early Classic, and that the terminal phase was constructed during the Late

Classic.

Excavations within Structures 5, 6, and 7 produced no evidence of Formative occupation, and only Str. 7 contained an Early Classic level of construction. All the other cultural levels within these mounds date to the Late Classic period.

### CONCLUSION

Rather than presenting a summary of the sequential development of architecture in the Cas Pek Group, we will provide a preliminary discussion of the cultural processes which might have led to the formation and expansion of this settlement cluster. It is important to note, however, that investigations at Cas Pek will continue in 1992. The statements made herein should therefore be considered tentative, particularly since future information may lead to revisions in our interpretation.

At present our data indicates that settlements were established in the western periphery of Cahal Pech as early as the seventh century B.C. These initial settlements probably consisted of small nuclear families who fissioned from the previously established group in the site core, or from some other peripheral group at the site. As these small families moved into the periphery they founded homesteads in areas with good agricultural land and access to water. We believe that the homestead of the founding family of the Cas Pek Group was probably constructed in the location of the central platform. This dwelling, which is

represented by the initial construction phase in this structure (Floor 7), probably consisted of a perishable building above a well-made, lime-plastered building platform.

By Late Formative times the population of the Cas Pek Group had apparently increased in number. This is suggested by the construction of several new dwellings around the central platform, and by three successive modifications which increased the size of the latter. One of the Late Formative structures -Str. 9 - was constructed, used, and abandoned, all within this time period. Why this dwelling, which contained the simple grave of one of its inhabitants, was deserted after a relatively short span of time is difficult to explain with any degree of accuracy (particularly when we consider that all the mounds tested display evidence of prolonged occupation). It could be that the occupants decided to move their residence to some other section of the settlement, or that one or both adult members of the household died and the survivors moved in with other relatives.

During the Early and Late Classic periods the population at Cas Pek continued to grow and several new dwellings were added to the settlement. The ancestral home of the founding family also increased in height and size, and it remained the central cog within this extended family cluster right through to the abandonment of the site in the 10th century A.D. This diachronic continuity is interesting for it indicates that ancestor worship,

or the hereditary power and/or importance of lineal heads, was a tradition that persisted throughout the history of Maya culture. In non-western societies, this practice continues even today and is still evident in the role played by elders within native american and oriental cultures.

So far little has been said about the function of the Cas Pek Group. This omission, however, reflects the lack of conclusive evidence rather than hypothetical possibilities. Regardless of this situation, the absence of artefacts associated with workshops of any kind may indicate that the Cas Pek were probably involved with agricultural production, or that they provided support service to the elite in the site core. Future investigations may, or may not, support this tentative interpretation, but given our present data base it appears to be the most plausible livelihood of this peripheral population.

A BRIEF REPORT OF PREVIOUS AND RECENT INVESTIGATIONS  
IN THE NORTHERN PERIPHERY OF CAHAL PECH, BELIZE

BY

JAIME J. AWE

INTRODUCTION

Prior to the Trent University/Institute of Archaeology project, the only reported investigations in the northern periphery of Cahal Pech were Willey and Bullard's (1956) work at the Melhado Group, and Joseph Palacio's (n.d.) brief examination of a chultun near the San Ignacio Hospital. This report will provide a brief description of these investigations, and will document the preliminary results of three salvage operations which were conducted in this section of the site's periphery.

THE MELHADO GROUP

Located on the northern outskirts of San Ignacio Town, the Melhado Group was briefly investigated by Willey and Bullard during their preliminary reconnaissance of the Belize River Valley in 1953. In a subsequent report, Willey and Bullard (1956) indicated that this structure-focused settlement cluster was comprised of 13 mounds dispersed on the second terrace above the Macal River. They (Willey and Bullard 1956:43) added that,

The limits of the site are not fully known. To the north and south the second terrace is covered with dense bush, and it is possible, or even probable, that more mounds of the same appearance and size lie in these directions. About 1 mile to the south of the Melhado group, on the hills overlooking the river valley, is the prehistoric Maya ceremonial center of Cahal Pech. It seems likely that the Melhado site was a village, hamlet, or



residential unit related to this center; and it is probable that other similar residential groups exist for several miles up and down the valley.

During their brief reconnaissance Willey and Bullard also excavated two mounds (Strs. 1 and 5) within the Melhado Group. Their investigations in Str. 5 revealed that this mound contained the remains of a low "earth and rock platform" which may have supported a "small domestic building" which "was occupied most intensively in the Late Classic" period (Willey and Bullard 1956:43).

On Str. 1, the largest mound in the group, they exposed "two principal constructional levels" and recovered pottery which was predominantly Late Formative in date. Because of the presence of Mamom and Tepeu related ceramics, Willey and Bullard concluded that the Melhado Group was continuously occupied from the Late Middle Formative to the Late Classic period. They also speculated that,

"The small cluster of little mounds (presumably of a domestic nature) grouped around the single pyramid mound suggests a village or hamlet unit in which certain religious and/or political functions were maintained on this local level" (Willey and Bullard 1956:44).

#### THE HOSPITAL GROUP

The Hospital Group originally consisted of a patio-focused settlement cluster dispersed around the present location of the San Ignacio Hospital compound. During the construction of the Medical Officer's residence in 1966 several of these mounds were destroyed, two complete ceramic vessels were found, and a multi-chambered chultun was uncovered (personal observation). After being alerted

of the discovery, Commissioner of Archaeology Mr. Joseph Palacio paid a brief visit to the site. Palacio subsequently reported (in a Department of Archaeology file card) that the ceramic vessels dated to the Classic period and that the chultun had three interconnected rectangular chambers. During the last four years I have also collected a small sample of pottery from the area around the chultun. This material includes a wide range of Classic period ceramics, plus Formative period pottery of the Savana, Paila, Sierra, Aguacate, San Felipe and Monkey Falls ceramic groups. This ceramic data suggests that the Hospital Group may have been occupied from the Late Middle Formative to the Late Classic period.

#### NORTHERN PERIPHERY SALVAGE OPERATIONS

During the 1989 season there was a marked increase in the construction of modern houses in the immediate northern periphery of Cahal Pech. In several cases these new homes were being constructed directly over prehistoric mounds. On three occasions members of the Cahal Pech Project were alerted of this situation and salvage operations were mounted in order to retrieve some data before the mounds were completely destroyed. A brief description of the information recovered by these investigations is provided below.

##### **Northern Periphery Salvage Operation 1**

This 1.5 m X 1.5 m unit was excavated into the remaining section of a small mound which was located approximately 50 m due

north of Plaza C. The mound, which was in the property of Mr. Andy Quan of San Ignacio, was in the process of being destroyed to make way for the construction of Mr. Quan's new home.

The excavation descended 1.48 m below surface and exposed five platform floors. The earliest floor (Floor 5) was well preserved and had been constructed above a layer of dark brown dirt which probably represents the original ground surface. Below the floor excavators recovered a few potsherds, some jute shells and a handful of lithic debitage. Except for a few Middle Formative types, the pottery was predominantly Late Formative in date.

Floors 4 and 3 were 20 and 26 cm respectively above Floor 5. The proximity and relative contemporaneity of these floors suggests that the former essentially represents a resurfacing of the slightly earlier Floor 4. Pottery below the two floors was predominantly Early Classic in date.

Floors 2 and 1 represent the penultimate and final construction phases on the Quan mound. Both platforms were poorly preserved and had been constructed of dry fill ballast capped by a layer of lime plaster. Pottery recovered below the two floors consisted primarily of Late Classic material. A few of the sherds from below Floor 1 were identical to Platon Punctated and MacCrae Impressed material from the Belize ceramic group at Barton Ramie.

In summary, the salvage operation at the Quan mound revealed a sequence of building platforms that span from the Late Formative to the Late Classic period. The first building platform was constructed during the Late Formative, it was later modified and resurfaced during the Early Classic, and was replaced by new platforms twice during the Late Classic period. In regards to function, the predominance of utilitarian pottery, and the simplicity of the architecture, suggest that the Quan mound probably served as a dwelling for a non elite family.

#### Northern Periphery Salvage Operation 2

This salvage operation was conducted about 80 m north of the site core in the area now occupied by a new water tower erected by the San Ignacio Town Board. Members of the Cahal Pech Project were first informed of the mound in July of 1989 after a bulldozer had levelled the land around the tower and exposed several fragments of human bone. When project staff visited the location, most of the bones had been unearthed by the local workmen. Since these remains were no longer in situ, we decided to excavate a small unit in the area where the bones had been discovered in order to determine their general context and date.

The unit measured 1.5 X 1.5 m and descended 0.75 m from the bulldozed surface to sterile level. This operation recovered three phalanges, and uncovered two platform floors.

The phalanges were found just below surface in a loose layer of ballast. Apart from these foot bones no other skeletal remains were recovered, but fragments of pottery in the matrix suggested that the burial dated to the Late Classic period. Since the layer of ballast is similar to the type of fill generally found below the lime-plastered surfaces of building platforms, it is possible that the interment may have been deposited beneath the floor of a destroyed Late Classic structure.

The first preserved floor (Floor 1) was located immediately below the layer of ballast, and 26 cm below surface. No evidence of a building was detected above this floor, but the platform may have supported a perishable building. Only a small number of potsherds were found below the floor, and these were predominantly Early Classic types.

The second building platform (Floor 2) was 24 cm below Floor 1. It was constructed of lime plaster above a dark grey and gritty layer of soil which overlaid sterile limestone. In the southeastern section of the unit the floor ended at a slight depression which contained a mixture of dirt, ash, and flecks of charcoal. The section of floor bordering the depression was also burnt, thus suggesting that the latter may have been part of a fire hearth. Cultural remains below the floor included part of a broken mano, an obsidian blade fragment, some jute shells, and a mixture of Middle and Late Formative pottery.

In summary, Salvage Operation 2 in the northern periphery revealed that this severely destroyed mound contained at least three phases of construction. The architecture of these construction phases were represented by three building platforms which were constructed during the Late Formative, Early Classic and Late Classic periods respectively. The presence of a fire hearth on the initial building platform, the predominance of utilitarian pottery in the mound, a mano fragment, and the simple burial of an adult individual, also suggests that the mound probably functioned as a residence for non-elite members of the Cahal Pech community.

### Northern Periphery Salvage Operation 3

Salvage operation 3 was conducted on a partially destroyed mound located about 800 m northwest of the site core, in a new housing area just beyond the western highway. During reconnaissance of the area in 1989 it was noted that three mounds of a small patio group had been completely levelled, and most of a fourth mound had been destroyed by a bulldozer. Since some of the pottery scattered over the surface included several Preclassic types, and because a major aspect of our research was to determine the extent of Formative period occupation at the site, we decided to place a small excavation on the preserved section of the fourth mound.

The unit measured 1.5 X 1.5 m and descended 1.65 m below surface. The excavation revealed sections of six plastered floors.

The first three floors (Floors 1, 2 and 3) were all within 40 cm below surface, approximately 5 cm apart, and poorly preserved. Only a few potsherds were recovered in the fill separating Floors 1, 2, and 3, and this pottery was predominantly Late Classic in date.

Floor 4 was in a fairly good state of preservation, but it contained no evidence of a superstructure. Pottery below this platform was a mixture of Late Formative and Early Classic types.

Floor 5 was 32 cm below Floor 4 and was fire-clouded in most of the area exposed by the excavation. Towards the eastern limit of the unit, and above the floor, there was a single row of cut-stones with a north/south alignment. To the west of this possible wall there were six postholes with an average diameter of about 15 cm, and an average depth of .45 m. These postholes and the wall suggest that Floor 5 was originally part of a building platform with a pole and thatch superstructure. The presence of Middle and Late Formative pottery beneath the floor also indicates that the building may have been constructed and occupied during the Late Preclassic period.

Floor 6 (the earliest floor) was approximately 10 cm thick and had been constructed directly above the old ground surface. The postholes associated with the Floor 5 building had also penetrated Floor 6, ending just above sterile level. Artefacts below the plastered surface of Floor 6 included several fragments of late

Middle Formative pottery (i.e. Savana Orange and Paila Unslipped) and five jute shells. This cultural material indicates that the building platform represented by Floor 6 dates to the late Middle Formative period.

In conclusion, Salvage Operation 3 indicates that the small patio group, destroyed by the housing project in the northern periphery, was initially occupied during the late Middle Formative and subsequently abandoned in the Late Classic period.

#### CONCLUSION

Investigations conducted by Willey and Bullard (1956) and by the Trent University Project indicate that settlements were already established in the northern periphery of Cahal Pech by the beginning of the late Middle Formative period. A large number of these scattered settlements are often represented by single structures which probably functioned as the dwellings of nuclear families. The relative simplicity of the architecture, and the artefactual assemblage within these residential units conveys the idea that these founding families may have been primarily concerned with subsistence farming. Surpluses, however, may have been exchanged with other groups, and some may have gone to the stores of the fledgling chiefs in the site core

By the onset of the Late Formative period there is a marked increase in the number of structures in the northern periphery. This includes the addition of new structures in previously established settlements, and the initial construction of solitary



units in previously unoccupied areas. Access to exotic goods such as obsidian and marine shell also becomes more evident at this time, and their frequency in certain structures is probably indicative of differences in wealth and status among the peripheral groups.

Since most of the excavated structures produced evidence of construction during the Classic period, it is likely that this time frame represents the period of greatest population increase within the upper Belize River Valley. Marked intra-site differences in the quality and size of architecture, plus variations in the access and consumption of exotic and status goods also attests to the fact that changes in social complexity are as evident in peripheral populations as they are in site centers. This is particularly manifested by the monumentality of architecture in the Tzinic Group and by the stela and other status objects from this settlement cluster. Future research will undoubtedly provide more evidence for intra-site variability. At this point in time, however, our research has demonstrated that a knowledge of diachronic development is still crucial for understanding the cultural processes which led to Classic Maya achievements and their subsequent denouement.

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BEYOND THE CASTLE WALLS: PRELIMINARY REPORT OF THE 1991  
EXCAVATIONS AT THE TZINIC GROUP, CAHAL PECH, BELIZE

JAMES M. CONLON

Introduction

Excavation operations began at the Tzinic Group in 1990 after it was learned that it was situated in an area targeted for urban development (Figure 1). The overriding objective concerned salvaging as much information as possible by the end of the 1990 season before bulldozers razed it. In order to maximize data retrieval all known mounds were sampled. The data recovered was found to be useful in providing a basis for analysis with which to examine inter-site socio-political relationships at Cahal Pech (Conlon and Awe, 1991:14).

The initial season of excavations yielded significant data regarding peripheral group dynamics at Cahal Pech with possible implications for regional site development. Although not contained within the reserve limits prescribed by Awe and Campbell (1989:5), the Tzinic Group was saved from destruction, still intact upon our return in 1991. This prompted the commencement of a second season of operations, emphasising exploration of the area immediately surrounding the plazuela at Tzinic.

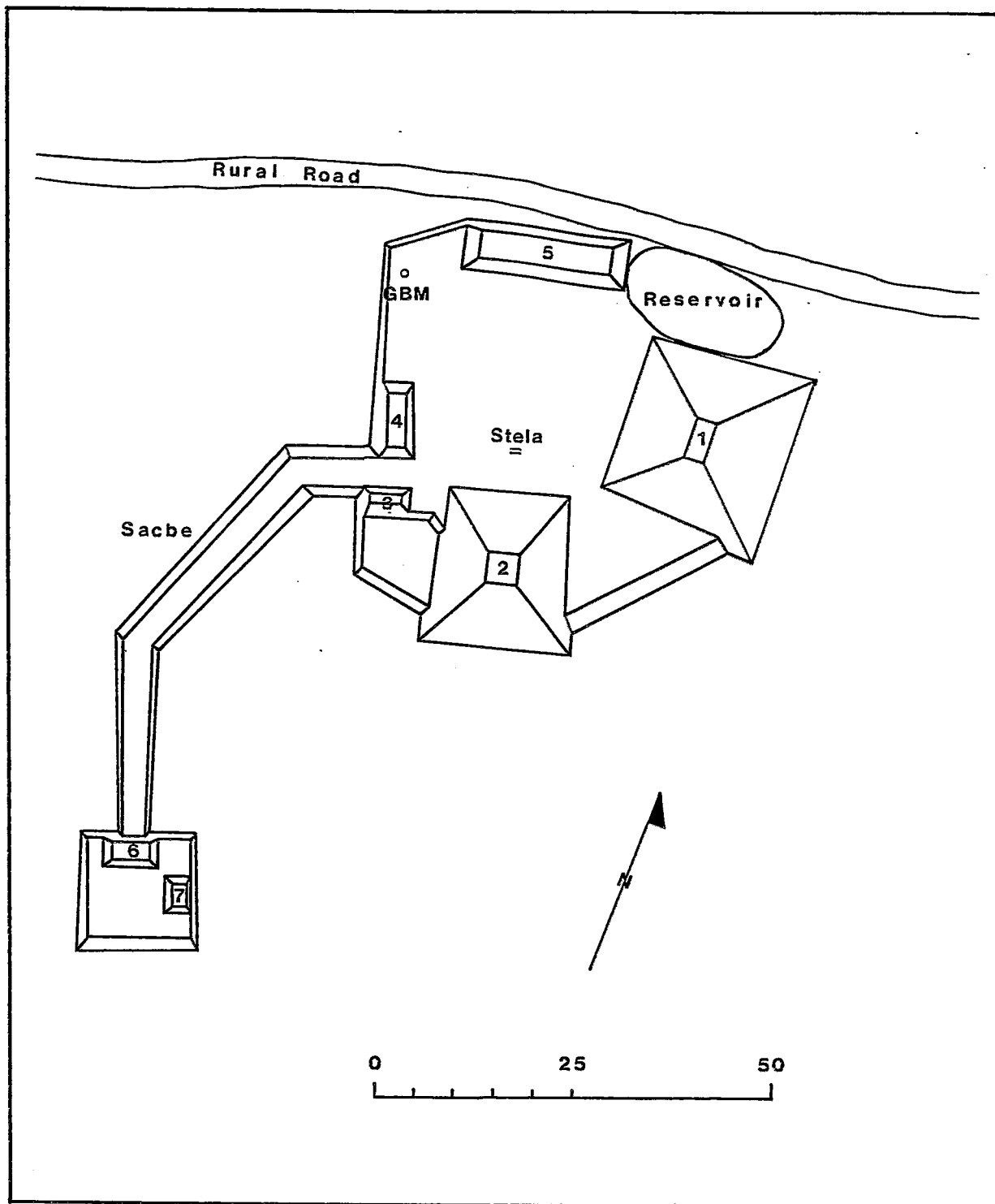


Figure 1

Rectified plan of the Tzanic Group, Cahal Pech, Belize.

