

**RESEARCH REPORTS FROM THE PROGRAMME FOR BELIZE
ARCHAEOLOGICAL PROJECT**

Edited by:

**Fred Valdez, Jr.
The University of Texas at Austin**

Contributors

Kirsten Atwood
Grant Aylesworth
Jeffrey Brewer
Rebecca E. Bria
Paul R. Cackler
Peter Davis
David J. Goldstein
Liwy Grazioso Sierra
Jon B. Hageman
Jonathan Hanna
Brett A. Houk
David M. Hyde
Erol Kavountzis
Eleanor King
Maria Martinez
Leah Matthews
Olivia Ng
Nahum Prasarn
George Rodriguez
Leslie Shaw
Christine Taylor
Erin Thornton
Fred Valdez, Jr.
Jason M. Whitaker



**Occasional Papers, Number 8
Mesoamerican Archaeological Research Laboratory
The University of Texas at Austin
2007**

Contents

Programme for Belize Archaeological Project: Recent Investigations <i>Fred Valdez, Jr.</i>	1
Archaeological Research at Holotunich, 2006 <i>Olivia Ng</i>	9
Overview of Activities at the Medicinal Trail Site for the 2006 Season <i>David M. Hyde and Fred Valdez, Jr.</i>	15
Report on Investigations of the Preclassic Settlement at Group A of the Medicinal Trail Site <i>David M. Hyde and Kirsten Atwood</i>	23
Excavations at Subop B, Medicinal Trail <i>Liwy Grazioso Sierra</i>	35
Excavations at the Medicinal Trail Site: Operation 7 – Structure A-2, the 2006 Season <i>George Rodriguez</i>	41
Evidence of Quarrying Around an Isolated Platform Mound at The Medicinal Trail Community <i>David M. Hyde and Maria Martinez</i>	51
Report of Excavations from the 2006 Season: Operation 11 at the Medicinal Trail Site <i>Jason M. Whitaker</i>	59
Excavations of a Depression (Op. 10), at The Medicinal Trail Site: Report of the 2006 Field Season <i>Jeff Brewer</i>	71
Ballcourt and Residential Terrace Investigations at Chawak But’o’ob, Belize: Report of the 2006 Rio Bravo Archaeological Survey <i>Stanley Walling, Peter Davis, Jonathan Hanna, Leah Matthews, Nahum Prasarn, Christine Taylor, and Erol Kavountzis</i>	83
Seeds, Shells, and Sites – Research in Northwest Belize: Report of Investigations from the 2006 Field Season <i>Jon B. Hageman, David J. Goldstein, and Erin Thornton</i>	93
Maax Na: Layout and Function of a Maya City: Report on the 2006 Field Season <i>Eleanor King and Leslie Shaw</i>	109

Qualm Hill: Reconnaissance, Rediscovery, and Mapping	
<i>Paul R. Cackler, Stanley L. Walling, David M. Hyde, Fred Valdez, Jr.</i>	117
Results of the 2006 Investigations at Say Kah, Belize	
<i>Brett A. Houk, Grant Aylesworth, Liwy Grazioso Sierra, Rebecca E. Bria</i>	127
Appendix A: 2006 Say Kah Ceramic Data	151

PROGRAMME FOR BELIZE ARCHAEOLOGICAL PROJECT: RECENT INVESTIGATIONS

Fred Valdez, Jr., The University of Texas at Austin

INTRODUCTION

Most of the papers and reports presented in this volume represent research from the 2006 field season of the Programme for Belize Archaeological Project (PfbAP). The 2006 season marked the 15th year of consecutive research in Belize by the PfbAP. The property on which the PfbAP operates is located in northwest Belize and known as the Rio Bravo Conservation and Management Area (RBCMA; see Figure 1).

The RBCMA region is owned and operated by the Programme for Belize (Pfb) a wholly owned and managed Belizean conservation organization. The PfbAP, in collaboration with Pfb, is charged with the task of documenting sites and determining research avenues as well as protection measures for all cultural property concerns.

The Programme for Belize Archaeological Project conducts its research with the intent of producing an integrated view of the history and cultural evolution of northwest Belize. Of specific research interest had been the Maya Period (of ca. 1000 B.C. to A.D. 900), but now has been broadened to include pre-Maya data as well as early Historic Period activities. The RBCMA includes urban centers, towns, villages, and hamlets (Figure 2) of the prehistoric Maya. Approximately 60 such sites have been identified of which five are currently categorized as “cities.” The region also includes several known early historical settlements. The long-term research intent and research design is to sample each level within the settlement hierarchy of the prehistoric Maya for site functions and occupational chronologies of the region.

BACKGROUND

The PfbAP began its research program in the Rio Bravo region in 1992 and has maintained an annual research season effort every year since its inception. The PfbAP was initially organized as one research project with various research interests per season. In 1995 the program was re-organized as an umbrella research entity with several “independent” research programs under its permit from the Government of Belize.

Among the early seasons of the PfbAP was an effort at understanding the geography of the region. Three well-defined topographic features define the Rio Bravo Conservation and Management Area. The La Lucha Uplands and Rio Bravo Terraces, the Rio Bravo Embayment, and the Booth’s River Upland and Depression are the significant components affecting life and settlement in northwest Belize. Among these features we find a microcosm of the variability found elsewhere in the Maya Lowlands (cf. Dunning et al. 2003). It is the biological and topographic diversity of the RBCMA that provides



Figure 1. Map with location of project area in northwest Belize.

the PfBAP many opportunities to witness and examine the various adaptations by prehistoric and historic communities.

PROJECT ORGANIZATION AND RESEARCH PROGRAMS

The PfBAP serves, as noted above, as an umbrella organization under which several projects operate. Among the various projects are:*

Project (title/name)	Director(s)
Three Rivers Archaeological Project (TRAP)	Valdez
Maax Na Archaeology Project	Shaw & King
Rio Bravo Archaeological Survey	Walling
Say Ka Archaeological Project	Houk & Aylesworth
Dos hombres-La Milpa Transect	Hageman
Hill Bank (historical)	Ng (w/Valdez)

* Other projects have operated during the numerous seasons of the PfBAP. The list above includes only those projects represented by reports in this volume.

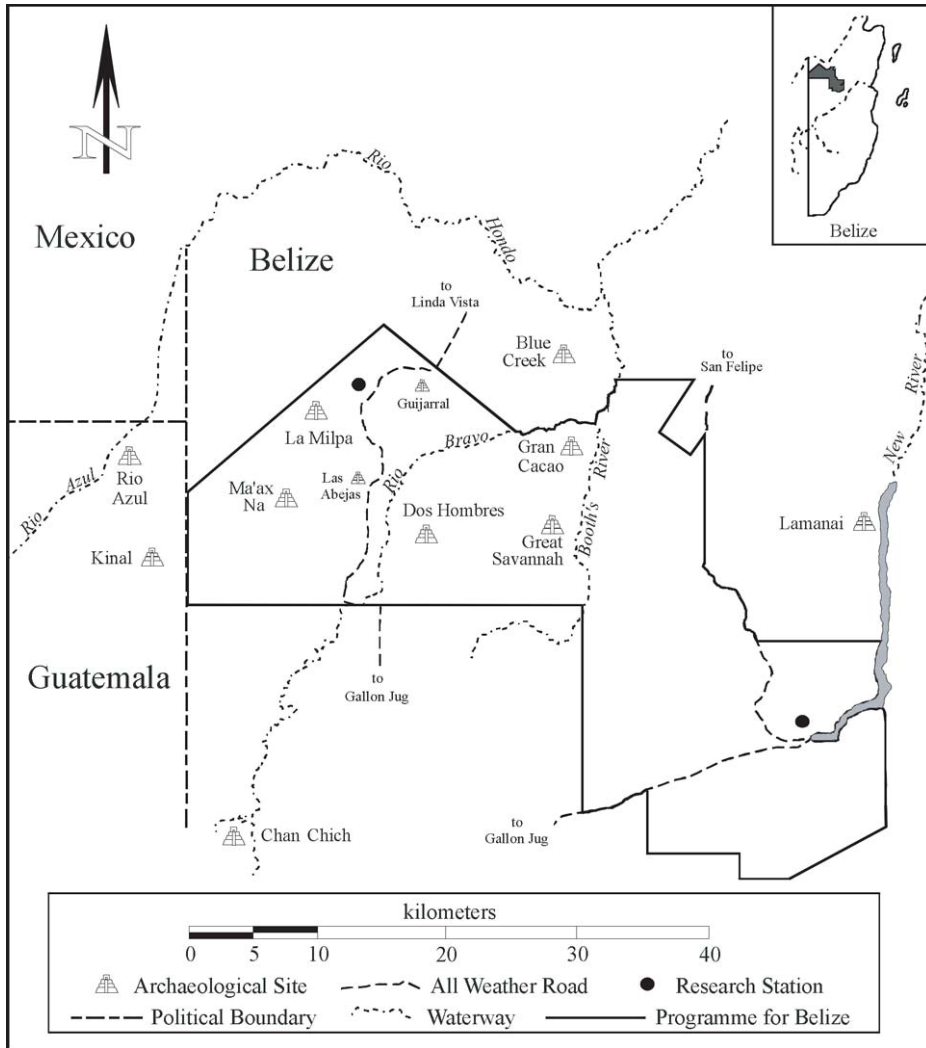


Figure 2. Map of archaeological sites in the PfBAP area.