This report attempts to briefly describe operations conducted in 1991 at the Tzinic Group. Since this is a preliminary outline of investigations conducted at Tzinic all observations should be considered tentative.

### Group Survey

In order to facilitate a survey of features surrounding the Tzinic Group a second transect was extended from a government benchmark in the northwest corner of the plazuela. Transect 2 extended approximately 150 meters north to a seasonal river bed and almost 150 meters south down towards the small valley which Tzinic overlooks. Results of the 1991 survey are presented below.

### Site Description

Investations up to 1991 indicated the Tzinic Group was a major settlement cluster approximately 450 meters to the south of Cahal Pech's site core. Tzinic comprises two pyramidal and three low-lying range-type structures, forming a plazuela roughly 600 meters square, including a stela. It approximates the configuration of groups which Becker (1983:169) defined as Plaza Plan 2 at Tikal (Conlon and Awe, 1991:6).

The 1991 survey incorporated into the site plan a patio group similar to the Ki'k Group configuration (cf. Goldsmith, his volume). Structure 6, which underwent excavation, and

Structure 7, are joined to the southwest corner of the Tzinic plazuela by a 50 meter sacbe. A similar patio group consisting of two small mounds, Structures 8 and 9, is located approximately 35 meters to the southeast of Structure 1 and was not excavated.

Within the distance of 150 meters north of Structure 5 a sequence of nine terraces was discovered. These low terraces (mostly < 1.0 meter) are stone faced, aligned roughly east/west, paralleling a seasonal river. Terrace 1 was subjected to a test excavation. The southern extension of Transect 2 did not reveal any readily identifiable features although sections of the undulating slope are gentle enough to conceivably have supported agricultural exploitation without modification.

Finally, a depression abutting the northern face of Structure 1 was also formally surveyed and underwent a test excavation.

### Excavations

In order to maintain brevity in this report construction is not presented in all the detail it deserves. Rather, a general overview of excavations is presented in order to acquaint the reader with operations at Tzinic. Aside from the 1991 excavations mentioned above several other operations were undertaken and are described below. For further clarification please refer to the previous seasons report (Conlon and Awe,

1991).

### Structure 1

A 2 X 2 meter unit was placed midway along the central axis. In the process of removing looters backdirt while opening this unit a large greenstone was uncovered. This piece was likely part of a larger mosaic of a pectoral adornment from an interment within this structure. Looters, possibly in haste, inadvertently discarded this artefact. It is feared that a burial, possibly richer than Burial 1 on Structure 2, has been destroyed by looters.

Structure 1 presently measures 8.6 meters high. It was likely over 10 meters high when the double vaulted terminal superstructure was intact. Similar architectural features are found at Lamanai, Altun Ha and Uaxactun (Conlon and Awe, 1991:7).

### Structure 2

In order to preserve the elaborate crypt only minor exploratory excavation occurred here. Two more plaster platform surfaces were uncovered before excavations were terminated. A light-bulb shaped looters trench was entered from the east to record exposed architectural features and retrieve artefactual data. Several low-platform construction phases were recorded.

In the process of opening a unit along the central axis several eccentrics were uncovered. Systematic surface collection

uncovered a total of fifteen eccentrics from within the surface humus. These were found widely scattered across the northern face of the structure. An analysis of these artefacts is provided by Iannone (this volume).

All indications were that an axial cache atop Structure 2 had been initially undetected by amateur looters (Conlon and Awe, 1991:8). Coupled with the large greenstone found in the looters backdirt on Structure 1 all indications are that the looters which destroyed Structures 1 and 2 at the Tzinic Group, were neither dilligent nor experienced.

Horizontal excavations along the central axis revealed several central stairway sub-phases of construction. Excavations terminated at bedrock. Terminal phase architectural similarities were found at the site of Iximche in the Guatemalan Highlands (cf. Hunter, 1974:28).

### Stela

The preponderance of eccentric artefacts found on Structure 2 prompted the reopening of Unit 5 to explore for a sub-stela-butt cache. However, no new data was retrieved.

### Structure 6

A 1 X 3 meter excavation revealed 5 phases of platform construction totalling 1.20 meters in height. Stairs likley led down the "back" (north) of the structure to the sacbe which joins it to the main group of Tzinic. This structure contains

the earliest known construction phase associated with the Tzinic group.

### Feature 1

In order to make a determination of its nature a 1 X 2 meter test excavation was placed in the eastern end of the depression abutting the north face of Structure 1. Upon opening this unit numerous sherds were encountered which likely originated from the construction fill of collapsed terminal architecture of Structure 1. Eventually two successive plastered surfaces were revealed. There was no evidence of a collapsed layer of limestone. It can be assumed that the depression floor was open to the elements as it is today.

Beneath the terminal plaster floor were large olla sherd fragments concentrated in such a manner as to suggest a ritual deposition. A number of sherds fitted together to form several partially complete olla rims. A significant association with water and water storage was deduced. A second clue regarding function was provided by 1989's Transect 1. Survey indicated the entire terminal plazuela slopes 8 to 10 centimeters from northwest down towards the northeast. Plazuela rainwater drained towards the highest ridge of the reservoir. Water from the reservoir never backed up into the plaza for the lower eastern side of the reservoir discharged overflow down the eastern slope of the ridge which Tzinic sits upon.



Feature 2

A single 1 X 2 meter test excavation was conducted on Terrace 1, closest to Structure 5. Excavation revealed a humus layer and two distinguishable soil horizons overlying bedrock 88 centimeters below the present day surface. Samples from the soil horizons were floated and passed on to Dr. Scott Fedick for further analysis.

Diachronic Development

This section attempts to present an overview of pertinent developments at the Tzinic Group. Implications of developments will be presented in the Discussion section where a more analytical perspective is presented.

Late Middle Formative (c. 600 B.C. - 300 B.C.)

The earliest evidence for occupation at the Tzinic group is a plaster platform in Structure 6 raised 8 to 10 centimeters above bedrock. Ceramic data recovered was well preserved and left little doubt that the first phase of construction commenced sometime late in the Middle Formative around 400 B.C. This structure rose only 1.20 meters above bedrock by the end of the Late Classic.

Looting activity did not allow for excavating the deepest central portion of either Structure 1 or 2. Based upon their greater height in comparison with Structure 6, it is suspected that similar period occupation, possibly ranging back even

further into the Middle Formative, may still be concealed within these largest of structures at the Tzinic Group. It is likely that occupation at Tzinic during this period was characterised by several low domestic platforms raised about 10 to 25 centimeters above bedrock.

Late Formative (c. 300 B.C. - 100 B.C.)

The beginning of this period revealed the first known phases of construction in Structures 1 and 2. Raised plastered platforms about 30 to 40 centimeters above their associated plaza floors indicate there was likely a configuration and areal extent similar to the Late Classic patio group Ki'k.

Near the end of the Late Formative (c. 200 - 100 B.C.) Structure 1 was raised to a new height of 80 centimeters. More significantly, Structure 2 was dramatically transformed into a 3.9 meter high platform structure.

Household differentiation commences within the first half of this period when Structures 1 and 2 display larger platform surfaces than Structure 6. In the latter half of this period there was intensive construction activity which resulted in the increased differentiation as denoted by a second variable, height. The heights of Structures 1 and 2 at this time are comparable with the Late Classic heights of Structures 1 and 2 at the Tolok Group.

Protoclassic (c. 100 B.C. - A.D. 300)

Growth was much slower. The Tzinic inhabitants concentrated on minor structural modifications such as replastering. Structure 1 seems to have only one addition raising it to about 1.1 meters high. Structure 2 displays some stair and platform modifications, not effectively changing the height of the structure (c. 4.2 meters).

Although growth was slower in established architecture Structure 5 commenced construction around 100 B.C. Added to the northern edge of the plazuela, it eventually was raised in a second phase of construction about 35 centimeters above its associated plaza surface around A.D. 100.

Early Classic (c. A.D. 300 - 600)

Early Classic ceramic material is negligible at Tzinic and occurs almost entirely within Late Classic contexts. Construction activity effectively ceases at Tzinic during this period. Structure 5 seems to undergo a modification in height to its eastern end. However, this phase is associated with the Late Classic levels in Units 11 and 12 and suggests that this construction phase likely occurred very early in the Late Classic (c. A.D. 600).

The only other secure evidence for construction activity in this period is at Structure 6. However, the Early Classic sherds found here were minimal in comparison with the number of Formative and Protoclassic remains. Construction likely occurred

very early in the Early Classic, no later than A.D. 400.

Tolok also experiences a decline in construction activity during this period (Powis, this volume). A brief comment on the enigmatic Early Classic period follows this section.

#### Late Classic (c. A.D. 600 - 900)

Around A.D. 700 Structure 1 was raised almost fivefold to 5.4 meters high, comparable to Structure 2's height. By 800 A.D. there was a new platform surmounted by a permanent vaulted superstructure, raising the estimated total height to over 10 meters.

The interment of the occupant of the elaborate crypt in Structure 2 (Burial 1), sometime around A.D. 700, marks a transition. Not only was there a burial, but also an accompanying burial at the base of the structure (Burial 2), and a stela erection with dedicatory cache. Also, Preclassic figurine fragments were deposited with the Late Classic fill which enclosed the crypt, raising the platform height to about 5.5 meters. Subsequent platform construction raised the terminal platform to 6.3 meters high.

Final formalization of the configuration observable today occurred when the plaza floor was extended westward where two new structures were erected (3 and 4). Structures 5 and 6 also underwent phases of platform construction.

There is also evidence for greater resource management and exploitation as demonstrated by the development of the reservoir abutting Structure 1 and the inception of terraced fields.

### Early Classic Phenomenon

Before commencing with a discussion of the Tzinic data a comment on the apparent Early Classic slump at Tzinic is warranted.

"The problem is complex, since there appears to be scant evidence of Early Classic Tzakol 1-3 ceramics (300-600 A.D.)...This raises the possibility of Late Preclassic Chicanel sphere ceramics persisting in the Belize Valley beyond the generally advocated terminal date of approximately 250-300 A.D." (Cheetham, 1992:4).

This phenomenon is encountered at all operations undertaken at Cahal Pech and is indeed a complex problem. An Early Classic hiatus is not a new problem (Willey, 1974), but, the data from Cahal Pech suggests early inhabitants of the valley may have participated in a prolonged usage of Chicanel sphere ceramics. It may be premature though to ascribe this phenomenon to the whole of the Belize Valley. The nearby site of Buena Vista seems to flourish at this time and may very well have played a dominant role in this period (Awe and Campbell, 1989:31). However, why it flourished and Cahal Pech declined, and even more importantly, why Cahal Pech rebounded, are difficult questions to answer.

The clue to answering these questions may rest in the eastern lowlands. According to Blanton et al (1981:220):

"In general, chiefdoms and states in the eastern lowlands tended to be unstable and often weak...Abandonments, cessations of monumental construction and stelae erection, and dynastic realignments took place frequently. Polities emerged, gained strength, and disappeared within one or two archaeological phases. Compare this instability with the Monte Alban polity: sovereign, recognizable, and authoritative for at least 1,200 years."

The lack of Tzakol phase construction at Tzinic, and Cahal Ch, may or may not be evidence for a temporary cessation of activity. The possibility of prolonged use of ceramics from the Tzinic sphere would greatly alleviate difficulties in explaining extended periods of perceived inactivity. Perhaps the present archaeological investigations in the region will provide the answer to this dilemma. Does the nearby site of Blackman Bay, which possesses a possible Cycle 7 stela (Garber, 1992), display the same Early Classic cessation of construction activity? As data from more sites within the valley becomes available the more able we will be to address this Early Classic phenomenon.

### Discussion

This section presents an overview of significant developments at the Tzinic Group which may be useful in distinguishing inter-site relationships at Cahal Pech. In order to facilitate this examination one must understand what

dwellings can tell us about society in general.

It has become common practice to associate certain architectural features and artefactual remains with various degrees of social status, and subsequently, community social structure (Cliff, 1988:201). Architecture and artefacts shall be the basis for examining some of the more recognizable changes at the Tzinic Group.

At the close of the Middle Formative (c. 400 B.C.) there were three uniformly similar housemounds comprising the Tzinic Group. Early in the Late Formative (c. 200 B.C.) the areal extent of the platform surfaces of Structures 1 and 2 increased relative to that of Structure 6. This may be the beginning of subtle differentiation within the periphery of Cahal Pech. Certainly by the end of the Late Formative (c. 100 B.C.) Structure 2 had increased dramatically in height (c. 3.9 meters).

Did Structure 2 come to function as more than a dwelling? Did it even retain occupants? If it was not a dwelling then what function is signified by its increased height? The clue may come from the Late Classic trend of purposeful deposition of figurine fragments within particular structures (Cheetham, 1992:20). Furthermore, the earliest structures at various groups throughout the site of Cahal Pech (Tolok-1, Tzinic-2 and B-4 in the core) were possibly Formative Period foci of group ritual activity (Awe, personal communication).

What is the significance of group focused ritual? Perhaps  
 Little (1985:186) can provide an insight:

"...the specialisation of certain buildings as shrines, and the appearance of potentially arcane ritual activities could be taken to imply both increased emphasis on ritual and a more restricted access to its practice and control."

Certainly access and control of ritual became restricted to certain individuals within various groups. But the various groups performed similar rituals similarly. Although there is evidence of very large Formative constructions within the site (Awe and Campbell, 1989:30) there was proportional representation at the Tzinic Group at this time.

The Early Classic (c. A.D. 300 - A.D. 600) remains problematical. Whether or not there is a cessation in activity or merely a prolonged Formative participation is unclear. The solution to this dilemma may come only after extensive regional coverage is available for analysis.

Early in the Late Classic (c. A.D. 600) Tzinic, and Cahal Pech, experienced a resurgence of activity. Even though Tzinic suffered an apparent prolonged cessation of activity there were still very wealthy burials at Structure 2 (c. 650-700 A.D) and only one at Structure 1 around 700 - 800 AD. If there was such a cessation then where did the construction manpower and wealth come from? It may remain perplexing, unless one considers the possibility of a prolonged Formative participation an acceptable



explanation for a perceived cessation. This would possibly explain why such great wealth suddenly appears at the Tzinic Group in the Late Classic. Perhaps wealth was being accumulated in goods rather than displayed in monumental architecture during the Early Classic at Tzinic.

Whether or not Tzinic slumped in the Early Classic the tremendous display of wealth at Tzinic indicates an incredible vibrance. Some Early Classic elements are apparent, such as eccentrics and stela. Although a certain amount of skepticism about provenience is warranted (Iannone, this volume), it is more probable they are associated with Late Classic contexts. Taken together, the stela and eccentrics of Tzinic have significant implications about the status of the individuals residing at the group. As Kidder (1985:108) describes:

"...function remains a constant mystery. From their context at sites, it is very evident that this artifact played a larger role in Maya ceremony. Eccentrics are often the favored artifacts for inclusion in the dedicatory building caches, also eccentrics occur in burial contexts, usually in high status tombs. The distribution of Early Classic eccentrics is also intriguing...paralleling the distribution of Early Classic stela almost exactly...the eccentric may have served as a portable power symbol...the inclusion of eccentrics in burials may be seen as an extension of this facet, with the deceased taking his power symbols with him."

Whittle (1985:177-178) suggests that stela reinforce the emphasis given to individuals. Therefore, it can be assumed that the Tzinic inhabitants no longer practised ancestor idolotry vis avis figurines. Instead, individual wealth was powerful and portable. The lineage may have remained an important feature of

social organization, but only so long as the particular lineage head could maintain the acquisition of prestige items such as obsidian and jade. This shift to individual wealth and status may also explain the apparent shift in importance to Structure 1 after the death of the individual interred in Structure 2's Burial 1.