While each project/program operates as an autonomous unit in terms of revenue procurement and staffing, all operate under the conditions of the permit issued to the PfBAP by the Institute of Archaeology (IoA) in Belize. All programs also share facilities and data as pertaining to the general objectives of the PfBAP as a regional research endeavor.

Previous research seasons have been reported through a variety of venues. Aylesworth's (2004) bibliography compilation for the project's first ten years serves as an excellent example summarizing the productivity of the PfBAP.

NATURE AND SIGNIFICANCE OF THE PROJECT: Research Design and Methods

One function of the PfBAP is to continually refine regional research procedures and methodologies as well evaluate the effectiveness of regional study within the Maya area. The survey methods on the PfB property follows the strategy that was successfully used during the first decade of the project. Mapped roadways, logging paths, and oil exploration transects will be used as the starting points for survey trails and mapping grids. Reconnaissance survey from known points along the Gallon Jug road is also utilized as a strategy. The sampling strategy is an extension of typical site-based procedures, but operates on a larger scale. All levels within the settlement hierarchy and all possible levels of major cultural institutions will be tested.

The relevance of the archaeological work to the PfB (and for both land use and environmental planners), lies in the fact that preservation of cultural and ecological resources is increasingly dependent on ecotourism and renewable resource strategies. Both of these depend, at least initially, on specific identification of a region's resources including cultural components such as archaeological sites. The PfBAP research will also suggest efforts that can be made to mitigate the effects of modern human populations on archaeological sites as the PfB incorporates them into the itinerary for visitors.

The broad research goals of the PfBAP are twofold: 1) to define regional patterns of cultural development and decline within the study area as reflected in the individual histories of cities, towns, and smaller sites, and 2) to use these patterns to provide insight into several major research problems in lowland Maya archaeology.

The regional approach is appropriate for investigating processual and culture-historical questions because it allows us to see Maya urban centers and their supporting infrastructure in a more comprehensive fashion than has traditionally been possible with a single-site focus. The PfBAP clearly has several site focused programs that will feed into the regional study aspect. The regional research can only be accomplished with "single site" research as a component of the investigations.

LONG-TERM OBJECTIVES

A long-term result of the project will be an understanding of the structure, functions, and development of part of a Maya regional state. The focus or perspective, of course, will be from the northwest Belize region. The reconstruction of a Maya regional state in this zone will be compared with developments in other areas, but bearing in mind the many differences in environment and political history.

A cultural-ecological perspective is an important part of our integrated research design and will provide information on ancient agriculture and land modification, both of which will be of interest to modern tropical specialists, agricultural planners, as well as land-use experts in the Maya area and other parts of the Americas.

REVIEW OF THE 2006 SEASON

All studies conducted during the 2006 field season are herein reported by the specific directors and/or field assistants. This introduction is provided as the underlying theoretical interests of the PfbAP and as a cursory overview of the significant archaeological research completed under permit issued to the Programme for Belize Archaeological Project by the Institute of Archaeology in Belmopan, Belize.

Several areas of the RBCMA were investigated archaeologically in the 2006 season. Under the PfbAP umbrella were the investigations of the "Three Rivers Archaeological Project" (TRAP) that included investigations at the Medicinal Trail Site, the Say Ka investigations, as well as the study of the historical settlement of Holotunich.

Walling et al.'s research on the Rio Bravo Escarpment has defined many features not previously investigated by many archaeologists. Hageman et al.'s report reviews the research program that extended the Dos Hombres – La Milpa transect. Archaeobotanical sampling as a significant part of the latter research will add significantly to Maya studies.

The research by Walling and Hageman along with several TRAP investigations detail research at minor sites that are critical to the reconstruction of ancient Maya civilization. At the other end of the scale and equally critical in Maya research is the investigation of the sites of Maax Na and Say Ka. The team of Shaw and King report on the varied research conducted during the 2005 field season at Maax Na. An important component to the Maax Na Project research is the tying together of site center studies with peripheral or distant settlement clusters that are under the possible control of the larger site. Houk et al.'s lead the discussion of excavations and findings from the Say Ka work.

As a research program, the PfbAP is moving in the direction mentioned previously for the regional perspective. Large sites such as Maax Na, Say Ka (as an example of a small site), and the smallest of settlements as represented with the Rio Bravo Project on the escarpment and the Medicinal Trail site are the wide range of ancient Maya structures. It is the describing, defining, and interpretation of these settlements and their potential interactions that will provide a model of a regional state for the northwest Belize zone.

SUMMARY COMMENT

Archaeologists are often reminded that the cultural institutions on which we focus are artificial constructs used for analysis and do not necessarily reflect an internal or "emic" perspective on ancient culture. True emic perspectives are obtained only rarely in archaeology, usually through the use of ancient texts. These, however, tend to have specific

and limited referents. Our use of an external or "etic" perspective in the form of institutional analysis is the best window we have on a holistic understanding of culture. Archaeology studies the material remains of culture, which provide an indirect view of human behaviors that underlie cultural institutions. Unfortunately for the archaeologist, Maya hieroglyphic texts and iconographic symbols focus primarily on calendric, ritualistic, and dynastic information and therefore deal only indirectly with the institutions and secondary components that provide a broad view of culture. It thus remains for the archaeologist to clearly demonstrate the logical connection between recovered field data and the cultural institutions of which they formed a part.

OTHER ACTIVITIES OF THE PFBAP

Several archaeologists of the PFBAP have provided public lectures to visiting groups at the La Milpa Research Station. Some of these groups are student-tourists learning about the forest environment and have been extended the opportunity to learn about Maya archaeology as well. Other groups are students from Orange Walk or Belize City who do not often have the opportunity to visit the forest or Maya ruins.

For the local Mennonite Community we have been fortunate to provide information about our activities. This has been a great opportunity to introduce the extended history of Belize into the local community.

The local workmen and cooks (most from San Felipe) are also introduced to our activities both in the field and in the laboratory. We encourage anyone interested to visit, ask questions, etc. thus, the PFBAP has been quite active in a number of areas (locally) to promote the archaeology of Belize.

ACKNOWLEDGEMENTS

Our thanks go to many people and institutions in Belize and at home that allow for our time in the field in a productive and gainful way. In Belize, the Institute of Archaeology and the many professionals working there are always helpful with sound advice and serve as a stabilizing force. Dr. Jaime Awe, Director of the IoA, Dr. John Morris, Director for Research and Education at the IoA, Brian Woodye and George Thompson, Directors of the Conservation and Management side of the IoA, and the many archaeologists of the IoA including Sherilyne Jones and Joyce Tun have been particularly helpful in the last season. Teresa Batty, formerly of the IoA and now with the Museum of Belize (Belize City) has remained a constant source of encouragement. John Masson with "Old Belize" and Paul Hunt of Belize City remain among the most interested and helpful of Belizean citizens.

The many families of the Blue Creek community have shared much of the interest and curiosity. We are especially grateful to Peter Rempel and the Rempel family as well as the Nuefeldt family. Our camp and field assistants from San Felipe and Orange Walk always provide great company and security. Mirna, Cruz, and Noemi provide the best

meals in Belize! Oscar and Alva always make certain camp is in order, providing peace of mind for staff and students alike.

At home (at least in Austin), various members of The University of Texas share in our vision and provide support that makes everything else possible. The Dean's Office in the College of Liberal Arts, the Department of Anthropology, and our "account administrator," Diane Ruetz (at TARL), are particularly important in the success of the Belize Program. The completion of this volume would not have been possible without the dedication and tireless effort of David Hyde in his assistance to format this report. To him great thanks are extended.

Of course, the many colleagues involved in the PfBAP provide the much needed "sounding board" for all of our research endeavors. The various staff members from the different projects and the corresponding students and volunteers keep us all in line and motivated to continue with this important research. There are many individuals that we should acknowledge, but are unable to in this format.

REFERENCES CITED

Aylesworth, Grant

2004 Bibliography of the Programme for Belize Archaeological Project: 1992-2001. Occasional Papers, Number 3, Mesoamerican Archaeological Research Laboratory. The University of Texas at Austin.

Dunning, Nicholas, John G. Jones, Timothy Beach, and Sheryl Luzzadder-Beach

2003 Physiography, Habitats, and Landscapes of the Three Rivers Region. In *Heterarchy, Political Economy, and the Ancient Maya*, edited by V.L. Scarborough, F. Valdez, and N. Dunning, pp. 14-24. University of Arizona Press, Tucson.

ARCHAEOLOGICAL RESEARCH AT HOLOTUNICH, 2006

Olivia Ng, University of Pennsylvania

INTRODUCTION

The 2006 season of the Hill Bank Historical Archaeology Project focused on the site of Holotunich, a San Pedro Maya village during the 19th century and a British logging camp in the 20th century. Its historical occupation span is roughly 1865 to 1940. Approximately 6 1/2 miles to the southwest of the Programme for Belize Hill Bank field station, Holotunich is located on the west side of Ram Goat Creek, which feeds into the southern end of the New River Lagoon (Figure 1). GPS coordinates for the site are 15209/37126. Archaeological investigations at Holotunich began after PfB rangers reported artifacts coming from the general vicinity. Positive identification of the site was made through comparing the topography with historical accounts found in the Belize Archives, notably the Handbook of 1925, which gave the length of road segments between the site and other known points, such as Hill Bank and Orange Walk, and details from a reconnaissance report made by Lt. M.B. Salmon (1876). Archival evidence suggests that Holotunich was unoccupied between the San Pedro Maya and British phases of occupation. The research goals of the field season were to confirm the identity of the site as Holotunich; answer basic questions about site layout and structures, food and subsistence activities, and personal activities and decorations; determine if the San Pedro Maya and British occupation areas were spatially discrete; and, on a broader scale, to determine the extent and nature of Holotunich's participation in the regional economy.

FIELDWORK

Holotunich is located on a hill about 20 meters high with a creek running through from the northwest direction, and a logging road to the west. Fieldwork ran from March to May 2006. The first three weeks were spent in survey activities, contour mapping, surface collections, and excavating a few test units. Based on the initial results, five operations were then expanded with shallow, extensive excavations designed to expose structures and activity areas (Figure 2). Activities are described below by operation.

Operation 1

Operation 1, on the southern half of the site, was chosen for its dense concentration of artifact scatter on the slope and on top of the hill, and large clear area which could have been a result of compaction through human activity. Sixteen subops (suboperations or units), generally 2 x 2 meter units, were opened for surface collection and excavation. The top of the slope at Op 1 is a generally clear space with artifact scatter on the surface, including glass bottles, lamp fragments, barrel hoops, and metal logging equipment. To the north at this flat open spot is a series of raised, white compacted surfaces perforated by holes. At a preliminary stage, it was hypothesized that the whitish surface was decayed marl, but excavations showed that these humps are naturally formed.

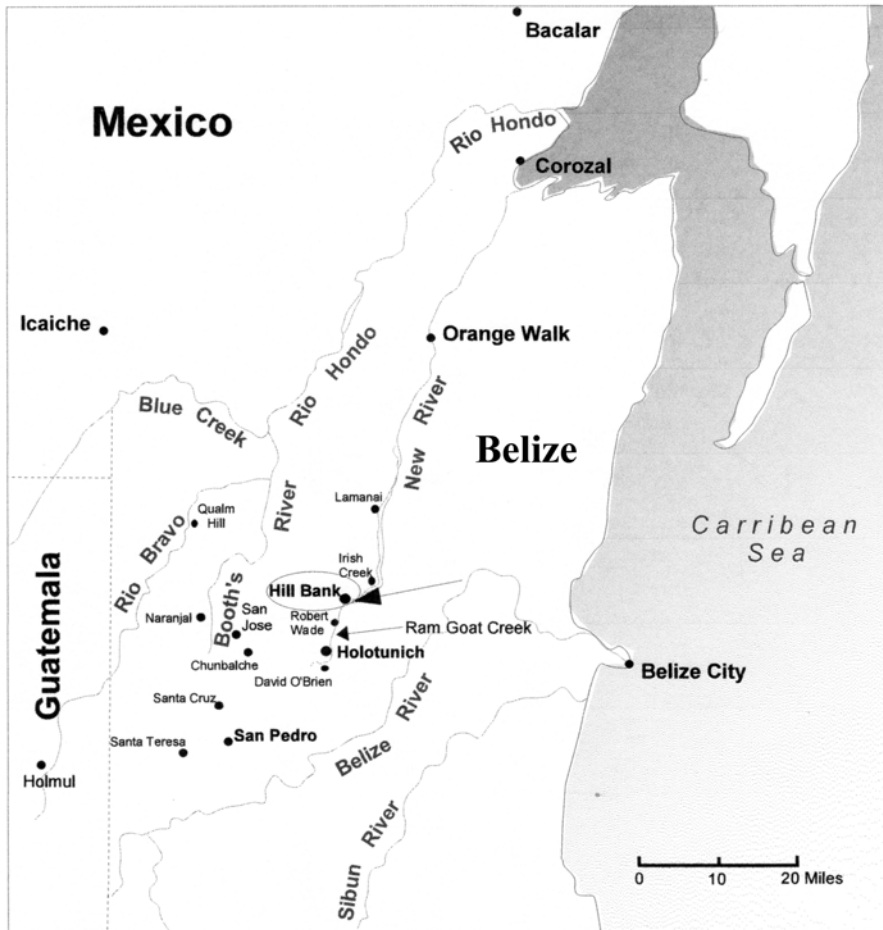


Figure 1. Map showing location of Hill Bank and surrounding area.

Operation 2

Subop A is a 1 x 1 m unit in the creek bed for the purpose of establishing the depositional history. Since the artifacts are washing down the slope, it was hypothesized that the occupational history of the site could be reflected in deposits in the creek bed. Subop A went down about 120 cm from the surface, and the results showed a strong historic presence with minimal prehistoric activity.

Operation 3

Operation 3 is located in the central area of the site. A surface collection was placed there to investigate the heavy artifact scatter, which appear to have been trapped by a series of

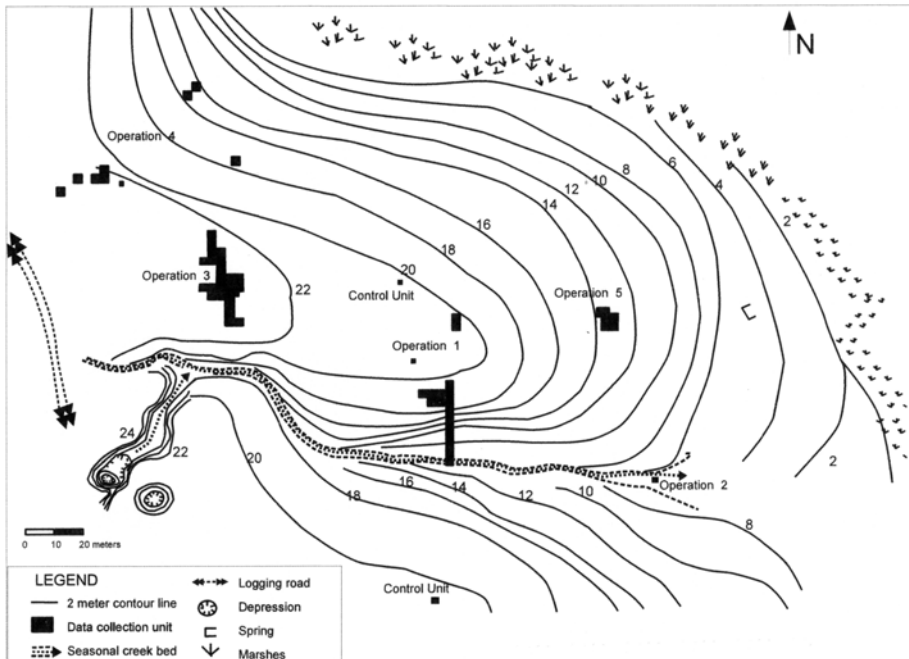


Figure 2. Map of data collection areas.

limestone outcroppings perpendicular to the slope that acted as terraces. It is possible that the natural outcroppings were augmented.

Subops A-W were laid out as contiguous 2 x 2 m units. Excavations revealed a structure with a cobble platform, what appears to be remnants of a walkway, and a much larger structure. A large quantity of nails was found at the smaller structure. There were not as many nails at the larger one, but much more bone. Maya and British occupational layers were thin and have been difficult to distinguish from each other, pending the results of more detailed laboratory analysis. However, these structures may be of Maya construction, because there were similar structures reported by the San Pedro Maya project (Yaeger et al 2005). Subops H and I covered a circular depression. There is evidence of some burning, with charcoal and carbonized plant material, but very little bone. At the bottom of the pit were whole bottles, metal containers, and copper wire fragments.

Operation 4

Op 4 further explored the northwestern portion of the site, where there was a rectangular mound about 30 cm high. Subops A-H subsequently revealed that mound-like shape was

a result of bedrock outcropping. The outcroppings had natural depressions, which trapped many artifacts as they moved down the gradual slope. Subops I and J were laid to investigate large pieces of metal equipment to the northeast. Subop I consisted of a large metal hoop lying on the ground that turned out to be a cast iron wheel, presumably for a cart. Subop J was two long metal objects that proved to be cast iron axles for a cart.