There is little evidence for a sustaining support population in the immediate vicinity of the Tzinic Group. During the Late Classic the Tzinic Group may very well have exacted services from such groups as Tolok to the east (Powis, this volume) and Figueroa to the west. What exactly enabled Tzinic inhabitants to become so wealthy and possess the right to exact such servitude?

One must examine the environ which encompasses Tzinic and the site of Cahal Pech as a whole. The collection, storage and use of water at Cahal Pech is evident throughout the site. Drainage of Plazas A and B at their northeastern corners allowed water to funnel down the western base of the acropolis to collect in the dammed reservoir south of Plaza E. The Western Group reservoir also drained from its eastern end towards this dammed reservoir. Subsequent overflow from this reservoir was likely channeled down towards the terraces north of the Tzinic Group where any runoff continued on into the seasonal river bed 160 meters north of the Tzinic Group.

This integrated system ensured a water supply during

unusually dry periods. It likely sustained crops, as well as possibly facilitated a longer growing season. It also provided for easier access to water which otherwise would have had to be painstakingly transported from the Macal or Mopan rivers. Adams and Culbert (1977:6) provide the basis for a likely role of the Tzinic Group during the Late Classic period:

"Included in upper class needs are high density, permanent rural populations...labor intensive farming, irrigation...and water storage techniques. Management of these techniques and of the population was a function of the elite class."

The reservoir system at Cahal Pech is generally associated with monumental architectural features. Groups such as Zotz and Tolok, which lack imposing architecture, possess chultuns as part of their storage facility strategy. It seems apparent that chultuns and reservoirs correlate with group status differentiation. A ceremonial association of large stores of water is proposed by Puleston (1983:3-4):

..."perhaps there is some greater importance to minor centers having their own aguadas, some social significance as being keepers of water or suppliers of water to their 'constituents.'"

It was evident early in the Cahal Pech project that the site displayed a high degree of complexity regarding social organization. Nowhere was this more apparent than in the site core:

"Our preliminary analysis of the site core thus demonstrates distinct spacial sub-units indicative of a complex hierarchical system of elite residency and

rule. Furthermore, we hypothesize that social and political cohesion among the elite residents of the various sub-units or plaza groups was probably maintained through close and loose kinship ties" (Awe et al, 1991:29).

The complexity exemplified in the core of Cahal Pech likely extended to its peripheral associates, a necessity in organizing the successful management resources such as water. Formalized settlement organization may be peculiar to hilltop communities along the Belize River where water management was a requisite. In contrast, the seemingly homogeneous settlements of the alluvial plain required no such organized management for the readily accessible water. Increased cooperation requires kinship ties capable of breaching castle walls. That Tzinic obtained such wealth in the Late Classic may indicate a matrilineal relationship with inhabitants in the site core of Cahal Pech.

Before offering concluding remarks it would be worthwhile to discuss whether the observations made to this point are valuable and valid. Are the inferences based on spatial organization useful in examining intersite relationships at Cahal Pech? Generally, spatial patterning is an important aspect of regional settlement studies. However, the enormity of such a task and the sweeping generalizations usually made may undermine its usefulness. As Blanton et al (1981:243) state:

"...we do not yet have good methods for the systematic collection of data relevant to very broad, macroregional evolution. A national-scale, field-by-field archaeological settlement pattern study exists only as a nightmare among the anxiety-ridden dreams of a survey archaeologist..."

It is also apparent that simply mapping settlements is not sufficient for deducing settlement interrelationships. Such surveys are highly dependent upon research objectives. A purposely limited survey could result in a map of a major site with a substantial peripheral support population portrayed as a minor compound of a few structures circumscribed by castle walls. Serious misinformation regarding settlement interrelationships can be purveyed leading to irrelevant constructs of societal models. How then are societal reconstructions to be developed? Puleston (1983:23) states:

"...without a substantial body of excavation and other data, even the best maps can be seriously misleading..."

Realistically, a cognizance of spatial relationships is necessary. However, spatial relationships remain wanting until temporal associations are made evident. On the other hand, how much excavation is required before it is considered "substantial?" Is excavating a 20% sample of known mounds in a regional settlement survey substantial? Is excavating 60% of mounds in a small settlement cluster substantial?

For now, research strategies may have to remain a singular pursuit. Individual archaeologists surveying and excavating individual sites will have to be relied upon to provide significant coverage of both core and peripheral groupings. Only after more extensive and intensive coverage provided by separate

erations in the Belize Valley can archaeologists begin to collaborate on deducing societal interrelationships on a regional scale.

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**ARTIFACTS, ASSOCIATIONS, AND ANALOGUES:  
THE ECCENTRIC LITHIC ARTIFACTS FROM  
THE TZINIC GROUP AT CAHAL PECH, BELIZE**

by

**Gyles Iannone**

**INTRODUCTION**

During the 1990-91 fieldseasons at Cahal Pech a number of eccentric lithic artifacts (Figure 1) were recovered from the Tzinic group, a large peripheral settlement cluster (see Conlon and Awe 1990; Conlon, this volume). These artifacts, fifteen in total, are the focus of this report. The following discussion provides a summary of context and associations, detailed descriptions of each eccentric item, and observations regarding similarities between these forms and those from other Lowland Maya sites. This analysis also strives to address the question of the "significance" of these artifacts. Specifically, I aim to show that these items, in combination with a number of other characteristics of the Tzinic group, suggest a situation analogous to that described for the "Dower House" at Tikal (Haviland 1981).

**CONTEXTS AND ASSOCIATIONS**

The Tzinic group at Cahal Pech consists of seven mounds, including two large pyramidal structures (Structures 1 and 2), arranged around a "relatively" large courtyard (see Conlon and



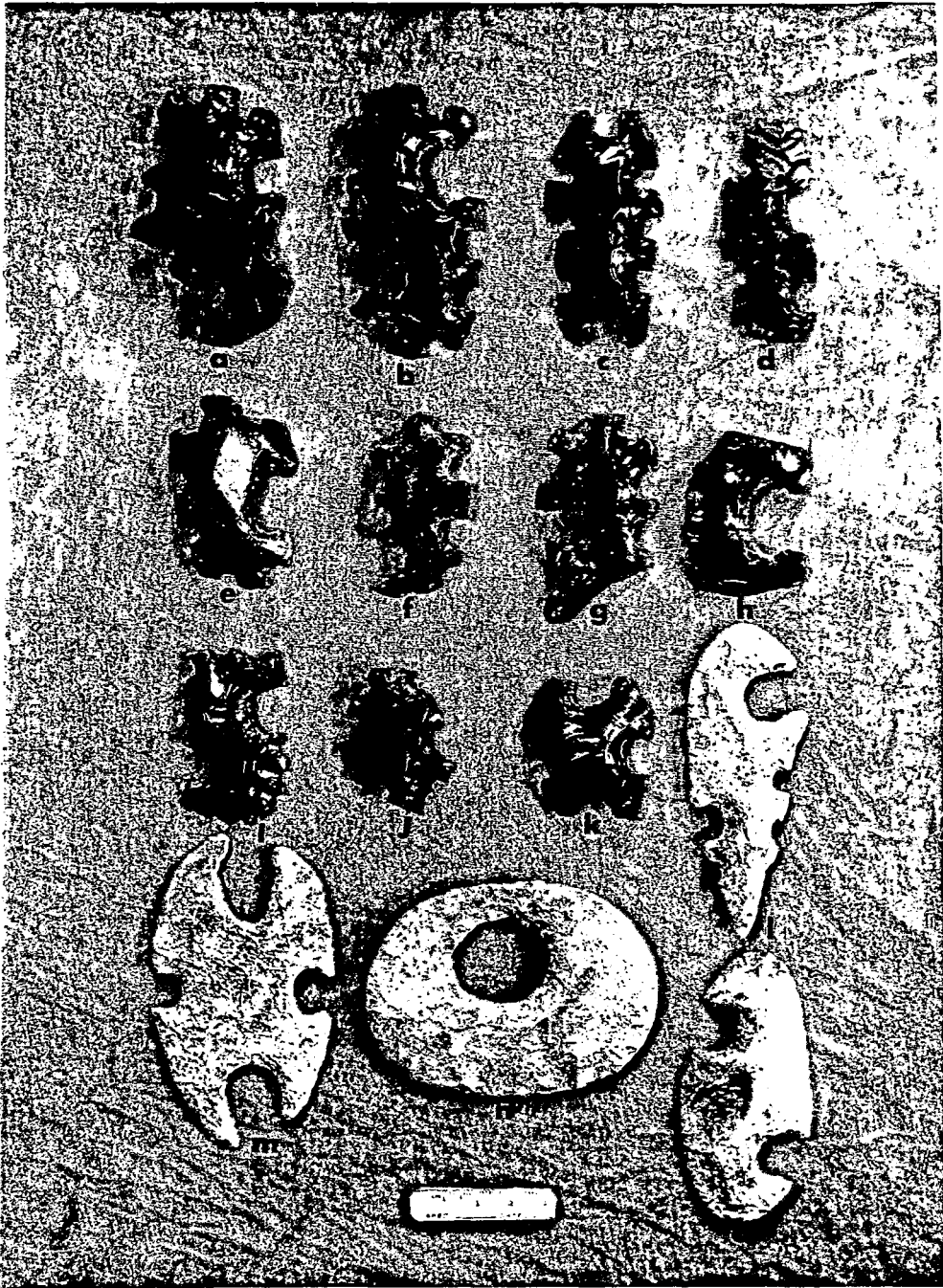


Fig. 1: Eccentric flints from the Tzinik Group,  
Cahal Pech, Belize

Awe 1990; and Conlon, this volume, for a full description of the Tzinic group). The eccentrics in question were all recovered from the surface of Structure 2. They appear to have been displaced from a constructional cache either through the action of looters (Conlon and Awe 1990), or as a result of tree root activity. The latter seems the most plausible given the number of eccentrics recovered. It does seem unlikely that experienced looters would have failed to recognize a cache of this size. However, the true nature of the disturbance continues to evade us. Due to the disturbance and subsequent redeposition of these eccentrics in a secondary context (Shiffer 1972:160-161), a more accurate date than "Classic period" cannot be provided.

Aside from the presence of eccentrics, a few other aspects of this peripheral group warrant some mention. First, Structure 1 and Structure 2 are approximately 8.6m and 5.6m high respectively, and can be considered "monumental" in terms of size and quality of architecture. Second, the presence of a stela near the base of Structure 2 seems anomalous given this peripheral setting. Finally, an elaborate crypt (Welsh 1988:351) was discovered below the summit of Structure 2, suggesting that someone of importance had been interred there. I will return to these associations in the conclusion of this report, where the significance of the Tzinic eccentrics will be addressed.

**ARTIFACT DESCRIPTION**

The following section provides comprehensive descriptions for each of the eccentrics recovered from the Tzinic group. This synopsis includes information pertaining to both morphological forms and production techniques. Morphological similarities to eccentrics from other Lowland Maya sites are also noted. Although a visual summary of raw materials is included, no attempt is made to articulate raw materials with sources. This follows recent observations by a number of researchers (Jackson and Love 1991; Moholy-Nagy and Nelson 1990), whereby visual sourcing is not deemed to provide accurate results.

Specimen #1 (Figure 1, a).

Maximum Length: 8.1 cm

Maximum Width: 4.6 cm

Maximum Thickness: 1.4cm

Raw Material: Obsidian - black banded material.

Description: Specimen #1 is a bifacially flaked artifact with multiple offset notches along the lateral margins (with the dorsal face up, four along the left margin and two on the right). Notching is also used to form three projections at the proximal end of the artifact. The distal end terminates on a truncation. The middle projection at the proximal end may also have been truncated, although it is more likely that this represents a remnant platform.

This artifact appears to have been manufactured from an

exhausted blade core through the use of hard hammer percussion. The notches, given the negative flake scar evidence and size, were probably manufactured using a punch. This observation has also been made by Shafer (1991:38) in his discussion of Colha eccentrics.

Morphologically similar specimens have been found at Altar de Sacrificios (Willey 1972:191-192), Altun Ha (Pendergast 1990, Figures 68 a, m; 69 h; 70 c, f; 71 j; 72 j, c; 73 k; 74 a; 75 d, j; 77 d, f, g; 78 h; 80 o), Baking Pot (Bullard and Bullard 1965, Figure 13 g-i, Plate XIX, Plate XX), Pusilha (Gruning 1930, Plate XXII, Fig. 3; Joyce 1932:xxi, Plate III-Figures 4 a, 8 a, 3 b, 4 b), San Jose (Thompson 1939, Plate 24-3), Tikal (Joyce 1932, Plate III-Figures 1 a, 2 b; Kidder 1947, Figures 8 e, n), Xunantunich/Benque Viejo (Gann 1918, Figures 40 c, 41, 44 d, e; Joyce 1932, Plate III-Figures 5a-7a, 1b), and near Xunantunich (Gann 1918, Figure 45 a). In the majority of cases these are described as scorpions (eg. Coe 1959:18, 26-27; Willey 1972:191-192). Given the close resemblance between this artifact and specimens #6 and #7, an argument could be made that this particular form is specific to Cahal Pech, or at least the Tzinic group, and therefore possibly a local variant of the scorpion form.

Specimen #2 (Figure 1, b).

Maximum Length: 8.3 cm

Maximum Width: 4.1 cm

Maximum Thickness: 1.1 cm

Raw Material: Obsidian - black banded material.

Description: This is a bifacially worked obsidian specimen. Ten notches are present along the margins, eight small and two large. The notches are placed symmetrically, with four small and one large on each side. The smaller notches are used to offset the two larger ones. The proximal and distal notches are also symmetrically organized.

As with specimen #1, this eccentric was produced on an exhausted blade core. It is only the notches on the ventral surface which allow this object to be classified as bifacial, as no other flaking occurs on this face. Evidence for hard hammer percussion is limited, the notches appearing to have been made with a punch. There is also some evidence to indicate that limited pressure flaking was used in notch formation. Step fracturing is also present on the ventral surface in the two largest notches.

This form is reminiscent of what some have called centipedes (Coe 1959:18, 27; Willey 1972:192). Eccentrics similar to this have been found at Altar de Sacrificios (Willey 1972:192), Altun Ha (Pendergast 1990, Figures 69 b, d, k; 71 i; 73 f; 75 k), Caracol (Coe 1959:27), Naranjo (Maler 1908, Figure 19), Piedras Negras (Coe 1959:18, 27), Pusilha (Joyce 1932, Plate III-Figure 8 b), Tikal (Joyce 1932, Plate III-Figures 1 c, 2 c; Kidder 1947, Figures 8 a, q), and Xunantunich/Benque Viejo (Gann 1918, Figure 45 f; Joyce 1932, Plate III-Figure 1 c). Although the Tzincic eccentric does not conform to the very

standardized centipede form typical of many of the aforementioned sites, it does compare well with a number of eccentrics from Altun Ha and the lone Pusilha item.

Specimen #3 (Figure 1, c).

Maximum Length: 7.1 cm

Maximum Width: 3.5 cm

Maximum thickness: 1.0 cm

Raw Material: Obsidian - black banded material.

Description: Specimen #3 is a bifacially worked artifact, although it should be noted that the only evidence for flaking on the ventral surface is that resulting from notch formation. Multiple opposing notches are present, three on each lateral margin and one on each proximal and distal end.

Given the degree of flaking on this item I was unable to determine whether it had been produced on an exhausted blade core or not. Evidence for hard hammer reduction is limited. On both dorsal and ventral surfaces the negative flake scars associated with notch removal cross over the central margin of the artifact, often coming into contact with those of the opposite margin. This is especially true on the ventral surface. The size of the negative notch scars again indicates that a punch was used in their formation. Some step fracturing is present within the notches, suggesting the use of pressure flaking to finish the notches.

Eccentrics similar to this have been recovered from Altar de Sacrificios (Willey 1972:192), Altun Ha (Pendergast 1990,

Figures 69 b, d, k; 71 i; 73 f; 75 k), Caracol (Coe 1959:27), Naranjo (Maler 1908, Figure 19), Piedras Negras (Coe 1959:18, 27), Pusilha (Joyce 1932, Plate III-Figure 8 b), Tikal (Joyce 1932, Plate III-Figures 1 c, 2 c; Kidder 1947, Figures 8 a, q), and Xunantunich/Bengue Viejo (Gann 1918, Figure 45 f; Joyce 1932, Plate III-Figure 1 c). This particular form is best classified as a centipede (Coe 1959:18, 27; Willey 1972:192). However, as with Specimen #2, this eccentric differs from the standardized centipede form found at many of the sites. Nevertheless, it is identical to a number of eccentrics recovered from Altun Ha.

Specimen #4 (Figure 1, d).

Maximum Length: 6.7 cm

Maximum Width: 2.9 cm

Maximum Thickness: 0.6 cm

Raw Material: Obsidian - black banded material.