Operation 5

Operation 5 sampled the eastern section of the site. Unlike Ops 1, 3, and 4, Op 5 is halfway up the slope, about the 15 m contour line. There is an abundance of artifacts, that appear older than at other parts of the site, and some were melted. Either the artifacts rolled down to this spot and were trapped by topographical features, or they were primary deposits. Two structures have been uncovered at Op 5, at different levels. There is a rectangular structure with rocks forming a double wall line, oriented NW. Below this structure is a circular structure with a concentration of ash on the floor surface, which is where the burned and melted artifacts were found. Both structures have been disturbed by the roots of a nearby cohune palm.

SUMMARY

Excavations confirmed that this site is Holotunich. Five buildings were uncovered, all delineated by rock lines. From preliminary investigations these appear to be Maya structures. The structures are generally 10-15 cm below the surface and there appears to be mixing of Maya and British artifacts, due to root activity and the temporal proximity of both spans of occupation. Perhaps the British construction methods left fewer traces. Because the buildings tended to be so ephemeral, they were not removed or penetrated by additional excavations. Instead, they were documented once they were exposed and then covered up again at the end of season with backfill. Broader questions about the site will be answered through laboratory analysis of the artifacts.

Four control units placed throughout the site show that in most areas some artifacts will be encountered, even if there is no surface artifact scatter. Control units tended to run 50-60 cm from surface to bedrock, and contained mostly Maya sherds, shells, and some historic period artifacts. Area across the creek and other side of logging road were briefly reconnoitered, but not investigated. It is possible that artifacts and features are on the other side, but none were observed.

REFERENCES CITED

- Metzgen, Monrad S. and Henry E.C. Cain
1925 The Handbook of British Honduras. Waterlow and Sons, London.
- Salmon, M.B.
1976 Abstract of Reconnaissance made by Lt. M.B. Salmon of 2nd W.I. Regiment of the country and roads between the Boom, Old River, and Hill

Bank, British Honduras. Unpublished Manuscript. Archives of Belize, Record Volume 114. Belmopan, Belize.

Yaeger, Jason, Minette C. Church, Jennifer Dornan and Richard M. Leventhal
2005 Investigating Historic Households: The 2003 Season of the San Pedro Maya Project, in *Research Reports in Belizean Archaeology, Vol. 2. Archaeological Investigations in the Eastern Maya Lowlands: Papers of the 2004 Belize Archaeology Symposium*, edited by Jaime Awe, John Morris, and Sherilyne Jones, pp. 257-267. Institute of Archaeology, National Institute of Culture and History, Belmopan, Belize.

OVERVIEW OF ACTIVITIES AT THE MEDICINAL TRAIL SITE FOR THE 2006 SEASON

David M. Hyde, The University of Texas at Austin
Fred Valdez, Jr., The University of Texas at Austin

INTRODUCTION

The Medicinal Trail site refers to a dispersed hinterland community between the Rio Bravo Escarpment and the La Lucha Uplands consisting of a few formal courtyard groups, numerous informal clusters of mounds and multiple landscape modifications such as terraces, depressions, and linear features. The Medicinal Trail site is located between 6 and 8 km east of the major site of La Milpa and extends from the Turtle Pond at the west and the escarpment on the east. The site name is derived from Programme for Belize's tourist attraction called the "Medicinal Trail." The first excavations at the site were conducted in 2002 by Laura Ferries (2002) and Danica Farnand (2002) and consisted of two separate studies that investigated mounds (Operation 5) and terraces (Operation 6) that cross the trail from which the site gets its name. In the summer of 2004 Jennifer Chmilar (2005a, 2005b) excavated the Turtle Pond (Operation 8), a seasonally inundated depression at the base of a slope on the western edge of the site. In 2004 excavations also began at Group A (Operation 7), a formal courtyard group (Hyde 2005, Hyde et al 2006). Additionally work was undertaken at the site in 2006 by George Rodriguez, Jeff Brewer (Operation 10), and Jason Whitaker (Operation 11) (see this volume for summary reports of their individual activities at the site). The focus of this report is on the general excavations at Group A as well as some reconnaissance and mapping to the east.

Group A was located atop a ridge by members of the Programme for Belize Archaeological Project in early 2004, with excavations beginning shortly thereafter and continuing in 2005 and 2006 (Figure 1). The group consists of six mounds distributed around three contiguous courtyards aligned on a north-south axis and one additional mound to the north with numerous associated landscape modifications on the slopes leading away from it. At least four depressions have been identified immediately flanking Group A on three sides, and there are many terraces, presumably related to agriculture, extending across the slopes moving away from the site center towards the Turtle Pond to the west, and towards the escarpment to the east.

Excavations to the west and east of the northern and central courtyards as well as in the southern courtyard provide evidence for landscape modification. In these areas, sediment was stripped to bedrock, which slopes downward from north to south, and fill, or in some cases re-deposited midden material, was laid on this exposed surface artificially leveling these areas. Overlaying this is a compact prepared surface that converged with the group's structures. The only Middle Preclassic ceramic sherd recovered so far comes



Figure 1. Map of Medicinal Trail site, Groups A and B.

from this context, suggesting this early date for initial occupation of Group A and that these modifications may have occurred early.

NORTHERN COURTYARD

Excavation of Structure A-1 in the 2004 and 2005 seasons revealed the external and internal dimensions, the doorway, and a bench (Figure 2). This season's excavations were conducted just inside the doorway of the building in an effort to understand the chronological history of the structure.

Excavations inside Structure A-1 revealed that the plaster floor was well preserved and thicker at the doorway with an additional row of stones below the plaster floor just inside the doorway. At least one resurfacing appears to have occurred for this floor as determined from the presence of a lens of sediment that separated two surfaces. Below this Late Classic floor was a layer of small cobble fill then another plaster floor. Below the second floor was another layer of small cobble fill followed by large cobble fill. After the small and large cobble fill was another plaster floor. Although we encountered multiple plaster floors in these excavations, there was no way to determine if they were from earlier structures or simply extensions of plaza floors that the Late Classic structure.

In the northwest corner of the Northern Courtyard, between Structures A-1 and A-2, is an ancillary structure. Built on a platform that extends off of Structure A-1, the ancillary structure was more fully defined in 2006 and consists of a single room with a doorway that opens into the courtyard. The architecture consists of a low stone wall along the perimeter and likely had perishable walls above the masonry. It is also likely that the structure was topped with a thatched roof. The ancillary structure appears to have been a late addition to the courtyard based on excavations on the to the west side of Structure 2. Initially the low wall that extends north off of Structure 1 was free standing and ended slightly west of Structure 2 and was not attached. At a later date it was attached to Structure 2 and then filled in to the east to create a platform for the construction of the ancillary structure.

SOUTHERN COURTYARD

Excavations began on Structure A-6 in 2005, however, additional excavations were required to better define the structure (Figure 3). Structure A-6 is a masonry construction 8 m long by 4 m wide consisting of cut stones and rests on a platform that extends between 30 cm (in the south) and 50 cm (in the north) in front of the structure. The walls of Structure A-6 are 80 cm thick and cut stones with beveled edges were recovered inside the building suggesting this building may have been vaulted. The doorway is 1.5 m wide and offset to the left, and there is a single plastered room inside. No internal walls were uncovered to suggest separate rooms. It is not clear what the function of this building was or why the doorway is not centered. The front of the building to the right of the doorway was exposed and there is no indication that there had been a second doorway that may

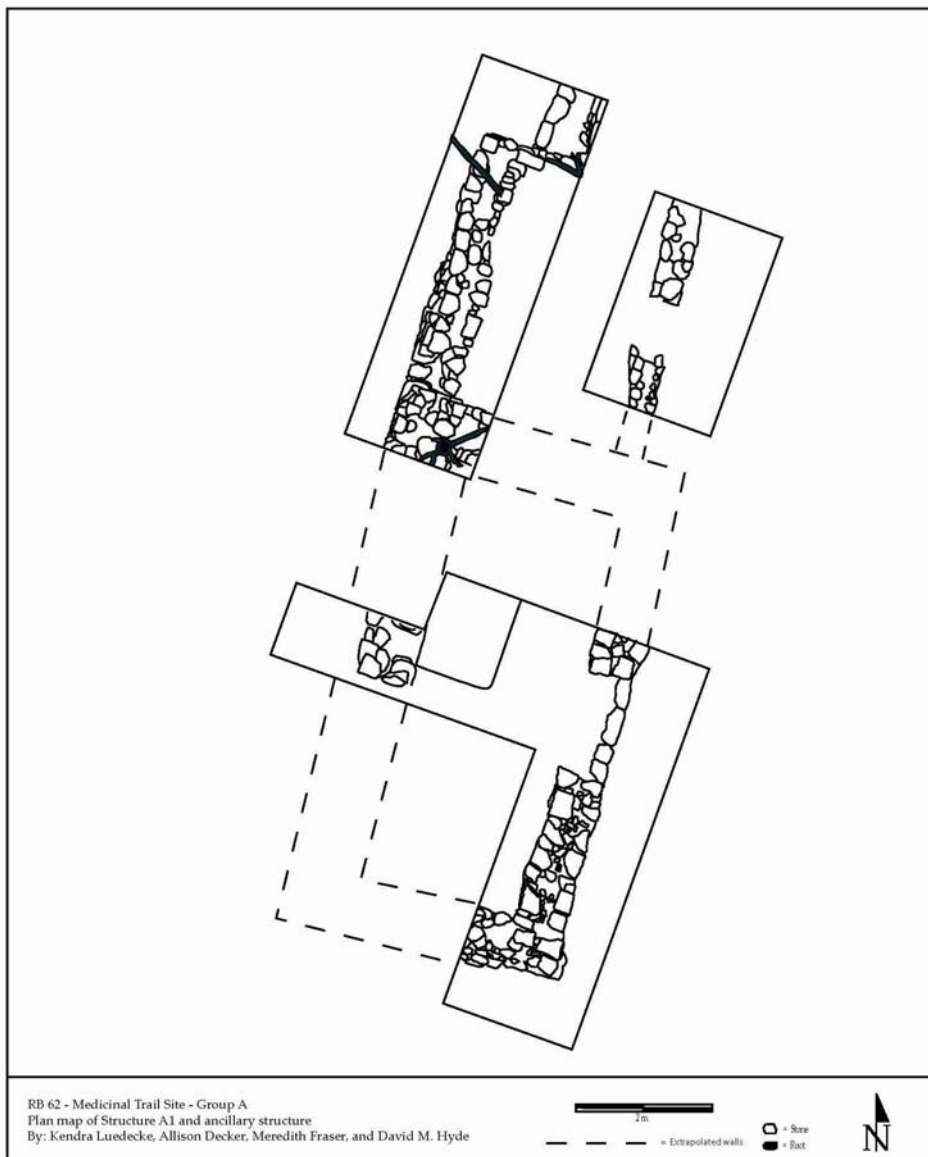


Figure 2. Plan map of Structure A-1 and ancillary structure.

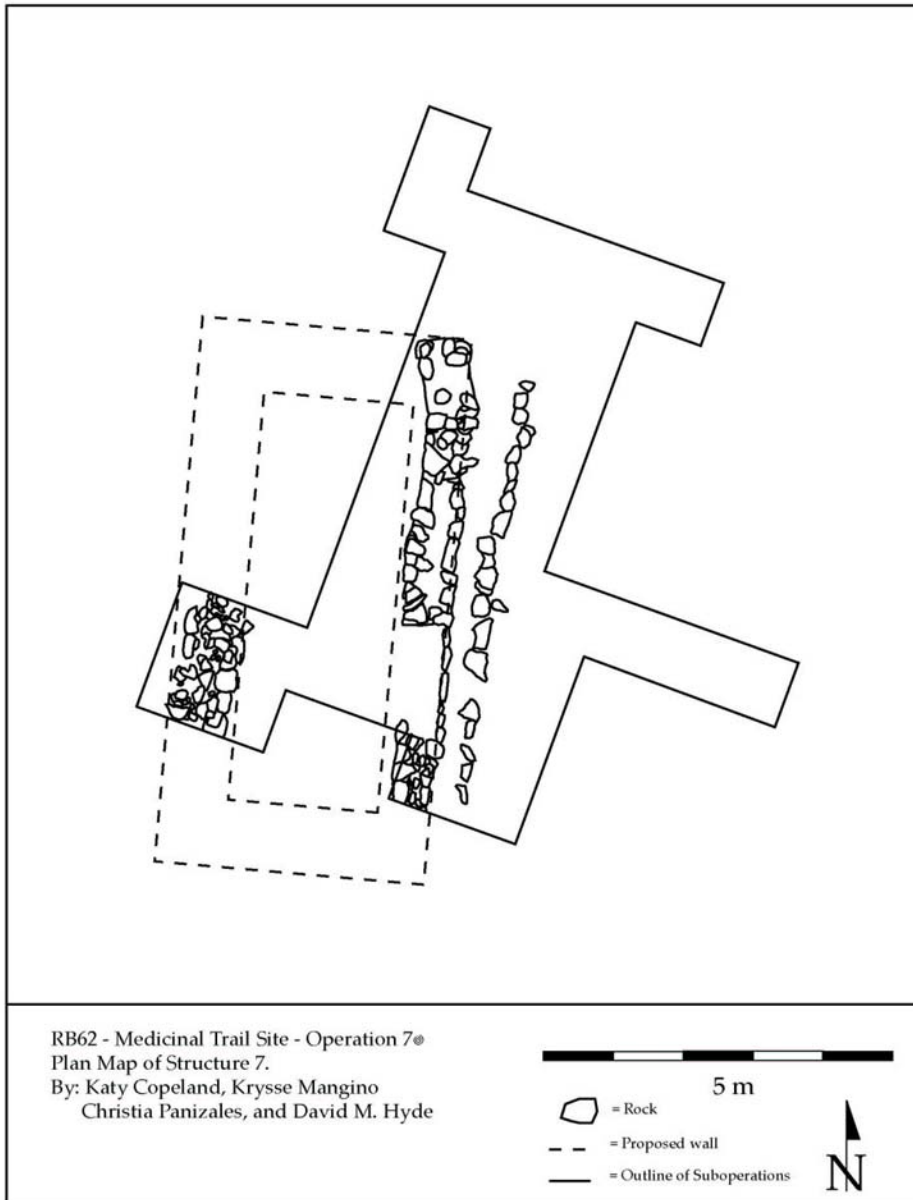


Figure 3. Plan map of Structure A-6.

have been filled in later. The structure is over an earlier platform that is oriented slightly differently, extending 30 cm out in front of the doorway and more than 50 cm by the time it reaches the northeast corner of the structure.

No other structures have been found in association with Structure A-6 and the courtyard space in front of it is artificially created much like the areas to the west and east of the Northern Courtyard. Moreover, Structure A-6 is cut off from the rest of Group A by a large vertical wall. Excavations in 2004 showed that there was no staircase that led from the much lower Southern Courtyard to the artificially elevated Middle Courtyard, access to which was restricted to the north side.

MAPPING AND SURVEY

Produced this season too was a map of Group B located approximately 200 m to the northeast (Figure 1). This group consists of one formal courtyard built on an artificial platform and four more structures to the south, three of which are organized around a courtyard, but not on a platform. East of the less formal courtyard cluster are numerous depressions, linear berms, and what appear to be canal like features that may have functioned to direct water to and between the basins.

The formal courtyard consists of four mounds, situated in the cardinal directions with the largest structure on the east side. This mound is pyramidal in shape and has at least one major looter's trenches penetrating it located front and center. On the backside near the top of the mound there is some disturbance that could be a looter's trench or it could be the result of tree fall. The mound on the south side of the courtyard is long and from surface indications appears to be supporting two structures. The west and north mounds are likely residential. In the courtyard there are numerous holes and a depression approximately two meters in diameter. Most of the holes appear to be from dead *escoba* palm trees while the depression is likely the result of collapsed limestone bedrock although this is just speculation.

In the spring of 2006 some reconnaissance was conducted to the east of Group A to get a sense of the settlement density, extent of landscape modification, and distance to the escarpment. A line was cut east from behind Structure A-4, the shrine-like structure in the middle courtyard, approximately 1.25 km before reaching the escarpment edge. This is in sharp contrast to Group B where the escarpment was only 100 m or less east of the temple structure. Along the Group A transect numerous features were encountered including small modest courtyard groups, informal clusters of mounds, and linear features that run both perpendicular and parallel to the slope, many of which terminate at depressions suggesting both agricultural, erosion control, and water management functions. In some cases terraces were identified that were in excess of 50 m in length, and many were "stacked" terraces. That is to say that at the base of one terrace was another one, and that the base of that one was another. One common relationship that was

identified from the reconnaissance was the presence of a mound, or in some cases multiple mounds, on the edge of a depression.

SUMMARY

Much work was accomplished at the Medicinal Trail site in the 2006 season. Excavations in and around the structures in the Northern and Southern Courtyards have led to additional questions for future work. Excavations into Structure A-1 have revealed a series of plaster surfaces that appear to correspond to plaster floors uncovered in the courtyard out in front to the structure making it difficult to know they reflect earlier structures or extensions of the plaza. While the construction of Structure A6 is better understood the function is still a mystery of this structure that is cutoff from the rest of Group A.