Description: This item is another bifacially worked specimen. As with the previous eccentrics, the only evidence for flaking on the ventral surface is associated with notch formation. Specimen #4 has four offset notches, two on each lateral margin. Near the distal end a small section of cortex remains on the dorsal surface. A remnant platform and platform preparation flakes also exist on the proximal end.

Rather than originating as an exhausted blade core, this artifact appears to have been made on a large core preparation flake. This is suggested by: (1) the platform and platform

preparation flakes; (2) the relative pristine condition, except for notching, of the ventral surface; and (3) the presence of cortex on the dorsal surface, indicating that this raw material is derivative of the initial hard hammer core reduction stage. Although some of the notching appears to have been produced with a punch, there is also evidence for some pressure flaking. Step fracturing is present in all notches.

Morphologically similar eccentric forms have been found at a number of sites including Altar de Sacrificios (Willey 1972:196-198), Altun Ha (Pendergast 1990, Figures 18 f, 69 d, 71 i, 73 j, 77 b, 78 i), Douglas (Anderson and Cook 1944, Figure 2 k, m), Naranja (Maler 1908, Figure 5), Piedras Negras (Coe 1959:20, 28), Pusilha (Gann 1930, Figure 5; Gruning 1930, Plate XXII-Figures 1, 3; Joyce 1932, Plate I-Figures 8 a, 3 b, 4 b, 6 d, Plate II-Figure 1 a; Joyce, Gann, Gruning, and Long 1928, Plate XXXV-Figure 1); Rio Azul (Adams 1987, Figure 29-106), San Jose (Thompson 1939, Plate 24-Figure 8), Uaxactun (Kidder 1947, Figures 7 b; 66 b-3, d-1, 2; 67 d-3, 4, 5; Ricketson and Ricketson 1937, Plate 58), Xunantunich/Benque Viejo (Coe 1959:20). Specimen #4 is best classified as a bipoint with multiple offset notches (Coe 1959:20, 28; Willey 1972:196-198, 281). It is most similar to the Altun Ha forms. Specimen #5 (Figure 1, e).

Maximum Length: 6.1 cm

Maximum Width: 3.9 cm

Maximum Thickness: 1.9 cm



Raw Material: Obsidian - black banded Material.

Description: A rather thick specimen, this eccentric is bifacially worked, although flaking on the ventral surface is limited to notch production. This artifact is crescent-shaped, with one large notch on one lateral margin and six smaller notches evenly spaced on the remaining margins.

This eccentric may have been produced on a large flake, or on an exhausted core. Evidence for hard hammer percussion is evident for the initial reduction stage. The notches are large, probably having been made with a punch. It appears that further refinement of the notches was undertaken with pressure flaking, as evidenced by step fracturing in the notches. The largest notch also exhibits evidence for both punch and pressure techniques. A great deal of step fracturing is also associated with this notch.

Eccentrics similar to this have been recovered at Altar de Sacrificios (Willey 1972:187-189, 218), Altun Ha (Pendergast 1979, Figures 23 c, 68 a, e, r; 1982, Figures 75 g, 82 b, 83 h; 1990, Figures 10 d, 17 c, 49 c, e, 68 k, 69 f, j, 74 c, k, 159 b), Baking Pot (Bullard and Bullard 1965, Plate XIX), Barton Ramie (Willey et al. 1965:446, Figures 263 a, 268), Caledonia (Awe 1985, Figure 149 c), Naranjo (Maler 1908, Figure 19), Piedras Negras (Coe 1959:17), Ponces (Awe 1985:349), Seibal (Willey 1978:123), and Xunantunich/Benque Viejo (Coe 1959:17; Gann 1918, Figures 44 g, h; Joyce 1932, Plate IV-Figures 2 b, 5 b, 6 b). According to earlier classifications (Coe 1959:17;

Willey 1972:187-189, 1978:123), this form is best described as a serrated crescent.

Specimen #6 (Figure 1, f).

Maximum Length: 5.8 cm

Maximum Width: 3.0 cm

Maximum Thickness: 0.9 cm

Raw Material: Obsidian - black banded material.

Description: This eccentric is bifacial, although as with many of the others, the ventral surface is only flaked in association with notch formation. Multiple opposing notches are present, three on each lateral margin. The proximal section has a projection reminiscent of specimens #1 and #7. A small notch is also present on the distal section.

This artifact appears to have been made from a flake, as a remnant bulb of percussion can still be recognized. Evidence for some prior hard hammer percussion is apparent. The notches are small, and were probably made by pressure flaking rather than the punch technique, unlike specimens #1 and #7.

Similar eccentrics have been recovered at Altar de Sacrificios (Willey 1972:191-192), Altun Ha (Pendergast 1990, Figures 68 a, m; 69 h; 70 c, f; 71 j; 72 j, c; 73 k; 74 a; 75 d, j; 77 d, f, g; 78 h; 80 o), Baking Pot (Bullard and Bullard 1965, Figure 13 g-i, Plate XIX, Plate XX), Pusilha (Gruning 1930, Plate XXII, Fig. 3; Joyce 1932:xxi, Plate III-Figures 4 a, 8 a, 3 b, 4 b), San Jose (Thompson 1939, Plate 24-3), Tikal (Joyce 1932, Plate III-Figures 1 a, 2 b; Kidder 1947, Figures

8 e, n), Xunantunich/Bengue Viejo (Gann 1918, Figures 40 c, 41, 44 d, e; Joyce 1932, Plate III-Figures 5a-7a, 1b), and near Xunantunich (Gann 1918, Figure 45 a). These have been classified as "scorpions" (Coe 1959:18, 26-27; Willey 1972:191-192). It should be noted, however, that this form is almost identical to specimens #1 and #7, suggesting that this particular scorpion-like form may be specific to Cahal Pech, or at least the Tzinic group.

Specimen #7 (Figure 1, g).

Maximum Length: 6.7 cm

Maximum Width: 4.1 cm

Maximum Thickness: 2.0 cm

Raw Material: Obsidian - black banded material.

Description: Specimen #6 is bifacially flaked, although flaking is limited to notch formation on the ventral surface. Multiple opposing notches are present along the lateral margins, three on one side and two on the other. Notching is also used to form three projections at the proximal end. The distal end terminates at a bulbar flake termination. Some evidence for trampling is also present near the distal termination.

This specimen appears to have been made on a flake produced through hard hammer percussion, as evidenced by the bulbar termination. The large notches were probably made with a punch, although subsequent refinement through pressure flaking is suggested by the presence of step fracturing within the notches. The middle projection at the proximal end is

either truncated, or is a remnant platform. The latter is likely given the presence of some platform preparation on this surface.

Morphologically similar forms have been described for Altar de Sacrificios (Willey 1972:191-192), Altun Ha (Pendergast 1990, Figures 68 a, m; 69 h; 70 c, f; 71 j; 72 j, c; 73 k; 74 a; 75 d, j; 77 d, f, g; 78 h; 80 o), Baking Pot (Bullard and Bullard 1965, Figure 13 g-i, Plate XIX, Plate XX), Pusilha (Gruning 1930, Plate XXII, Fig. 3; Joyce 1932:xxi, Plate III-Figures 4 a, 8 a, 3 b, 4 b), San Jose (Thompson 1939, Plate 24-3), Tikal (Joyce 1932, Plate III-Figures 1 a, 2 b; Kidder 1947, Figures 8 e, n), Xunantunich/Benque Viejo (Gann 1918, Figures 40 c, 41, 44 d, e; Joyce 1932, Plate III-Figures 5a-7a, 1b), and a site near Xunantunich (Gann 1918, Figure 45 a). Specimen #7 might best be classified as a Scorpion (Coe 1959:18, 26-27; Willey 1972:191-192). However, the close resemblance between this eccentric and specimens #1 and #6 might indicate that this is a scorpion-like form specific to Cahal Pech, or at least the Tzinic group.

Specimen #8 (Figure 1, h).

Maximum Length: 5.1 cm

Maximum Width: 3.6 cm

Maximum Thickness: 0.7 cm

Raw Material: Obsidian - black banded material.

Description: This artifact is a bifacial specimen, with only minimal ventral flake removals other than those associated with

notch formation. A remnant platform is still intact (2.6 cm long and 0.5 cm wide), as are both the bulb of percussion and a large erailure scar on the ventral surface. This specimen is crescent-shaped, with a single large notch present on one lateral margin.

Specimen #8 was created on a large, thick flake. Evidence for prior hard hammer percussion is present on the dorsal surface, and is indicated by the localized point of impact. Platform preparation flakes occur on the dorsal surface below the remnant platform. A punch was used to form the single notch, with subsequent pressure flaking employed to complete the task. Step fracturing is present in the notch. Some "nibbling" is occurs on both the distal, ventral/dorsal surfaces, possibly a result of use-wear, but more probably indicating simple shaping. Invasive, inverse retouch is also located along the lateral margin opposite from the notch. This was also probably undertaken in order to round the lateral margin to conform to the desired shape.

Numerous forms of this type have been recovered, including examples from Altar de Sacrificios (Willey 1972:187-189, 218), Altun Ha (Pendergast 1982, Figures 36 o,; 1990, Figures 76 m, 77 c, 78 b, 109 e, 155 m, 156 f), Baking Pot (Bullard and Bullard 1965, Figure 13 j, Plate XX), Barton Ramie (Willey et al. 1965, Figure 280), Caledonia (Awe 1985, Figures 149 a, b), Chichen Itza (E.H. Thompson and J.E.S. Thompson 1938, Figure 18 j), Copan (Longyear 1952, Figure 92 m), Naco, Honduras (Lunardi

1946, Plana 10, 5), Naranjo (Maler 1908, Figure 19), Piedras Negras (Coe 1959:17), Ponces (Awe 1985:349), Pusilha (Gann 1930, Figure 5; Gruning 1930, Plate XXII-Figures 1, 2, 4; Joyce 1932, Plate II-Figures 6 d, 8 d, Plate IV; Joyce, Gann, Gruning, and Long 1928, Plate XXXV, Figure 1), San Jose (Thompson 1939, Plate 24-Figures b 4, b 6), Tikal (Kidder 1947, Figures 8 i, u), Uaxactun (Kidder 1947:17), and Xunantunich (Gann 1918, Figures 40 d, 45 c). Following previous work (Coe 1959:17, 26; Willey 1972:187-189, 218), this artifact can be classified as a plain crescent.

Specimen #9 (Figure 1, i).

Maximum Length: 5.5 cm

Maximum Width: 3.7 cm

Maximum Thickness: 0.9 cm

Raw Material: Obsidian - grey, cloudy material.

Description: Specimen #9 is by far the best flaked obsidian specimen in the assemblage. It is completely bifacially worked. The form appears to be created in the likeness of a seahorse. Two large notches are present, one on each lateral margin. The remaining margins are serrated.

Due to the complete flaking, I cannot determine whether this item began as a flake or an exhausted blade core. The two large notches were initially created by the punch technique, and subsequently finished by pressure flaking. Step fracturing is present in both large notches. The serrated edges were formed by evenly spaced pressure flakes. The nose of the

seahorse was produced through truncation.

As has already been stated, this form seems to represent a seahorse. However, a review of the literature did not turn up any reference to such a form at any other site, nor did any identical morphological forms become apparent. Although similar to the S-forms (see below), I believe that enough morphological differences occur to warrant the separation of this eccentric into its own type. At this time the "seahorse" type appears to be specific to the Tzinic group at Cahal Pech. Specimen #10 (Figure 1, j).

Maximum Length: 4.5 cm

Maximum Width: 3.4 cm

Maximum Thickness: 1.2 cm

Raw Material: Obsidian - black banded material.

Description: This is a bifacially worked artifact, although no additional flaking other than notching occurs on the ventral surface. A large remnant platform is present (1.2 cm long, 0.6 cm wide). Seven notches are asymmetrically arranged around the margin of the artifact, three on one lateral margin and four on the other.

Specimen #10 was created on a large, thick flake. All seven notches show evidence for having been created initially with a punch, and subsequently finished by pressure flaking. Step fracturing is also associated with all seven notches.

With regard to morphology, this eccentric does not appear to represent any known type. However, it does resemble certain

forms recovered from Altar de Sacrificios (Willey 1972:186), Altun Ha (Pendergast 1979, Figure 22 a; 1982, Figure 53 d; 1990, Figures 17 b, 69 g, 72 a, 73 e, 155 j, 156 j, 180 a), Baking Pot (Bullard and Bullard 1965, Plate XIX; Ricketson 1931, Plate 12 f), and Pusilha (Joyce 1932, Plate III-Figures 1 d, 2 d, 6 c - 8 c), which have been classified as "asterisks" (Willey 1972:186), or serrated discs (Coe 1959:19).

Specimen #11 (Figure 1, k).

Maximum Length: 4.3 cm

Maximum Width: 3.8 cm

Maximum Thickness: 1.0 cm

Raw Material: Obsidian - black banded material.

Description: Specimen #11 is bifacially flaked, although flaking on the ventral surface is concentrated around the notches. Four notches are symmetrically organized around the margins of this artifact, each notch opposing one other. The outline is roughly circular.

This artifact appears to have been manufactured on a flake. The presence of the bulb of percussion, although removed during notching of the ventral surface, can still be inferred. The notches were initially created with a punch and subsequently finished through pressure flaking. Step fracturing occurs in all four notches. Some possible use-wear exists along one of the lateral margins between two notches, although it seems more likely that these small flake removals relate to shaping of the final form rather than use.



Morphologically similar forms have been documented for Altar de Sacrificios (Willey 1972:186), Altun Ha (Pendergast 1990, Figure 68 h, f, n, 74 g, 75 a, 77 e), Baking Pot (Bullard and Bullard 1965, Figure 13 d, Plate XIX), Barton Ramie (Willey et al. 1965, Figure 268), Caledonia (Awe 1985, Figure 149 d), Ponces (Awe 1985:351), Pusilha (Gann 1930, Figure 5; Joyce 1932, Plate II-Figure 6 c; Joyce, Gann, Gruning, and Long 1928:333, Plate XXXV-Figure 1), and Xunantunich (Coe 1959:19; Gann 1918, Figures 44 a, b, f; Joyce 1932, Plate II-Figures 3 c, 5 c, 7 c). Specimen #11 is best classified as a cruciform, or cross (Coe 1959:19; Willey 1972:186).

Specimen #12 (Figure 1, 1).

Maximum Length: 9.6 cm

Maximum Width: 3.6 cm

Maximum Thickness: 0.8 cm

Raw Material: Chert - speckled cream with brown and blue mottles.

Description: Specimen #12 is a nicely reduced bifacial artifact. Five notches are asymmetrically spaced around the margins of the biface. The notches vary in size, with one small notch and a medium sized notch occurring on one lateral margin, and two small notches and a large notch located on the opposite margin. One end, truncated by the largest notch, is round, and forms a "hook". The opposing end forms a point.

The bifacial form was manufactured through hard hammer, and possibly soft hammer percussion. Initial notching was done

with a punch, and pressure flaking was employed to complete each notch.

Eccentrics similar to this have been recovered at Altar de Sacrificios (Willey 1972:194-196), Altun Ha (Pendergast 1979, Figure 68 j), Barton Ramie (Willey et al. 1965, Figures 268, 280), and Kaminaljuyu (Shook and Kidder 1952:112, Figure 79 c). Given past descriptions of these forms (Willey 1972:194-196), this artifact is best classified as a hook.

Specimen #13 (Figure 1, m).

Maximum Length: 10.0 cm

Maximum Width: 5.7 cm

Maximum Thickness: 0.7 cm

Raw Material: Chert - mottled, translucent/cream.

Description: This is a nicely reduced bifacial artifact. Four notches are present, two large ones located on the distal and proximal ends, and two smaller opposing medial notches. The distal and proximal notches form two tangs at each end, one of which appears to be broken.

This artifact appears to have been bifacially worked through hard hammer and possibly soft hammer reduction. As with the majority of specimens, all notches were initially formed with a punch, and finished with pressure flaking. Further evidence for pressure flaking can be seen around the entire margin of the artifact.

Eccentrics of this form have been found at a number of sites including Altar de Sacrificios (Willey 1972:189, 218),

Baking Pot (Ricketson 1931, Plate 13, h), Caledonia (Awe 1985, Figure 149 e), Piedras Negras (Coe 1959:18), Ponces (Awe 1985:351-352), and San Jose (Thompson 1939, Plate 24-Figure b, 5). They are generally referred to as double-crescents (Coe 1959:18; Willey 1972:189, 218).

Specimen #14 (Figure 1, n).

Maximum Length: 9.6 cm

Maximum Width: 3.6 cm

Maximum thickness: 0.8 cm

Raw Material: Chert - speckled cream with brown and blue mottles.

Description: Specimen #14 is another nicely reduced bifacial eccentric. The artifact is ovoid-shaped with a somewhat off-centre perforation.

The bifacial form was created by hard hammer and possibly soft hammer reduction, followed by pressure flaking. The perforation was created by drilling out a calcium carbonate deposit, some of which still remains. These deposits often occur in chert nodules, and are a product of rock formation. After the calcium carbonate was drilled out the perforation was enlarged and regularized by chipping from the inside out, using both a punch and pressure flaking.

Forms such as this are quite common, and have been found at sites such as Altar de Sacrificios (Willey 1972:184, 218), Altun Ha (Pendergast 1982, Figures 62 h, 63 a; 1990, Figures 10 a, 17 a, 18 a, g, 75 f, 156 a, 180 b), Baking Pot (Bullard and

Bullard 1965, Figure 13 f, Plate XIX), Barton Ramie (Willey et al. 1965, Figure 268, 280), Caledonia (Awe 1985, Figure 150 a), Colha (Shafer 1991, Figure 6), Piedras Negras (Coe 1959:17, Figure 4 j), Ponces (Awe 1985:352-354), Pusilha (Gruning 1930, Plate XXII-Figures 1, 3; Joyce 1932, Plate IV-Figures 1 a, 2 a, 3 a, 5 a; Joyce, Gann, Gruning, and Long 1928:333, Plate XXXV-Figure 1), Tikal (Kidder 1947, Figure 8 h, t), and Xunantunich/Benque Viejo (Joyce 1932, Plate IV-Figure 6 a, 7 a). These items have been classified as rings (Coe 1959:17; Willey 1972:184, 218).

Specimen #15 (Figure 1, o).

Maximum Length: 8.3 cm

Maximum Width: 3.9 cm

Maximum Thickness: 0.9 cm

Raw Material: Chert, mottled translucent/cream.

Description: This is a nicely thinned bifacial eccentric. The general outline is ovoid, although two large offset notches, one on each lateral margin, have been created to form an "S"-shaped product.

It is likely that hard hammer and probably soft hammer percussion were employed during the manufacture of this item. Pressure flaking was subsequently used to produce the final form. The two large notches were created with a punch, and pressure flaking was used in the final stages. Although minimal, some step fracturing can be recognized in both notches.

This particular form occurs at Altar de Sacrificios (Willey 1972:187), Altun Ha (Pendergast 1990, Figures 69 a, 77 h, j, 78 d), Baking Pot (Bullard and Bullard 1965, Figures 13 e, k), Barton Ramie (Willey et al. 1965, Figure 268), Kendal (Coe 1959:20; Gann 1918, Figure 38 a), Naranjo (Maler 1908, Figure 19), and Piedras Negras (Coe 1959:20, 28). Eccentrics of this type have been classified as S-forms (Willey 1972:187), or notched double-pointed blades with a single offset notch (Coe 1959:20, 28).

#### CONCLUSIONS

A review of the Tzinic eccentrics shows them to be very similar to those found throughout the Maya lowlands, with the exception of the "seahorse", which may be site specific. Empirically, they closely resemble eccentrics from Altun Ha, although similarities to a number of distant sites is apparent (see Figure 2). This attests to Tzinic's, and by association Cahal Pech's, active involvement in the Maya lowland interaction sphere.

Elsewhere (Iannone 1991), I have suggested that eccentrics were major components of a lowland Maya ancestor cult. I also noted a recurrent relationship between eccentrics, stela, altars, and temples. The Tzinic context conforms to this pattern. Given this relationship, eccentrics can be considered elite oriented items associated with the core area of sites. Thus, their presence in a peripheral group demands explanation.

As previously discussed, the Tzinic group contains many

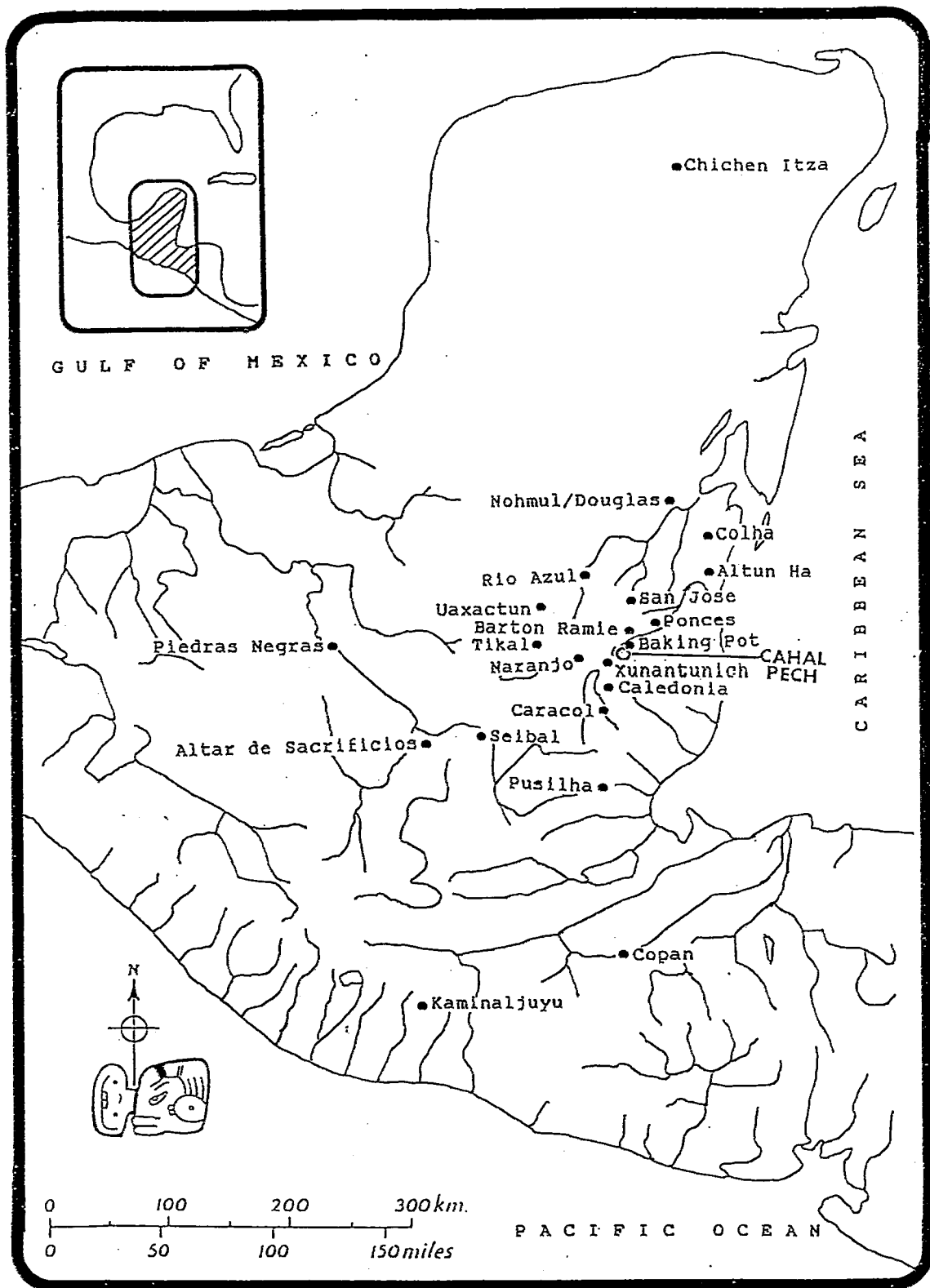


Fig. 2: Sites with at least one eccentric form similar to those recovered from the Tzinic Group at Cahal Pech, Belize.

elements usually associated with site cores (eg. eccentrics, monumental architecture, stela, elaborate crypts). The presence of these core trappings differentiates Tzinic from other peripheral groups. I would suggest that the situation at Tzinic is not unlike that discussed for the Dower House (Group 7F-1) at Tikal by Haviland (1981). Like Tzinic, the peripheral Group 7F-1 contained many of the trappings usually associated with the core, including monumental architecture, eccentrics, elaborate burials, and stela. In the case of the Dower House, Haviland (1981:115-116) concluded that it was primarily a residence for elite individuals. However, he went further in suggesting that these elite were the family of a deposed ruler. This situation prompted many of the elements usually associated with the core to appear in the new peripheral residence. Although this conclusion is only speculative with regard to our current work at Tzinic, the presence of the eccentrics and other associations does indicate that such an interpretation should be explored further.

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A Preclassic Round Structure From  
The Zotz Group at Cahal Pech, Belize

BY

Jaime Awe, Jim Aimers, & Catherine Blanchard

In contrast to investigations of ancient architectural engineering techniques, labour investment, and other utilitarian and functional considerations, many recent studies have considered Maya monumental architecture as physical manifestations of the abstract world of cosmology and social relationships (e.g. Ashmore 1990, 1991; Awe, Campbell, and Conlon 1991; Freidel and Schele 1988). In this light, the recent excavation of a round structure at the site of Cahal Pech in the Belize Valley raises a host of questions regarding the complexities of the realm of Maya ideas and their architectural expression.

THE ROUND STRUCTURE AT CAHAL PECH

The round structure at Cahal Pech is located approximately 100 m south of the site core on the eastern perimeter of a formal patio cluster known as the Zotz Group. This small settlement cluster is comprised of four mounds which sit on a raised platform 22 m long by 21 m wide. The mounds in the Zotz Group were initially tested during the 1989 field season, and intensively excavated in the summer of 1991. It was towards the end of the latter season that the round structure was discovered

beneath three rectilinear Classic period construction phases. Since few of these circular platforms have been investigated in the central Maya Lowlands, we decided to expose as much of the structure as possible before the end of the field season.

These investigations revealed that the round structure had been erected above the second earliest building platform (Floor 5) in the Str. 2 architectural sequence. It had an average height of 1.2 m, and tapered slightly to an upper diameter of 3.6 m (Figs. 1 & 2). Its walls had been constructed of cut limestone blocks set in mortar, and then stuccoed with a thick layer of plaster on the outside face. On the west side, the structure had an elliptical outset stairway, and the summit of the circular platform was capped by a thick plaster floor. A large part of this floor had been destroyed by subsequent architectural phases and by two intrusive Classic period burials.

Excavation into the round structure exposed a cut-stone wall and two burials. The wall was 45 cm below the surface of the round structure, and 85 cm west of the curved eastern wall. It was three courses high, and had a north/south orientation. A thin plaster floor extended from the top of the wall to the western limit of the excavation. At the base of the wall there was a tamped layer of *marl* over fine core fill. The core had been deposited above the floor of the building platform.

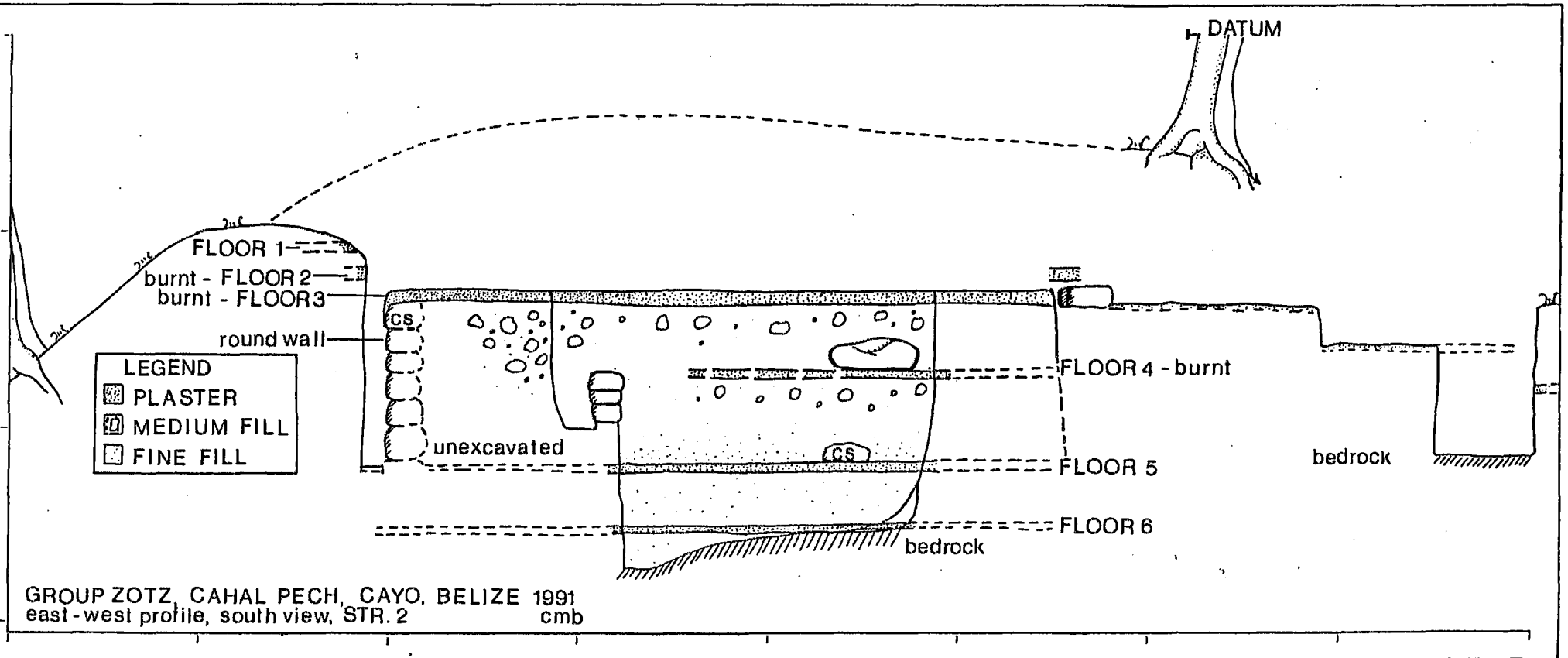
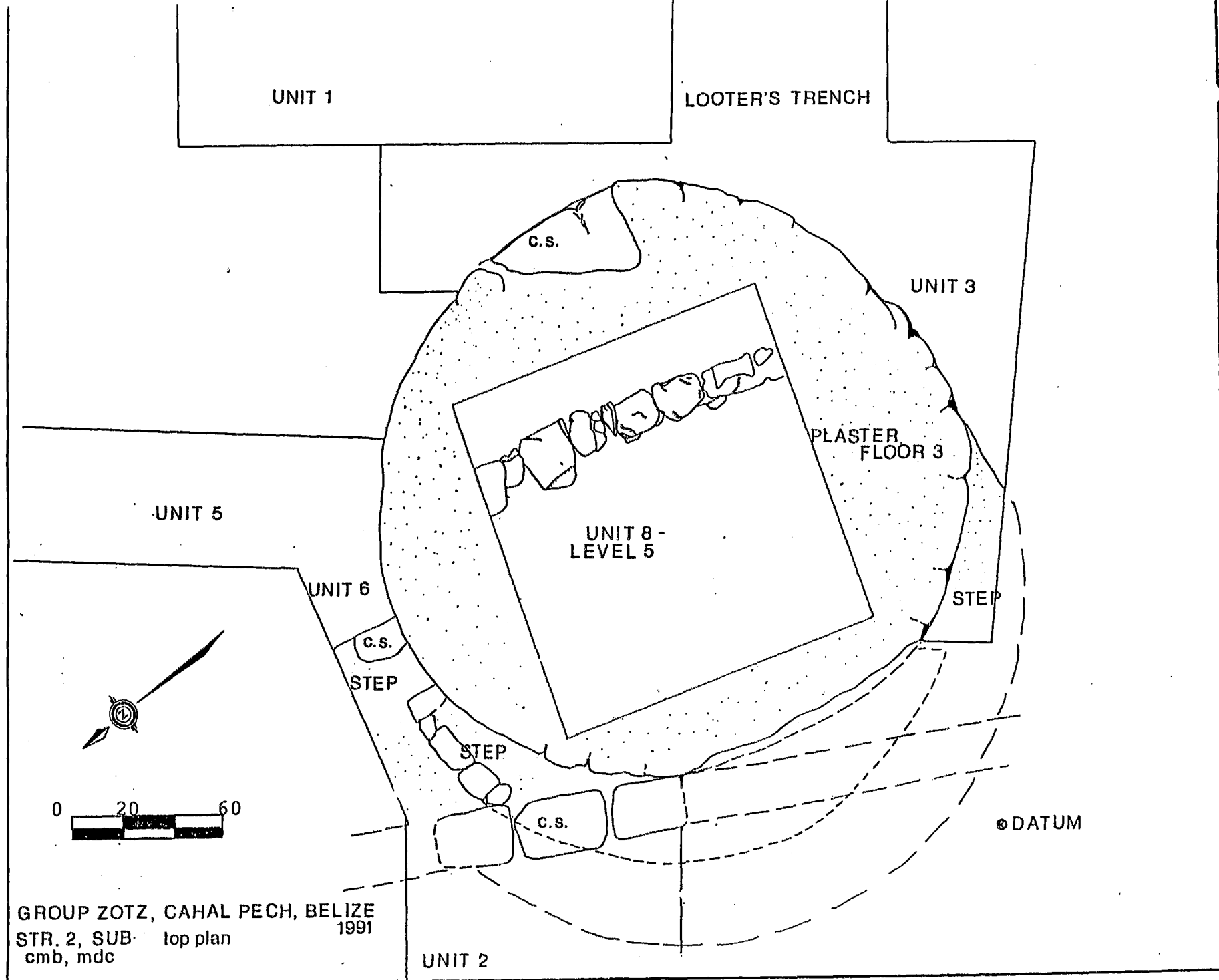


Fig. 1: East-west profile of Str. 2, Zotz Group, Cahal Pech, Belize



GROUP ZOTZ, CAHAL PECH, BELIZE  
 STR. 2, SUB top plan  
 cmb, mdc 1991

Fig. 2: Floor plan of Str.2, Zotz Group, Cahal Pech, Belize

The first of the two burials excavated was located between the curved eastern wall of the round structure and the north-south wall within. The burial was poorly preserved, extended, with the head to the south and facing east. Next to the feet lay a complete jar similar to specimens from the early Middle Formative Jocote Group (Jocote Orange Brown).