Most interesting perhaps of all the work undertaken in the 2006 season was the reconnaissance to the east of Group A. A densely populated and extensively modified landscape was revealed indicating that the inhabitants of the Medicinal Trail site were agricultural specialists with those residing in the two largest groups, Groups A and B possibly controlling the resource and attaining some level of economic wealth reflected in their more elaborate and substantial dwellings. To date no testing or excavation has been conducted at Group B or any of the other features encountered towards the escarpment. In coming seasons this and a map of the transect area will be made to better understand the relationships and history of the mounds and features that surround them.

REFERENCES CITED

Chmilar, Jennifer

2005a *Ancient Maya Water Management: Archaeological Investigations at Turtle Pond, Northwestern Belize*. Master's thesis on file with the Department of Anthropology, University of Cincinnati.

2005b *Water Management at the Turtle Pond: A Preliminary Report of Excavations at RB62, Op 8*. In *Programme for Belize Archaeological Project: Report of Activities from the 2004 Field Season*, edited by Fred Valdez, Jr., pp. 27-34. Occasional Papers, Number 4, Mesoamerican Archaeological Research Laboratory. The University of Texas at Austin.

Farnand, Danica M.

2002 *Agricultural Formation Histories of Prehistoric Terraces of the Medicinal Trail Site, Northwestern Belize*. M.A. thesis, Department of Anthropology, Division of Graduate Studies and Research of The University of Cincinnati.

Ferries, Laura C.

2002 *Site Formation and Occupation History of the Medicinal Trail House Mound Group at the Programme for Belize Archaeological Project, Belize.* M.A. thesis, Department of Anthropology, Division of Research and Advanced Studies of The University of Cincinnati.

Hyde, David M.

2005 Excavations at the Medicinal Trail Site, Operation 7: Report of the 2004 Season. In *Programme for Belize Archaeological Project: Report of Activities from the 2004 Field Season*, edited by Fred Valdez, Jr., pp. 7-14. Occasional Papers, Number 4, Mesoamerican Archaeological Research Laboratory. The University of Texas at Austin.

Hyde, David M., Shelly Fischbeck, and Rissa Trachman

2006 Report of Excavations at the Medicinal Trail Site for the 2005 Season. In *Programme for Belize Archaeological Project: Report of Activities from the 2005 Field Season*, edited by Fred Valdez, Jr., pp. 7-16. Occasional Papers, Number 6, Mesoamerican Archaeological Research Laboratory. The University of Texas at Austin.

REPORT ON INVESTIGATIONS OF THE PRECLASSIC SETTLEMENT AT GROUP A OF THE MEDICINAL TRAIL SITE

David M. Hyde, The University of Texas at Austin
Kirsten Atwood, The University of Texas at Austin

INTRODUCTION

The Medicinal Trail site is a dispersed hinterland community consisting of multiple courtyard groups and landscape features located approximately 6 to 8 km east of the major site of La Milpa between the Rio Bravo Escarpment and the La Lucha Uplands. The first excavations at the site were conducted in 2002 by Laura Ferries (2002) and Danica Farnand (2002) and consisted of two separate studies that investigated mounds and terraces that cross the Programme for Belize's tourist "Medicinal Trail." In 2004 Jennifer Chmilar (2005a, 2005b) excavated the Turtle Pond, a seasonally inundated depression at the base of a slope on the western edge of the site. Beginning in 2004 David Hyde began excavations at Group A, one of two large formal courtyards groups so far identified at the site (Hyde 2005, Hyde et al 2005). In 2006 additional work was undertaken at Group A by George Rodriguez (this volume) and Jeff Brewer (this volume), while Jason Whitaker (this volume) worked on an isolated nearby, slightly to the south. This report will summarize the Late Preclassic occupation at the Northern Courtyard of Group A based on excavations through the 2006 field season.

NORTHERN COURTYARD

The Northern Courtyard of Group A is defined by three mounds situated on the west, north, and east sides around a shared space. The south side of the courtyard is demarcated by the Middle Courtyard. Late Preclassic remains have been recorded in nearly all areas of Group A, however, in the Northern Courtyard (Figure 1) there are two Late Preclassic construction phases, the later one encountered at a depth of just 30 to 40 cm below surface, and consists of a plaster floor (Floor 2) approximately 8 cm thick. This floor covered an area of at least 20 square meters in the center of the courtyard and extended underneath structures A-1 and A-3. Overall preservation of this plaster floor was very good; with one notable exception being where it is extended over an earlier round platform to be discussed below. One intentional intrusion was made through the floor into which was placed a cache consisting of two Late Preclassic Sierra Red nested vessels (which turned out to be directly over the northwest corner of a square platform). Upon removal of Floor 2 we encountered three more caches, two platforms, one round and the other square, both of which were resting on yet another plaster floor (Floor 3) (Figure 2). The remainder of this report will describe in more detail the findings just outlined with an emphasis on the excavations from the 2006 season.

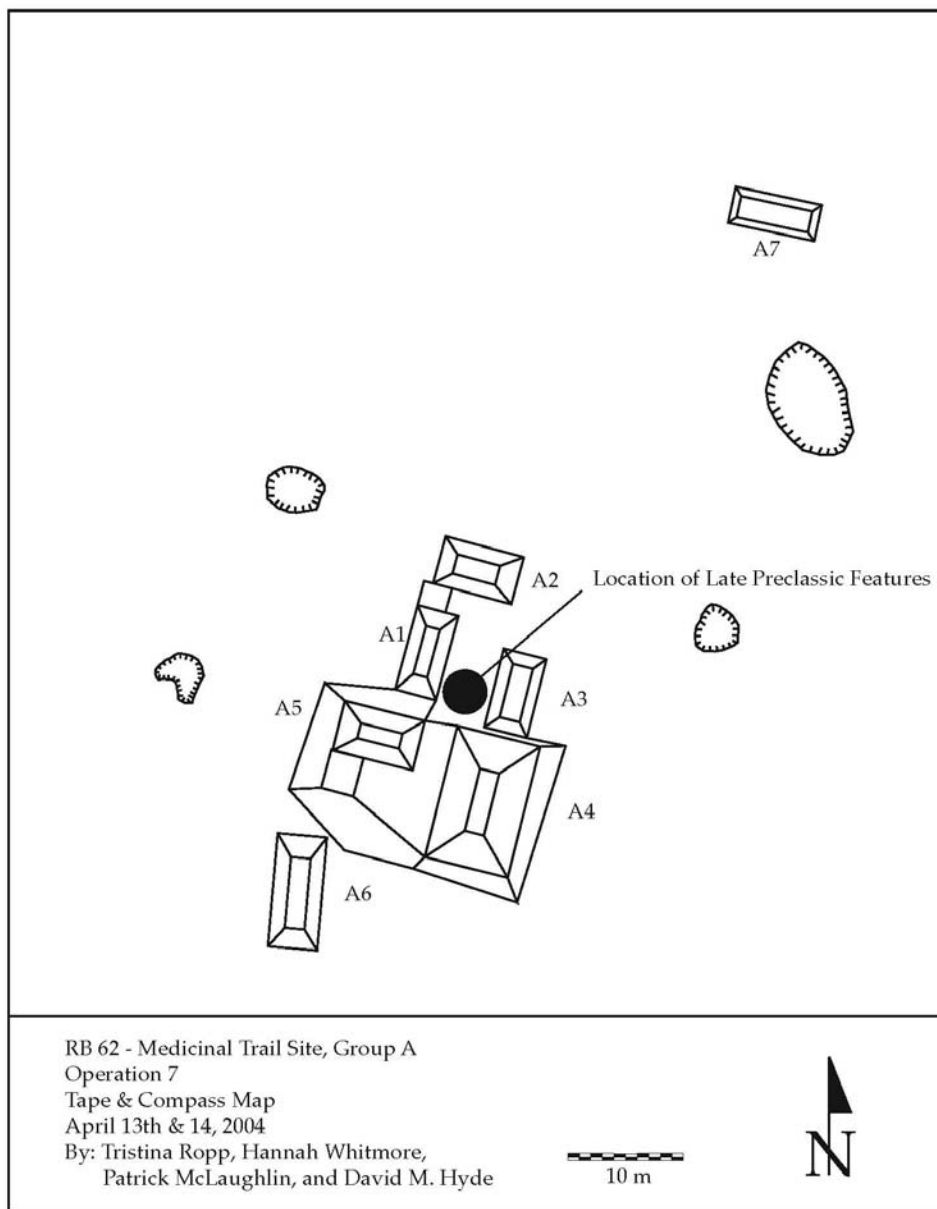


Figure 1. Map of Group A indicating location of Late Preclassic features.