The second burial was discovered about 25 cm west of the north/south wall. It was in a much poorer state of preservation than the previous burial, it had no grave goods, and contained only a few long bones and cranial fragments. The location of this burial (25 cm from the wall), and the quantity and quality of the skeletal remains suggest that this interment was either secondary or that it was part of an offering. Pottery collected from the fill around this burial were similar to those recovered below the building platform and included a predominantly late Middle Formative collection with a few Late Formative ceramics.

In the Early Classic a rectilinear structure which appears to have supported a perishable building was constructed over the round structure. Two burials which are contemporaneous with this construction phase were excavated in the area directly above the outset stairway of the round structure. During the Late Classic period another platform replaced the Early Classic substructure, and seven cist burials were sequentially deposited beneath its floor.



The round structure at Cahal Pech is interesting both for its early date and its unusual morphology. Neither postholes or the remains of a masonry superstructure were detected above its floor, clearly indicating that the structure was an exposed platform. Dating to at least the first half of the Late Formative, this structure represents one of the earliest, apparently non-domestic, architectural forms currently known at the site.

#### COMPARISONS

It is testimony to the rarity of round structures in Mesoamerica that the seminal work on their distribution and significance was published over a half century ago. Indeed, H.E.D. Pollock's 1936 seminal study of this architectural type, and his discussion of the extensive variety of round structures in Mesoamerica, as well as their possible origins and meaning (see esp. Pollock 1936:149-173), still remains the most comprehensive source of information on this topic. In Pollock's seven part typology of round structures, the Cahal Pech structure can be considered to fall under the "simple platform" type (Pollock 1936:35).

Although many of the structures discussed in Pollock's study are located outside of the Maya area, few of these are similar to the Zotz structure. Pollock (1936:65-70) illustrates and discusses a platform from Quiengola in the Zapotecan/Oaxaca area

which measures .84 m in height and 3.34 m in diameter; that is, similar to the Zotz structure, but apparently lacking the outset stairway (Pollock 1936:65-70).

Raymond Sidrys and John Andresen (1978:649) have noted that "the possibility does exist that round structures are far more abundant in the Maya area than previously believed, since most of these structures are discovered only through excavation". It may be useful to briefly review those known circular structures with attributes comparable to those of the Cahal Pech example.

In southern Mexico, Formative and Early Classic period round structures have been reported at Tanchah and Katunil Kin in Quintana Roo (Sanders 1960:167, 169). These round structures, however, postdate those from the Belize sub-region and tend to be slightly more complex in their overall configuration.

At Becan in the Rio Bec region, two round platforms in plazuela groups were excavated by Jennifer Taschek (see Adams 1977:82, Ball and Andrews 1978). One, about 15 cm high and 4.5 m in diameter, was similar to the Zotz structure at Cahal Pech, while the other more unusual structure was well preserved and dated to the first or second century A.D. The upper 110 cm of this second structure was decorated with "polychrome curvilinear geometric designs in red, black, yellow, and green" (Ball and Andrews 1978:12). Unfortunately, as they were badly eroded the

designs were not recorded, and no interpretation of their significance has been offered.

At Seibal a circular platform, 18 m wide and without evidence of a superstructure, is somewhat comparable to the Zotz structure. This structure, however, dates to approximately 850 A.D., and is considered by Smith and Willey (1969:154-7) to be of possible early central Mexican influence, related to the worship of Quetzalcoatl (see also Sidrys and Andreson 1978:648, and below). Similarly, a large round platform (14.8 m in diameter) supporting a smaller round masonry superstructure at Nohmul has been dated to the Terminal Classic/Postclassic and is considered to be of Yucatecan influence (Chase and Chase 1982:596).

Although both structures are of Preclassic date, the Cahal Pech structure has a significantly smaller diameter than that of the round platform excavated at Chan Chen (10.9 m). The Chan Chen example is located on the south side of a plaza, with a "small outset stairway... on the southwestern side" (Sidrys and Andresen 1978:643). In addition, the Chan Chen structure was clearly surmounted by a wattle and daub superstructure during its period of use. The investigators concluded that:

Both the size and elevation of the platform, as well as the presence of the ramp and large stairway, suggest that the perishable superstructure had a public or ceremonial function (Sydris and Andresen 1978:649).

Structure BR-1 at Barton Ramie (Willey et al 1965) is also

significantly larger than the Cahal Pech structure (2 m in height by 28 m in diameter). Unlike the Chan Chen structure, however, a domiciliary rather than ceremonial function has been suggested for the Barton Ramie mound (see Willey et al 1965:47). This interpretation was based upon indications of a wattle and daub superstructure as well as the recovery of materials such as large quantities of sherds, fragments of shell and animal bone, flint chips, and broken stone artifacts including manos and metates. Dating from the Early Classic (late Hermitage phase), in its earliest phase the Barton Ramie structure had been accessible by an appended rectangular ramp on its eastern side (Willey et al 1965:52).

At Altun Ha, Pendergast (1982:186-187, Fig. 98) uncovered another round structure (Str. C-13,3rd) with several similarities to the Cahal Pech example. The structure at Altun Ha,

...consisted of a rather irregular circular platform (Plate 47), with a maximum height of 130 cm (Platform 2), to which access was provided at the west by a two-step stair (Stair 1), which led to low subsidiary platform (Platform 1)... Excellent preservation of almost all of the upper surface of Platform 2 left no doubt that 3rd A was complete as found; no Building, either of masonry or of perishable material, ever stood atop the structure (Pendergast 1982:186-187).

Pendergast (1982:187) adds that the absence of a building above the platform "rules out identification of the platform as a residence", and that "classifying 3rd A as a ceremonial structure...is equally secure".

Remains of a comparatively ancient "keyhole shaped" structure of similar size to the Cahal Pech example has also been uncovered at Uaxactun. Ricketson and Ricketson (1937:114-117) suggested that the small structures may have been a dance platform. The authors also compared the floor plan of the structure to a pettery model of a circular structure dedicated to Quetzalcoatl/Ehecatl, the ancient Mexican God of wind (see Heyden and Gendrop 1980:186). Similarly, at Utatlan, Lothrop has suggested that a round platform, which is similar to the Zotz structure, was an altar (Pollock 1936:125). Typically, however, the morphology of both structures and the limited associated data permits little more than speculation as to their significance.

Haberland (1958) has recorded one Middle Preclassic round structure at Luisville in Northern Belize. There is only limited data available on this construction, but it appears to have been approximately 1 m in height with a small inset stairway. It is unfortunate that there is so little information on the Luisville structure, since it seems to be quite comparable with the Zotz structure, and along with the Chan Chen example the two seem to be "part of the same Preclassic architectural tradition" (Sydrys and Andresen 1978:649).

#### INTERPRETATION

Esther Pasztory (1978:110) recently reported that "round

buildings are a rarity in Mesoamerican architecture of any period", that they are virtually absent in the Maya area after the Formative period, and that only in the provincial Huasteca area were they common during the Classic period. Pasztory (1978:110) concludes:

The sporadic appearance of round walls, platforms, and buildings in Yucatan and Oaxaca indicates an interest in continuous, unbroken contours instead of the harsh contrasts preferred in the architecture of the early Middle Classic period. Technical problems in the building of curving masonry walls and vaults over circular plans may account for the rarity of round structures, despite their aesthetic appeal.

Pasztory (1978:114-116) attributes an emphasis on rectilinearity in Maya art and architecture in the Classic period to the influence of Teotihuacan, particularly in the period from 350 to 500 A.D.

As Anthony Aveni has demonstrated, it is likely that many of the round structures in ancient Central America were observatories. The most famous example is of course the Caracol at Chichen Itza, a structure which Aveni (1980:258-267) suggests was a calendar in stone, crucial to timekeeping in the flat terrain of the Yucatan. Interestingly, in its first stages the Caracol was a simple circular platform (Pollock 1936:159). A similar structure is located at the site of Mayapan (see Shook 1954). However, these relatively elaborate structures are Postclassic in date, significantly later than the Middle to Late Formative Cahal Pech structure.

Aveni has also noted a "bizarre" (Aveni 1980:271) solid masonry round structure at the site of Puerto Rico in the northern Peten. Similar in diameter to the Zotz structure, the morphology of the tower-like Puerto Rico structure has completely eluded any explanation, astronomical or otherwise.

In the early 1900s, Thomas Gann apparently documented several curvilinear mounds in Belize. His observations are cited by Pollock in his 1936 study and these comments bear repeating at length:

The mounds vary greatly in size and in manner of construction, but on the whole appear to be rather crude affairs, rough blocks of limestone set in limestone dust and earth being the most prevalent form of construction...Excavation has shown these mounds to consist of solid rubble fill, to contain simple burials, or to enclose cists, burial chambers, or architectural remains of an earlier epoch. On this basis Gann has classified the structures as being sepulchral mounds, refuse mounds, foundation mounds, defensive mounds, lookout mounds, and mounds of uncertain use (Pollock 1936:123).

The description of these mounds matches the overall morphology of the Zotz structure at Cahal Pech, but given its size, location, and form, it seems unlikely that the structure was of defensive or lookout purposes, nor do its contents suggest a refuse or foundation mound. Unfortunately, Pollock writes little more about the Belize structures, claiming that "for the purposes of this paper the foregoing remains do not appear of great significance" (Pollock 1936:123).

The possibility that the Zotz structure was a form of

sweatbath has been suggested on the basis of analogy with a similar contemporary form near Cahal Pech (J. Taschek, personal communication 1991). Certainly it is not unusual for sweatbaths to be circular or semi-circular (see Satterthwaite 1952:11-22), and the sweatbath function is of great interest for the significance it holds in the Americas, and virtually worldwide. In the Maya area in particular, ethnohistoric and ethnographic sources indicate that sweatbaths were associated with childbirth (Vogt 1969:89), death and rebirth (Cohodas 1985:59), war (Pickands 1978:130) and the treatment of disease (Satterthwaite 1952:8; Tozzer 1941:126). Aside from a section of the original surface which was burnt, however, the structure at Cahal Pech displays no clues which would suggest a sweatbath function. In particular, a diagnostic feature of the sweatbath in Mesoamerica is the presence of a trough-like drainage depression, an important feature for which we have no evidence at Cahal Pech. Furthermore, and apart from its generally round shape, there are no other documented sweatbaths with similar morphologies and elevation to the Cahal Pech structure.

The number of human interments throughout the construction sequence of Structure 2 in the Zotz Group must also be taken into account. The large number of single and sequential burials in this mound provides convincing evidence that the structure may have served as a family shrine from its initial construction in the Late Middle Formative to its abandonment during the Late



Classic period. Evidence of copal residues on fire-clouded sections of floors also indicates that incense and other materials were being burnt on the structure. Regardless of whether the burials within it indicate its function as a family shrine, the Zotz structure certainly seems to have fulfilled a ceremonial role in the Zotz patio cluster. The outset stairway clearly suggests that the Formative period inhabitants of the Zotz Group were ascending the structure, possibly for ritual performance of some description. Of course, the possibility that the structure was a performative platform does not necessarily exclude the function of ancestor shrine.

Given that the Maya's later history certainly demonstrates a near obsession with architectural expression, it is logical to see the Zotz structure as embodying significant social/religious significance to its builders and users. Indeed, although it is not particularly large, the Zotz structure fulfils the archaeological definition of monumental:

Monumental architecture embraces large houses, public buildings and special purpose structures. Its principle defining feature is that its scale and elaboration exceed the requirements of any practical functions that a building is intended to perform (Trigger 1990:119)

Because the stage-like qualities of such a structure are its salient feature, a circular dance or otherwise ceremonial platform is in a sense proto-monumental. Similarly, in his discussion of ancient Maya "public architecture", Marvin Cohodas (1985) places round structures in the same category as the radial

pyramid, portal arches, ballcourts, and causeways, suggesting that they "are all specialized forms to serve distinct ritual functions" (Cohodas 1985:51).

Whereas the highly decorated monumental architecture built during and after the Late Formative in the Maya area communicates its meanings clearly through its mass, shape, and decoration, more modest, earlier ceremonial structures such as open platforms derive their deepest significance from the actions of those who move on and around them. In this sense, they may be considered reflective of the less hierarchical, more charismatic, community-focused politico-religious organization and ritual now considered to be characteristic of the Maya before the emergence of monumental architecture and the stela cult (see Freidel 1981, Freidel and Schele 1988).

Current evidence suggests that only after the inception of the Late Formative did monumental architecture in the Maya area begin to take on elite mortuary functions (see, e.g. Freidel and Schele 1989:242). Subsequently, Classic period monumental temple-type architecture and carved stelae appear to have glorified and even deified an ascribed elite (see Freidel and Schele 1988). In contrast, the symbolic significance of an open air platform would seem to be necessarily linked to the performance of individual living agents.

Two manifestations of such "performance" might be the oratory of charismatic village-level political leaders, or some form of ritual performance by shamans. An intriguing possibility is suggested by the comments of the late seventeenth century historian Fuentes y Guzman. He describes a round structure from the Guatemalan highlands where "public audience was given..[and] sentences of their judges was executed; who...in justice heard civil and criminal law" (Guzman, in Pollock 1936:15). Pollock notes, however, that Guzman's account has been disputed, therefore his report may be considered inaccurate.

In any event, we can less speculatively suggest that during the Late Formative-Early Classic transition, changes in the ideology of Maya leadership and/or religion would have made the Zotz structure obsolete, leading to its replacement by a structure of significantly different form and quite possibly different utilitarian and symbolic functions. Whatever these were, the seven Late Classic cist burials suggest that even at this late date the location of the formerly round structure was of some significance.

In the interest of completeness, it should be noted that Pollock concluded in his 1936 report that most circular buildings were references to the god of wind and air, Quetzalcoatl, known in the Maya area as Kukulcan, a creator god with attributes of motion and life (Pollock 1936:160). Part of Pollock's reasoning

is that in Mexico the god was believed to arrive and depart from the east, and the structures in question faced that direction, while in the Maya Yucatan the structures faced west, the direction from which Kukulcan was believed to have come. The Maya structure at Cahal Pech certainly fits this pattern in its position on the eastern edge of the Zotz group (i.e. facing west), although it is accepted that, in general, the east was considered a place of honour among the Classic Maya (Coggins 1980:729; Chase 1983:1258). In addition, at the time of Pollock's study, round structures of the antiquity of the Zotz structure were unknown in the Maya area, and a good deal of Pollock's interpretation seems to ride on Mexican influence in the Maya area (see especially Pollock 1936:162;171).

Pollock himself notes that the simple platform type of structure found at the Zotz group does not seem to be associated with Quetzalcoatl in the ethnohistoric literature or codices, and he cites (with some reservations) Sahagun's description of an uncovered platform of 5.1 m by 2.55 m at Tenochtitlan. In this example, the platform was used as a place to burn incense to the world quarters and was where a youth played his flute before he was sacrificed (Pollock 1936:10). Sahagun also noted a similar platform used for dance performances by costumed dancers (Pollock 1936:11). Again, performance seems to be the salient feature of simple round platforms, even in the highly stratified context of Aztec society.

From a much broader perspective, Guidoni's cross-cultural survey of non-Western architecture (1987) clearly demonstrates a tendency for rectilinear dwellings to replace circular ones with increasing social complexity. Nevertheless, even in highly complex cultures, roundness is often preserved in ceremonial architecture (e.g. Hindu, Tibetan, Chinese and Islamic see Mirsky 1976:44, 73-74, 77, 116) and it is common virtually worldwide for ceremonial architecture to be more conservative in reflecting ideological change than more utilitarian forms (Pollock 1936:152, see also Guidoni 1987:37, 61-69 on the Siberian *yurt* and the Pueblo *kiva*). If the round structure at Cahal Pech was indeed of ritual/ceremonial importance, it's shape may well be reflective of very ancient Maya ideas which were made obsolete or considered undesirable by those who renovated the structure in the Early Classic.

For the Americas, Cecilia Klein (1980:12) has suggested:

a general tendency for native groups to associate socio-political power with key cosmic concepts generally expressed in circular form. I observed, however, that, as one moves from small, egalitarian band or tribal level societies to large, stratified and centralized societies, one sees symbolic emphasis gradually shift from the rim, or totality, of the star-studded cosmic circle to its centre as the axis mundi and locus of the ascending/descending sun in particular. Round buildings become less common, smaller, more expensive, and more exclusive as well. Thus circular structures increasingly come to be directly associated with, and even reserved for, certain powerful subgroups or, finally, individuals whose social control identifies them with the most important celestial bodies and most strategic places.

This scheme explains rather neatly the disappearance of

relatively modest open circular platforms of the Middle and Late Preclassic, and the subsequent re-emergence of circularity in buildings assumed to have an astronomical observation function in the Postclassic, but certainly more research is needed in this difficult area.