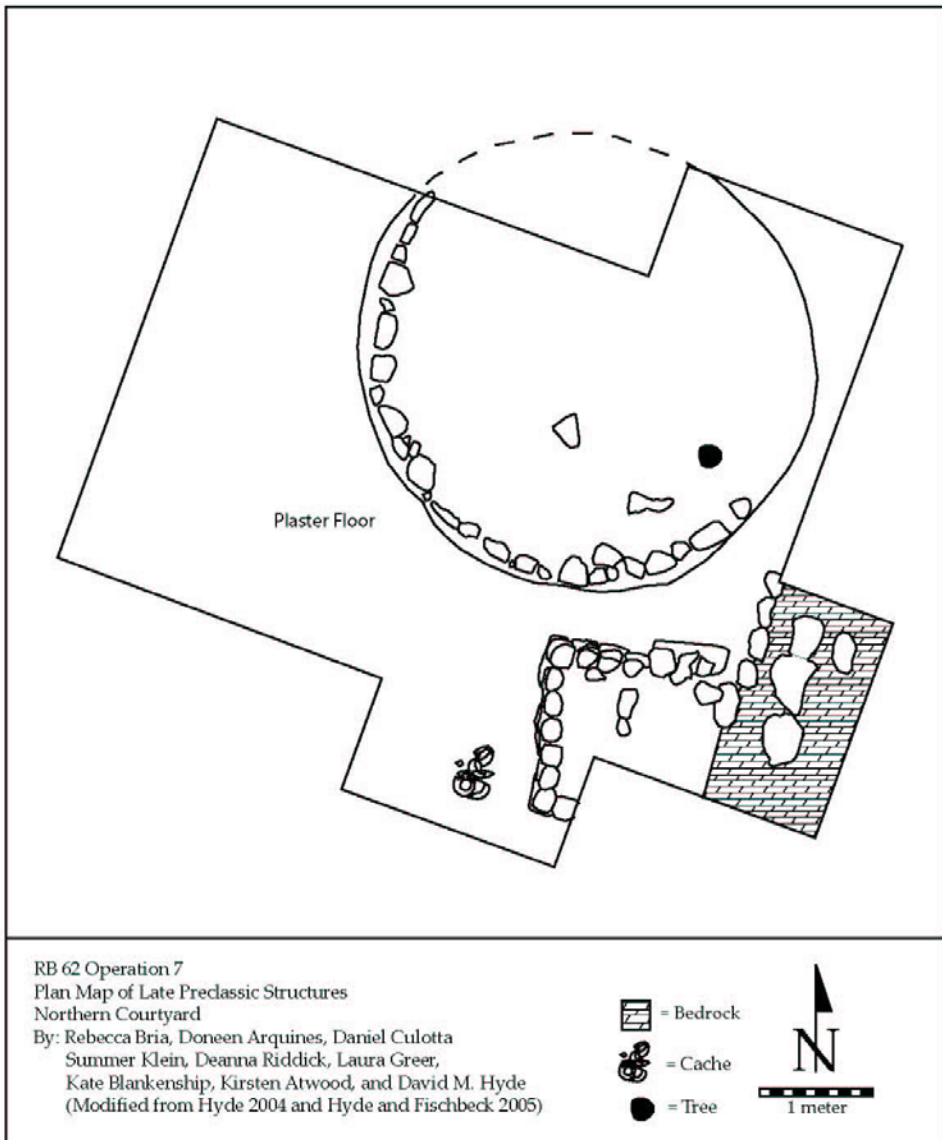


Figure 2. Plan map of Late Preclassic structures and caches.

DESCRIPTION OF THE PLATFORMS

Located in the south center portion of the Northern Courtyard, the square platform is slightly less than 1.5 meters to a side, approximately 50 cm tall and resting on Floor 3, which dates to the Late Preclassic (Figure 3). On the western and southern sides of the

platform there are remnants of plaster retaining red pigment indicating that the platform and likely the floor were painted red. In some places the plaster floor rolls up partially over the base of the square platform. After finding the northwest corner of this feature we encountered an alignment of stones down the middle of the square platform. Based on this alignment and an irregularity in the construction along the northern edge of the platform it is now believed that the platform was originally constructed as a rectangle with the long axis extending north-south. The western half is made from flat limestone blocks approximately 20 cm in length and 10-15 cm thick, stacked three high. Conversely, the eastern half appears to be made from larger limestone blocks and only two courses tall. The lower course is a single block about 70 cm long and about 40 cm tall on top of which is a course of smaller stones. Additionally, the eastern half is offset to the north by 10-15 cm relative to the western half. Excavations into the eastern half of the platform uncovered only construction fill.



Figure 3. Photograph of Late Preclassic square platform with round structure in foreground.

Located approximately 50 cm north of the square/rectangular structure and resting on the same plaster floor, is a Late Preclassic round structure, uncovered initially in 2004 and was investigated again in 2005 and 2006 (Figure 4). It is approximately 3.5 m in diameter, and 40 cm tall, consisting of three to four courses of cut stone masonry that taper slightly inward as it moves from bottom to top. No postholes, a plaster surface, or

masonry architecture was found on top suggesting that the platform was exposed, similar to those found at Cahal Pech (Aimers et al 2000), Xunantunich (Yaeger 1996), and El Pilar (Ford et al. 1995). Additionally, there is some indication that on the east side of the platform there were two stairs, similar to those at the Zotz Group of Cahal Pech (Aimers et al 2000). The plaster floor that covered the surface of the round structure was decayed in some places and did not uniformly extend over the top of the platform. What was preserved was exposed, documented, and then excavated to the level of the top of the platform exposing more completely the stones along the top edge of the circular platform, allowing us to create a more accurate and complete plan map of the platform. Excavations inside the platform revealed nearly 2 m of construction fill from the top of the platform down to bedrock. Under the fill, resting on bedrock, were at least two ceramic vessels and a secondary burial, the skeletal remains were covered with *sascab* effectively embedding them into the bedrock and making recovery exceedingly difficult (see Grazioso, this volume).



Figure 4. Photograph of the Late Preclassic round structure.

East of the round and square platforms the Late Preclassic plaster floor on which they rest abruptly ends, the result of it having been removed in prehistoric times or never existing. Along the plaster edge is a row of stones that extends north towards the round structure. To the east of the plaster floor edge is an alignment of large, flat-topped stones rectangular or oval in shape approximately 50 cm in length on top of which was a flexed

burial partially excavated in 2005. Below the flat-topped stones is bedrock, a depth of approximately 20 cm below the plaster floor. By contrast, from the same plaster floor to the depth of the burial inside the round structure is a distance of approximately 1.5 m. Either the bedrock takes a significant dip in the space of a couple of meters – from the stone alignment northeast of the square platform to the location of the burial – or the bedrock may have been modified at some point during the placement of the burial or the construction of the platform.

CACHES

A total of four caches have been recovered at Group A, all of which are associated with the square/rectangular platform and each consisting of two Late Preclassic Sierra Red ceramics vessels. Cache 1 was found in 2004 and consisted of two Sierra Red vessels placed in an intrusion into Floor 2. These vessels were nested, one resting inside the other and appear to be an offering made after the plaster floor was already in place, perhaps a termination ritual before the burying of the floor or abandoning the group in the Late Preclassic.

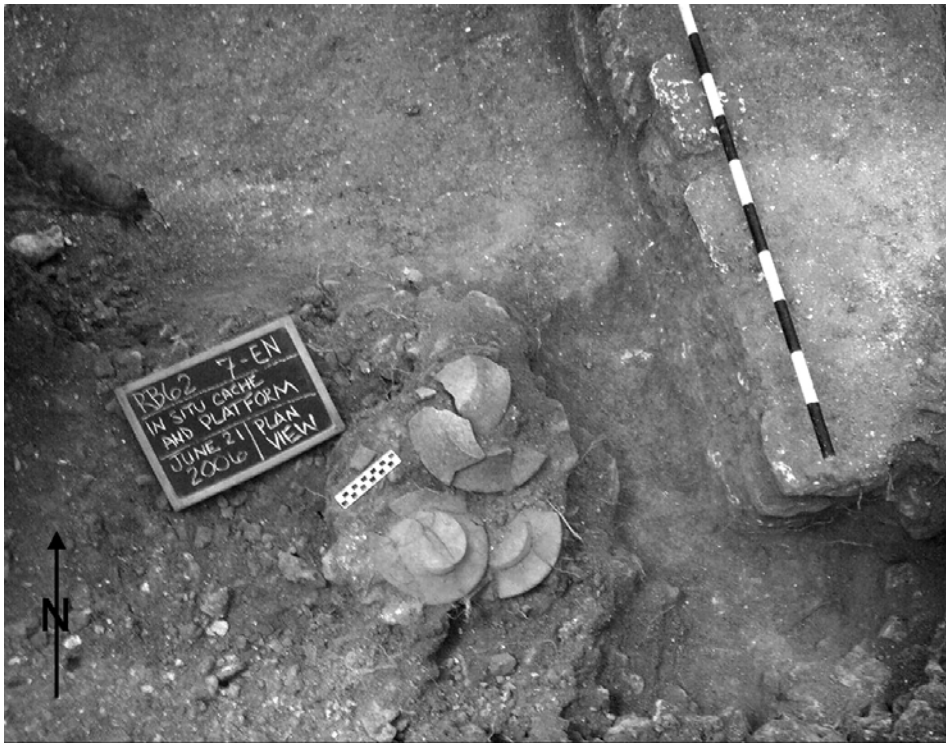


Figure 5. Photo of Caches 2, 3, and 4 *in situ* next to square platform.