The presence of a round structure at Cahal Pech brings to mind some of the broader questions which inevitably present themselves in the study of architectural form. As Klein and Guidoni indicate, roundness seems to have distinctly different symbolic connotations than rectilinearity in almost every cultural context. Although we may compare the Maya structures with those of other cultures, or speculate based on our knowledge of Maya iconography and cosmology, the Maya themselves have left us few clues as to the meanings that may have been embodied in the Zotz structure, and their Formative period round structures in general.

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**AN ANALYSIS OF THE FAUNAL REMAINS FROM STRUCTURE B-4,****UNITS 4 AND 5, CAHAL PECH, BELIZE****BY****NORBERT STANCHLY AND JACQUELINE DALE****INTRODUCTION**

A preliminary analysis of the faunal remains recovered from structure B-4, units 4 and 5, Cahal Pech, indicates that its inhabitants were utilizing a wide variety of animal resources throughout its occupation (1000 B.C.- 900 A.D.). These included mammal, fish, bird, reptile, and crab remains, as well as several mollusc species of both local and marine origin.

Besides providing important information on Maya subsistence, particularly during the early Middle Formative period (1000-600 B.C.), evidence for differential access to faunal resources and possible ceremonial utilization of fauna is also suggested.

This report will focus on the mammalian, reptilian, and shell remains recovered since the analysis of fish, bird, and crustacean elements is not yet complete. It is hoped that the final analysis of all faunal material recovered from B-4 will be completed by the end of 1992.

GENERAL OBSERVATIONS

The faunal sample presented for analysis from Str. B-4 consisted of 2273 specimens. Of these, 1553 (68.3%) are shell remains, and 720 (31.7%) are bone. All of the shell remains have been identified to order or lower taxon and are represented by snail, bivalve, and crustacean elements of both local and marine origin. Only 141 (19.6%) of the bone remains are considered identifiable below the class level. Mammal, fish, bird, and reptilian species are represented. To date, 117 of these have been identified to family or lower taxon and are reported on in detail below. The remaining 589 bone specimens were too fragmented to be identified below the class level. This low percentage of identifiable bone material may be attributed to poor preservation factors such as alkaline soils and Maya construction techniques. Almost all of the bone material exhibits characteristic etching caused by alkalinity and root damage.

Table 1: Faunal Sample Structure B-4

	<u>NISP</u>	<u>% Sample</u>
Shell Remains		
<u>Pachychilus glaphyrus</u>	490	21.6%
<u>Nephronaias ortmanni</u>	432	19.0%
<u>Pachychilus indiorum</u>	416	18.3%
Conch shell	166	7.3%
<u>Pachychilus sp.</u>	32	1.4%
<u>Pomacea flagellata</u>	15	0.7%
Brachyura	2	0.1%
Total	1553	68.3%
Bone Remains		
Unidentifiable	579	25.5%
<u>Crocodylus sp.</u>	41	1.8%
<u>Odocoileus virginianus</u>	16	0.7%
<u>Canis sp.</u>	14	0.6%
<u>Didelphis marsupialis</u>	12	0.5%

<u>Sylvilagus brasiliensis</u>	11	0.5%
<u>Cervidae</u> sp.	6	0.3%
<u>Criptotis</u> sp.	3	0.1%
<u>Homo sapiens</u>	3	0.1%
<u>Ototylomys phyllotis</u>	2	0.1%
<u>Procyonidae</u> sp.	2	0.1%
<u>Mazama americana</u>	2	0.1%
<u>Tayassu</u> sp.	2	0.1%
<u>Sciurus</u> sp.	1	trace
<u>Sigmodon hispidus</u>	1	trace
<u>Cricetidae</u> sp.	1	trace
Not yet identified (incl. bird, fish remains)	24	1.1%
Total	720	31.7%
Total	2273	100.0%

#### General Observations: Unit 4

A total of 1054 faunal remains were presented for analysis, representing 46.4% of the total sample. Of these, 616 (58.4%) were shell and 438 (41.6%) were bone remains. All of the shell remains have been identified to order or lower taxon. Only 56 of the 438 bone remains were considered identifiable below the class level. This represents only 12.8% of all bone material recovered from unit 4. To date 43 have been identified to family or lower taxon.

Bone material was recovered from only the lowest levels within Unit 4 (i.e. levels 9, 10, and 11). These levels have been radiocarbon dated to the early Middle Formative period (1000-600 B.C.) and currently represent the earliest stratigraphic phases at the site of Cahal Pech (Dale and Stanchly 1991:16). Shell remains were recovered from throughout the unit. Appendix B lists the distribution of all faunal remains by provenience.

Six taxa of shell and thirteen taxa of mammals are represented within the unit. Table 2 below illustrates the frequencies of identified bone and shell remains recovered.

Table 2: Faunal Sample Str. B-4 Unit 4

	<u>NISP</u>	<u>% Total</u>
Shell Remains		
<u>Pachychilus indiorum</u>	197	31.9%
<u>Pachychilus glaphyrus</u>	189	30.7%
<u>Nephronaias ortmanni</u>	144	23.4%
Conch shell	54	8.8%
<u>Pachychilus</u> sp.	27	4.4%
<u>Pomacea flagellata</u>	5	0.8%
Total	616	100.0%
Bone Remains		
<u>Canis</u> sp.	9	20.9%
<u>Sylvilagus brasiliensis</u>	9	20.9%
<u>Odocoileus virginianus</u>	7	16.3%
<u>Cervidae</u> sp.	4	9.3%
<u>Criptotis</u> sp.	3	7.0%
<u>Ototylomys phyllotis</u>	2	4.7%
<u>Procyonidae</u> sp.	2	4.7%
<u>Tayassu</u> sp.	2	4.7%
<u>Didelphis marsupialis</u>	1	2.3%
<u>Homo sapiens</u>	1	2.3%
<u>Sciurus</u> sp.	1	2.3%
<u>Sigmodon hispidus</u>	1	2.3%
<u>Cricetidae</u> sp.	1	2.3%
Total	43	100.0%

General Observations: Unit 5

A total of 1219 faunal remains have been presented for analysis to date. Shell remains account for 937 specimens or 76.9% of these, while 282 or 23.1% are bone. All of the shell remains have been identified to order or lower taxon. A total of 86 or 30.5% of the bone remains were considered identifiable below the class level. To date, 74 have been identified to family or lower taxon.

Identified bone and shell remains are listed in Table 3 below.

Table 3: Faunal Remains Str. B-4 Unit 5

	<u>NISP</u>	<u>% Total</u>
Shell Remains		
<u>Pachychilus glaphyrus</u>	301	32.1%
<u>Nephronaias ortmanni</u>	288	30.7%
<u>Pachychilus indiorum</u>	219	23.4%
Conch shell	112	12.0%
<u>Pomacea flagellata</u>	10	1.1%
<u>Pachychilus sp.</u>	5	0.5%
Brachyura	2	0.2%
Total	937	100.0%
Bone Remains		
<u>Crocodylus sp.</u>	41	55.4%
<u>Didelphis marsupialis</u>	11	14.9%
<u>Odocoileus virginianus</u>	9	12.2%
<u>Canis sp.</u>	5	6.7%
<u>Homo sapiens</u>	2	2.7%
<u>Sylvilagus brasiliensis</u>	2	2.7%
<u>Mazama americana</u>	2	2.7%
<u>Cervidae sp.</u>	2	2.7%
Total	74	100.0%

ACCOUNT OF SHELL REMAINS

Six taxon are represented by 1553 shell remains. These include the freshwater river snail known locally as jute or tutu (Pachychilus spp.), the apple snail (Pomacea sp.), marine conch shell (Strombus?), freshwater bivalves (Nephronaias ortmanni), and crab elements (Brachyura). These are discussed in greater detail below. Table 4 shows the distribution of these species within Str. B-4.

Table 4: Distribution of Shell Remains

	<u>Unit 4</u>	<u>Unit 5</u>	<u>Total</u>
Gastropoda			
<u>Pachychilus glaphyrus</u>	189	301	490
<u>Pachychilus indiorum</u>	197	219	416
Conch shell	54	112	166
<u>Pachychilus sp.</u>	27	5	32
<u>Pomacea flagellata</u>	5	10	15
Pelecypoda			
<u>Nephronaias ortmanni</u>	144	288	432
Crustacea			
Brachyura	-	2	2
Total	616	937	1553

GASTROPODA - Both local and marine species are represented. The majority of the sample consists of the freshwater river snail jute (Pachychilus spp.). At least two species are represented by the 938 remains recovered. Also represented, though to a much lesser extent, is the freshwater apple snail (Pomacea flagellata). The remainder of the gastropods are marine conch shell fragments (Strombus?) which would have been imported from the Caribbean coast. These have been tentatively assigned to the family Strombidae since the analysis of these shells is not yet complete.

Jute (Pachychilus spp.) - This genus is represented at Cahal Pech by at least two species, Pachychilus indiorum and Pachychilus glaphyrus. These two species can be distinguished in the archaeological record by the presence or absence of shell sculpturing. Sculpturing is present on the shell of P. glaphyrus, but is absent on P. indiorum.

The majority of the jute snails recovered from Cahal Pech belong to P. glaphyrus which are characteristically larger and heavier than P. indiorum. A total of 490 (52.2%) remains of P.

glaphyrus were identified. P. indiorum is represented by 416 (44.3%) remains, while the remaining 32 (3.4%) specimens have not been identified below the genus level. Almost all remains examined had broken spires, usually along the third or fourth whorl from the apex, indicating that the snails were used as a food source by the inhabitants of Cahal Pech before deposition. Jute snails are still prepared and eaten by some of the modern Maya residents of the region today though the use of the snail as a food source appears to be on the decline and restricted more and more to the elderly generations of the Maya (Healy et al. 1990).

The preferred habitat of the jute snail is in fast moving, shallow waters. The snail would have therefore been easily obtained from local rivers and streams encompassing the Cahal Pech area.

Hammond (1982:157) has suggested that the jute may have been overexploited during the Late Classic period, based on a reduction in average snail size of specimens recovered at the site of Lubaantun in southern Belize. No visible evidence for overexploitation of the jute is present at Cahal Pech. The average size of jute remains recovered from B-4 appears to have remained constant throughout its occupation. However, no metrical analysis has yet been undertaken to investigate the possibility of overexploitation.

Emery has calculated a modern jute population of between 3 million during the dry season and 14 million in the wet season for the immediate area surrounding the site of Pacbitun, suggesting



that overexploitation of the snail would involve a considerable "harvest pressure" (Healy et al. 1990:174).

As a cautionary note, it seems unlikely however, that jute populations during the past would have been as great as they are today, when population and dietary differences between members of modern and ancient Maya communities are taken into account. As stated above, modern consumption of the jute is minimal, particularly among younger generations of Maya, and has been on the decline for some time (Healy et al. 1990:178-180). This, in accordance with a relatively low population of modern Mayan residents when compared to population estimates given for the ancient Maya, suggests that less harvest pressure is applied on the jute today, which would allow the population to grow and may account for their presence in large numbers. Past populations of the jute would therefore most likely have been fewer in number and may indeed have been susceptible to overexploitation by the Maya. However, as Healy et al. have stated (1990:174), this remains to be investigated.

Pomacea flagellata- The apple snail, as it is more commonly known, is represented by a total of 15 remains. This represents only 1% of all shell remains recovered. This snail is known to have been used as a food source by the ancient Maya, and may also have played an important role in ceremony and mythology (Moholy-Nagy 1978; Emery 1986, 1989).

The low percentage of recovered remains may be attributable to habitat preferences of the apple snail (Jaime Awe, personal

communication). Pomacea inhabitat slow moving waters, i.e. swamp or marsh type environments, at a depth of usually 1-2 metres. These types of environments are not found in the immediate area surrounding Cahal Pech.

Conch Shell (Strombidae?) - A total of 166 conch shell fragments have been tentatively identified as belonging to the family Strombidae. This represents 10.7% of all shell remains recovered, and 14.8% of all gastropod remains. Worked specimens as well as charred fragments were recovered. The analysis of these is not yet complete.

PELECYPODA - This class is represented by only one species at Cahal Pech. A total of 432 remains of the freshwater bivalve Nehronaias ortmanni were recovered, representing 27.8% of all shell remains. This included 180 right valves, 178 left valves, and 74 fragments which could not be assigned to side, representing a minimum of 178 individuals.

CRUSTACEA - Two crab claw portions were recovered. To date, these have only been identified to taxonomic order (Brachyura). Crabs that might be expected in the area are the blue crab (Callinectes sapidus), stone crab (Menippe mercenaria), and the blue land crab (Cardisoma guanhumi) (Hartshorn et al. 1984:138). Both elements were calcined.

#### ACCOUNT OF BONE REMAINS

A total of 720 bone remains have been analyzed. Included in this total are mammal, reptile, fish, and bird remains, as well as

several unidentifiable fragments (see Table 1 above). The distribution of identifiable bone is given below.

Table 5: Identifiable Bone Remains By Zoological Class

	<u>Unit 4</u>	<u>Unit 5</u>	<u>Total</u>
Mammal	47	38	85
Reptile	-	42	42
Fish	6	5	11
Bird	2	1	3
Total	55	86	141

As mentioned above, to date only 117 of these remains have been identified to family or lower taxon. The remaining 24 identifiable elements included 11 fish bones, 3 bird bones, 1 turtle remain, and 9 mammalian remains.

The fish bones recovered are believed to represent freshwater species. Included among the fish bones are 2 pterygiophores, 1 dentary, 1 pectoral spine, 1 vertebra, 1 maxilla portion, 1 supraoccipital, 1 posttemporal, and 3 elements which have yet to be identified. The pterygiophores were previously wrongly identified as frog urostyles, while the 3 as of yet unidentified elements were thought to be of avian origin (Dale and Stanchly 1991).

Bird bones are represented by a femur, coracoid, and ulna. The size of these remains suggests that they are from a small perching bird (Passeriformes).

One turtle carapace fragment (marginal) was recovered but has not yet been identified.

The remaining 9 mammalian bones to be identified have been

assigned to taxonomic order. These included artiodactyl (deer or peccary), carnivore, and rodent bones.

REPTILIA - A total of 41 remains have been identified as crocodile (Crocodylus sp.). All are cranial elements and most likely represent only one individual. To date, portions of a partial maxilla and premaxilla, as well as a complete dentary (Fig. 1) have been identified. The remaining 38 fragments are believed to represent portions of these elements. No teeth were recovered. These may have been removed from the animal and used for ornamental purposes.

These remains belong to either the American crocodile (Crocodylus acutus) or to the Morelet's crocodile (Crocodylus moreleti). The American crocodile is present along coastal waters, while the smaller Morelet's can be found in inland river systems. Because no comparative reference material was available for the Morelet's crocodile, the authors were unable to securely assign the remains to either species, although a classification of Crocodylus moreleti may be more likely due to the inland location of Cahal Pech.

MAMMALIA - Fourteen taxa are represented by the 76 remains identified to family or lower taxon. These included dog (Canis sp.), deer, rabbit, opossum, peccary, rodent, insectivore, and human remains. Very few remains exhibit any evidence of modification. It is possible that poor preservation of the faunal material may account for the lack of evidence for modification, such as cut marks. Only one charred element has been identified.

Deer, dog, rabbit, and peccary would have been used as food sources by the Maya. It is possible that the opossum may also have been consumed.

Table 6: Distribution of Mammal Remains

	<u>Unit 4</u>	<u>Unit 5</u>	<u>Total</u>	<u>(%)</u>
<u>Odocoileus virginianus</u>	7	9	16	(21.1)
<u>Canis sp.</u>	9	5	14	(18.4)
<u>Didelphis marsupialis</u>	1	11	12	(15.8)
<u>Sylvilagus brasiliensis</u>	9	2	11	(14.5)
<u>Cervidae sp.</u>	4	2	6	(7.9)
<u>Criptotis sp.</u>	3	-	3	(4.0)
<u>Homo sapiens</u>	1	2	3	(4.0)
<u>Ototylomys phyllotis</u>	2	-	2	(2.6)
<u>Procyonidae sp.</u>	2	-	2	(2.6)
<u>Mazama americana</u>	-	2	2	(2.6)
<u>Tayassu sp.</u>	2	-	2	(2.6)
<u>Sciurus sp.</u>	1	-	1	(1.3)
<u>Sigmodon hispidus</u>	1	-	1	(1.3)
<u>Cricetidae sp.</u>	1	-	1	(1.3)
Total	43	33	76	(100.0)

Deer (Cervidae) - A total of 24 (31.6%) deer elements were identified, representing a minimum of 3 individuals. This included 16 white-tailed deer remains (Odocoileus virginianus), 2 red brocket deer bones (Mazama americana), and 6 elements which could only be identified to the family level. At least two white-tailed deer and one brocket are represented. Two modified elements were recovered. This included one metapodial fragment which has been polished along one edge, and one drilled scapula which has been tentatively identified as cervid (Fig. 2b). The function of these is unclear. One white-tailed deer charred antler fragment was also recovered.

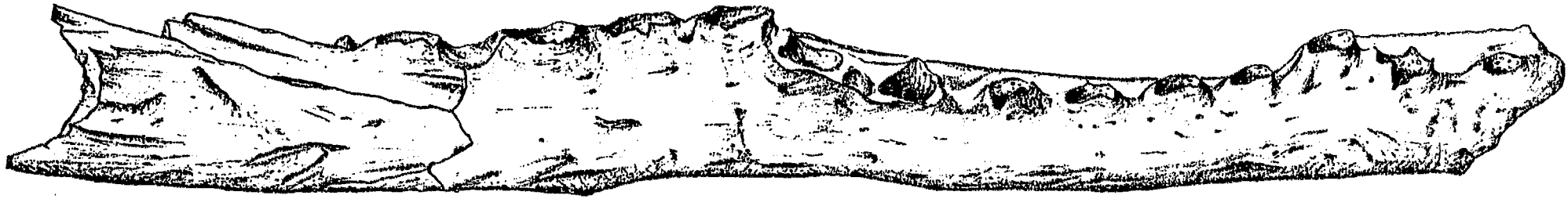
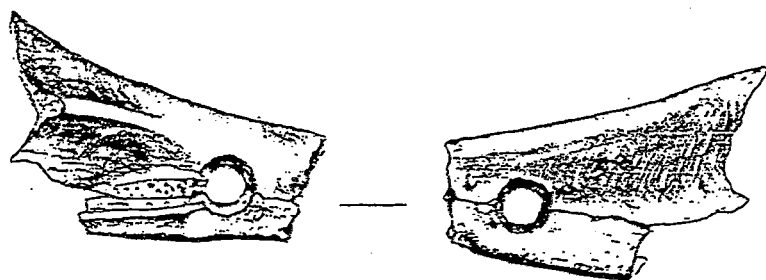
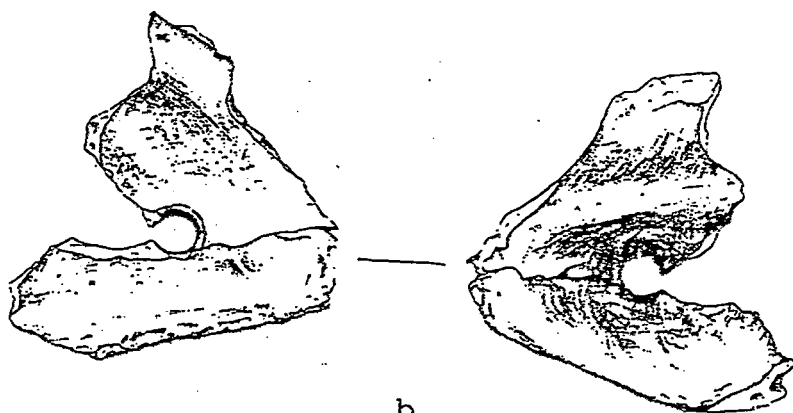


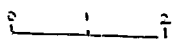
Fig. 1: Crocodile mandible from Unit 5, Str. B-4, Cahal Pech, Belize



a



b



c

Fig. 2: Modified Animal Remains from Cunil Contexts  
(1000-800 B.C.) in Str. B4, Cahal Pech, Belize.

Deer were the preferred source of meat for the Maya, especially among the elite (Pohl 1985:137). Their remains have been found on many sites and in some cases, such as at Lubaantun, they greatly outnumber other animal remains recovered (Hammond 1982:158).

The majority of deer elements recovered are those of the hind limbs (pelvis, femur, tibia, calcaneum, and astragalus). Pohl has stated that the hind legs of deer were often served as offerings in religious ceremonies (1985:141). She also discusses the distribution of left and right deer elements within elite contexts at Seibal and concludes that "directional symbolism" played an important role in religious activity (1985:142). This may be reflected at Cahal Pech where the majority of the hind deer limb bones recovered are right elements. However, inferences pertaining to differential access to, and ceremonial use of, fauna at Cahal Pech would be premature at this point until further study of the remains is carried out.

These investigations should shed important clues on lowland Maya utilization of faunal resources, particularly during the early Middle Formative period to which many of the remains have been dated.

Dog/Coyote (Canis sp.) - A total of 14 specimens were identified as Canis sp., representing 18.4% of identified mammal remains. A minimum of three individuals are present. It is likely that these are domestic dog remains rather than coyote based primarily on size differences between the two.



The majority of these remains (9 specimens) were recovered from the two lowest levels (10 and 11) within unit 4 which, as previously mentioned, has been dated to between 1000-800 B.C. Of interest is the fact that seven of these represent scapula portions, including one drilled specimen. The significance of this high percentage of scapulae portions is unclear. It is possible that this, together with the deer hind limb bones recovered from levels of similar age, may reflect ceremonial use. This too remains to be investigated.

Also recovered were one right mandible and one left upper canine tooth which has been drilled through the root portion (Fig. 2c).

Opossum (Didelphis marsupialis) - A total of 12 (15.8%) remains were identified. A minimum of two individuals are represented based on the presence of left radii. It is unclear whether these are intrusive elements. Although opossums are not burrowing animals they are known to den in burrows dug by other animals (Emmons 1990:15).

Forest Rabbit (Sylvilagus floridanus) - A total 11 remains (14.5%) were identified. Two individuals may be represented. Identification to species was made based on habitat preferences. Although both the cottontail (S. floridanus) and the forest rabbit are present in Central America, only the forest rabbit is found in rainforest environments while the cottontail is believed to be restricted to savannah and grassland environments (Emmons 1990:227).

Peccary (Tayassu sp.) - Two elements, including one drilled scapula (Fig. 2a), were identified as peccary, representing either the collared (T. tajacu) or white-lipped (T. pecari) species.

Procyonids (Procyonidae) - Two elements have been tentatively placed within this family. Both are humerus portions and may represent the same element. The presence of an entepicondylar foramen and size of the element was used to identify the element as most likely belonging to a procyonid. Members of this family which would be expected in Belize include the raccoon (Procyon lotor), coati (Nasua narica), kinkajou (Potos flavus), and cacomistle (Bassariscus sumichrasti) (Hartshorn et al. 1984:144).

Human (Homo sapiens) - Three human elements were identified. These included a premolar and two metacarpal fragments. No further analysis has been undertaken to establish the possible age or sex of the individual.

Intrusive Elements- Six remains recovered are considered intrusive. These include the remains of shrew (Crptotis sp.), big-eared climbing rat (Ototylomys phyllotis), hispid cotton rat (Sigmodon hispidus), and rat or mice remains identified only to family (Cricetidae). One squirrel element identified (Sciurus sp.) may also be intrusive.

#### SUMMARY

A preliminary analysis of the faunal remains recovered from within Str. B-4, Cahal Pech, suggests wide faunal resource utilization by its inhabitants throughout the Middle and Late

Formative periods. Shell and bone remains representing over twenty taxa have been identified to date. Among shell remains, the primary food source was the local freshwater jute snail. Marine conch shell is also present. The major meat sources appear to have been deer, dog, rabbit, and possibly opossum.

Both ceremonial use of fauna as well as differential access to meat sources is suggested. Further analysis of the faunal material, particularly metrical and statistical analyses, is warranted to investigate these possibilities.

The completion of the analysis of the faunal material recovered from Cahal Pech will provide important information on animal resource utilization among the lowland Maya, and may also indicate that status differences and differential access to wealth or goods that featured prominently during Classic times may have been present as far back as the early Middle Formative period.

#### ACKNOWLEDGEMENTS

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All shell identifications were made in the field by the

authors during the 1991 season. We wish to thank Jaime Awe and Mercedes Velasco for providing us with an initial introduction to some of the various shell species of Belize.

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Appendix A: List of Taxon Represented

## CRUSTACEA

Brachyura crab

## MOLLUSCA

Gastropoda  
Strombidae conch shell

Ampullaridae  
Pomacea flagellata apple snail

Pleuroceridae  
Pachychilus glaphyrus jute snail  
Pachychilus indiorum jute snail  
Pachychilus sp. jute snail

Pelecypoda  
Unionidae  
Nephronaias ortmanni freshwater mussel

## REPTILIA

Chelonia turtle

Crocodylia  
Crocodylidae  
Crocodylus sp. crocodile

## MAMMALIA

Marsupialia  
Didelphidae  
Didelphus marsupialis opossum

Insectivora  
Soricidae  
Criptomys sp. shrew

Primates  
Hominidae  
Homo sapiens human

Lagomorpha  
Leporidae  
Sylvilagus brasiliensis forest rabbit

Rodentia  
Sciuridae  
Sciurus sp. squirrel

Cricetidae	
<u>Ototylomys phyllotis</u>	big-eared climbing rat
<u>Sigmodon hispidus</u>	hispid cotton rat
<u>Cricetidae</u> sp.	mouse/rat
Carnivora	
Canidae	
<u>Canis</u> sp.	dog/coyote
Procyonidae	procyonid
Artiodactyla	
Tayassuidae	
<u>Tayassu</u> sp.	peccary
Cervidae	
<u>Odocoileus virginianus</u>	white-tailed deer
<u>Mazama americana</u>	red brocket deer
<u>Cervidae</u> sp.	deer species

Appendix B: List of Faunal Remains By Provenience

<u>Unit 4</u>	<u>Taxon</u>	<u>NISP</u>
Level 1	<u>Pachychilus glaphyrus</u>	14
	<u>Pachychilus indiorum</u>	11
	Conch	10
	<u>Nephronaias ortmanni</u>	3
	<u>Pachychilus sp.</u>	1
	Total	39
Level 1-3	<u>Pachychilus glaphyrus</u>	9
	<u>Pachychilus indiorum</u>	8
	<u>Nephronaias ortmanni</u>	5
	Conch	3
	Total	25
Level 1-4	<u>Pachychilus indiorum</u>	9
	<u>Pachychilus glaphyrus</u>	7
	Conch	3
	<u>Nephronaias ortmanni</u>	3
	Total	22
Level 2	Conch	8
	<u>Pachychilus glaphyrus</u>	7
	<u>Pachychilus indiorum</u>	5
	<u>Nephronaias ortmanni</u>	3
	Total	23
Level 3	<u>Pachychilus indiorum</u>	16
	<u>Pachychilus glaphyrus</u>	10
	<u>Nephronaias ortmanni</u>	3
	<u>Pomacea flagellata</u>	2
	<u>Pachychilus sp.</u>	1
	Total	32
Level 5	<u>Pachychilus indiorum</u>	4
	Conch	2
	<u>Pachychilus glaphyrus</u>	1
	Total	7
Level 7	<u>Nephronaias ortmanni</u>	7
	<u>Pachychilus indiorum</u>	4
	<u>Pachychilus glaphyrus</u>	3
	Conch	2
	Total	16
Level 8	<u>Pachychilus glaphyrus</u>	44
	<u>Nephronaias ortmanni</u>	35
	<u>Pachychilus indiorum</u>	30
	Conch	11
	Total	120



Level 9	<u>Pachychilus glaphyrus</u>	76
	<u>Pachychilus indiorum</u>	67
	<u>Nephronaias ortmanni</u>	54
	<u>Pachychilus</u> sp.	25
	Conch	15
	<u>Pomacea flagellata</u>	3
	unidentifiable bone	102
	<u>Odocoileus virginianus</u>	7
	<u>Cervidae</u>	3
	<u>Procyonidae</u>	2
	Artiodactyla	1
	Total	355
	Level 10	<u>Pachychilus glaphyrus</u>
<u>Pachychilus indiorum</u>		2
<u>Nephronaias ortmanni</u>		1
unidentifiable bone		18
<u>Sylvilagus brasiliensis</u>		7
fish		6
bird		2
<u>Canis</u> sp.		1
Carnivora		1
<u>Tayassu</u> sp.		1
Rodentia		1
Total	43	
Level 11	<u>Pachychilus indiorum</u>	41
	<u>Nephronaias ortmanni</u>	30
	<u>Pachychilus glaphyrus</u>	15
	unidentifiable bone	264
	<u>Canis</u> sp.	8
	<u>Criptotis</u> sp.	3
	<u>Sylvilagus brasiliensis</u>	2
	<u>Ototylomys phyllotis</u>	2
	<u>Cervidae</u>	1
	<u>Tayassu</u> sp.	1
	<u>Homo sapiens</u>	1
	<u>Didelphis marsupialis</u>	1
	<u>Sciurus</u> sp.	1
	<u>Sigmodon hispidus</u>	1
<u>Cricetidae</u>	1	
Total	372	

Appendix B (con't)

<u>Unit 5</u>	<u>Taxon</u>	<u>NISP</u>
Level 1	<u>Pachychilus glaphyrus</u>	28
	<u>Pachychilus indiorum</u>	9
	Conch	9
	<u>Nephronaias ortmanni</u>	8
	<u>Pomacea flagellata</u>	2
	Total	56
Level 1-2	Conch	20
	<u>Nephronaias ortmanni</u>	18
	<u>Pachychilus glaphyrus</u>	17
	<u>Pachychilus indiorum</u>	12
	<u>Pachychilus sp.</u>	1
	<u>Pomacea flagellata</u>	1
	unidentifiable bone	23
	<u>Odocoileus virginianus</u>	2
	<u>Homo sapiens</u>	2
	<u>Cervidae</u>	1
	<u>Canis sp.</u>	1
	<u>Mazama americana</u>	1
Total	99	
Level 1-3	<u>Pachychilus glaphyrus</u>	6
	<u>Nephronaias ortmanni</u>	3
	<u>Pachychilus indiorum</u>	2
	<u>Pomacea flagellata</u>	2
	Total	13
Level 3	<u>Pachychilus glaphyrus</u>	77
	<u>Nephronaias ortmanni</u>	52
	<u>Pachychilus indiorum</u>	48
	Conch	31
	<u>Pachychilus sp.</u>	2
	unidentifiable bone	10
	<u>Mazama americana</u>	1
	<u>Odocoileus americana</u>	1
	bird	1
	fish	1
Total	224	
Level 3-sub	<u>Pachychilus glaphyrus</u>	15
	<u>Pachychilus indiorum</u>	7
	<u>Nephronaias ortmanni</u>	5
	Conch	1
	Total	28

Level 4	<u>Pachychilus indiorum</u>	36
	<u>Pachychilus glaphyrus</u>	29
	<u>Nephronaias ortmanni</u>	25
	Conch	8
	<u>Pachychilus</u> sp.	1
	<u>Pomacea flagellata</u>	1
	Brachyura	1
	unidentifiable bone	9
	<u>Odocoileus virginianus</u>	2
	<u>Cervidae</u>	1
	fish	2
	Total	115
Level 4-sub4	<u>Pachychilus glaphyrus</u>	7
	<u>Pachychilus indiorum</u>	6
	<u>Nephronaias ortmanni</u>	3
	Conch	1
	Total	17
Level 5	<u>Pachychilus glaphyrus</u>	5
	<u>Nephronaias ortmanni</u>	4
	<u>Pachychilus indiorum</u>	2
	Conch	2
	Total	13
Level 6	<u>Nephronaias ortmanni</u>	55
	<u>Pachychilus glaphyrus</u>	31
	<u>Pachychilus indiorum</u>	29
	Conch	12
	<u>Pomacea flagellata</u>	1
	unidentifiable bone	2
	Total	130
Level 7	<u>Nephronaias ortmanni</u>	73
	<u>Pachychilus indiorum</u>	54
	<u>Pachychilus glaphyrus</u>	50
	Conch	28
	<u>Pomacea flagellata</u>	3
	Brachyura	1
	unidentifiable bone	71
	<u>Canis</u> sp.	4
	<u>Odocoileus virginianus</u>	1
	Chelonia	1
	Total	286
Level 8	<u>Nephronaias ortmanni</u>	4
	<u>Pachychilus glaphyrus</u>	2
	<u>Pachychilus indiorum</u>	1
	unidentifiable bone	11
	<u>Didelphis marsupialis</u>	5
	<u>Odocoileus virginianus</u>	1
	Total	23

Level 9	<u>Nephronaias ortmanni</u>	15
	<u>Pachychilus glaphyrus</u>	11
	<u>Pachychilus indiorum</u>	1
	<u>Pachychilus sp.</u>	1
	unidentifiable bone	47
	<u>Didelphis marsupialis</u>	6
	<u>Sylvilagus brasiliensis</u>	2
	<u>Odocoileus virginianus</u>	2
	Rodentia	1
	fish	1
Total	87	
Level 10	<u>Nephronaias ortmanni</u>	2
	unidentifiable bone	24
	Rodentia	3
	fish	1
	Total	30
Level 12	<u>Pachychilus indiorum</u>	5
	<u>Nephronaias ortmanni</u>	4
	<u>Pachychilus glaphyrus</u>	1
	Total	10
Level 13	<u>Pachychilus glaphyrus</u>	15
	<u>Nephronaias ortmanni</u>	13
	<u>Pachychilus indiorum</u>	6
	<u>Crocodylus sp.</u>	18
	Total	52
Level 14	<u>Pachychilus glaphyrus</u>	7
	<u>Nephronaias ortmanni</u>	4
	<u>Pachychilus indiorum</u>	1
	<u>Crocodylus sp.</u>	23
	Carnivora	1
Total	36	