Three caches (Caches 2, 3, and 4), each consisting of lip-to-lip Sierra Red vessels, were discovered to the west of the platform in the dry cobble fill between Floors 2 and 3 (Figure 5). The caches were placed in a triangular arrangement, each slightly overlapping one another (Figure 6). All six of the vessels were broken, most likely either in place as part of a termination ritual or due to taphonomic reasons. Each of the three lip-to-lip caches were excavated separately, and brought back to the laboratory where the sediments inside were bagged and exported for analysis. To date no artifacts have been recovered from inside the vessels although analysis of the contents is ongoing. It appears that these caches were placed in the fill as a termination offering when the platform and the round structure were being intentionally buried and plastered over with Floor 2. However, the floor was poorly preserved due in part to a nearby tree root so it is possible the plaster floor was cut through to allow placement of the caches, and re-plastered.



Figure 6. Close up of Caches 2, 3, and 4 *in situ*.

DISCUSSION AND CONCLUSION

Round structures are known from numerous sites in the Maya Lowlands, including Belize (Aimers, Powis and awe 2000; Hendon 2000). What function they served is still of considerable debate. Some possible functions that have been attributed to them include use as observatories (Aveni 1980), sweatbaths (Finsten 1996; Satterthwaite 1952), simple burial mounds (Pollack 1936), and places of deity worship (Pollack 1936) although most agree these platforms were ceremonial to some extent (Aimers et al 2000; Hendon 2000).

Scholars also debate the meaning of the location of round structures within the site relative to residential structures. Excavations at Cahal Pech by Aimers et al. (2000) have led them to argue that round structures are spatially separated from residential buildings, whereas Hendon (2000) argues that in many cases these structures are integral parts of the residential precincts, in some cases being constructed in the middle of a residential patio (Hammond et al. 1991). To date little is known about the organization of this occupation phase beyond what is described above. Other than the two platform features described above no other structures, in particular residential structures, have been defined to allow for any comment regarding spatial relationships like those described by Aimers et al. and Hendon.

Among the earliest inhabitants at the Medicinal Trail site were likely those that resided at Group A and the location was likely chosen based on the agricultural potential of the surrounding slopes. Although the soils have not been tested for this, the presence of large numbers of terraces, depressions (likely for water storage), linear berms, and other landscape modifications are suggestive of this potential. The early occupants of Group A appear to represent an important early household in the Medicinal Trail community based on the presence of the Late Preclassic ceremonial round structure located in the middle of the Northern Courtyard. Excavations inside the round structure uncovered the remains of a secondary burial, likely an important lineage figure that was brought to Group A when it was first settled and may have functioned as a way to legitimize their claim to and control the land (McAnany 1995). The platform next to the round structure with its four associated caches has not yet been excavated, but likely too contains a burial of an important lineage figurehead. The importance of this feature is indicated by the placement of three caches next to the platform at the time it was buried with fill and covered with a later plaster floor as well as the later placement of a cache once the plaster floor was in place. It should be pointed out that Cache 1 is placed through the floor directly over the northwest corner of the buried platform even though there were no surface indications, to discern where the platform was located under the floor, at least present at the time of excavations.

We suspect that as the population increased in the area these early settlers were able to parlay control over the land into economic wealth and possibly some degree of social power (McAnany 1995). The round structure, with the possible ancestor buried inside, likely was used for local ceremonial activities for the Medicinal Trail community. At

some point however, also in the Late Preclassic, these features were buried and the space becomes reorganized so that the area becomes an open courtyard.

Reasons for the burial of these features are not currently known however it is possible that there was a power shift within the household or lineage. Approximately 200 m to the northeast is Group B, another formal courtyard group consisting of a raised platform on which four mounds are located including a pyramidal structure on the east side of the plaza. Unlike Group A, the courtyard space in Group B is large and could have facilitated a large number of people for community based ceremonial activities. The residents of both groups are likely related given their proximity to each other. If so, then it is possible that the power base within the lineage shifted to Group B at some point and as a result the organization of space in the Northern Courtyard was transformed from a ceremonial precinct to perhaps a more strictly residential one.

Excavations at Group A and specifically the Late Preclassic occupation of the Northern Courtyard are ongoing. To date no work has been undertaken at Group B, therefore, the interpretations outlined above are tentative. Work for 2007 includes better defining the square platform and investigating the earlier Late Preclassic occupation further.

REFERENCES CITED

- Aimers, James J., Terry G. Powis, and Jaime J. Awe
2000 Preclassic Round Structures of the Upper Belize River Valley. *Latin American Antiquity* 11:71-86.
- Aveni, Anthony
1980 *Skywatchers of Ancient México*. University of Texas Press, Austin.
- Chmilar, Jennifer
2005a *Ancient Maya Water Management: Archaeological Investigations at Turtle Pond, Northwestern Belize*. Master's thesis on file with the Department of Anthropology, University of Cincinnati.
2005b Water Management at the Turtle Pond: A Preliminary Report of Excavations at RB62, Op 8. In *Programme for Belize Archaeological Project: Report of Activities from the 2004 Field Season*, edited by Fred Valdez, Jr., pp. 27-34. Occasional Papers, Number 4, Mesoamerican Archaeological Research Laboratory. The University of Texas at Austin.
- Farnand, Danica M.
2002 *Agricultural Formation Histories of Prehistoric Terraces of the Medicinal Trail Site, Northwestern Belize*. M.A. thesis, Department of Anthropology, Division of Graduate Studies and Research of The University of Cincinnati.

Ferries, Laura C.

2002 *Site Formation and Occupation History of the Medicinal Trail House Mound Group at the Programme for Belize Archaeological Project, Belize*. M.A. thesis, Department of Anthropology, Division of Research and Advanced Studies of The University of Cincinnati.

Finsten, Laura M.

1996 Circular Architecture and Symbolic Boundries in the Mixtec Sierra, Oaxaca. *Ancient Mesoamerica* 7:19-35.

Ford, Anabel, Clark Wernecke, and Mark Grzybowski

1995 *Archaeology at El Pilar: A Report on the 1995 Field Season*. Mesoamerican Research Center, University of California, Santa Barbara.

Hammond, Norman, Juliette C. Gerhardt, and Sara Donaghey

1991 Stratigraphy and Chronology in the Reconstruction of Preclassic Developments at Cuello. In *Cuello: An Early Maya Community in Belize*, edited by Norman Hammond, pp. 23-69. Cambridge University Press, Cambridge.

Hendon, J. A.

2000 Round Structures, Household Identity, and Public Performance in Preclassic Maya Society. *Latin American Antiquity* 11:299-301.

Hyde, David M.

2005 Excavations at the Medicinal Trail Site, Operation 7: Report of the 2004 Season. In *Programme for Belize Archaeological Project: Report of Activities from the 2004 Field Season*, edited by Fred Valdez, Jr., pp. 7-14. Occasional Papers, Number 4, Mesoamerican Archaeological Research Laboratory. The University of Texas at Austin.

Hyde, David M., Shelly Fischbeck, and Rissa Trachman

2006 Report of Excavations at the Medicinal Trail Site for the 2005 Season. In *Programme for Belize Archaeological Project: Report of Activities from the 2005 Field Season*, edited by Fred Valdez, Jr., pp. 7-16. Occasional Papers, Number 6, Mesoamerican Archaeological Research Laboratory. The University of Texas at Austin.

McAnany, Patricia A.

1995 *Living with the Ancestors: Kinship and Kingship in Ancient Maya Society*. University of Texas Press, Austin.

Pollack, H. E. D.

1936 *Round Structures of Aboriginal Middle America*. Publication 471.
Carnegie Institution, Washington D. C.

Satterthwaite, Linton Jr.

1952 *Piedras Negras Archaeology: Architecture, Part V: Sweathouses*.
University Museum, Philadelphia.

Yaeger, Jason

1996 The 1996 Excavations at San Lorenzo. In *Xunantunich Archaeological Project: 1996 Field Season*, edited by Richard M. Leventhal and Wendy Ashmore, pp. 123-150. Report in file with the Belize Department of Archaeology, Belmopan, Belize.

EXCAVATIONS AT SUBOP B, MEDICINAL TRAIL

Liwy Grazioso S., ENAH

INTRODUCTION

This report is an overview of Subop B investigations and the related area (plaza/patio) excavated at Group A of the Medicinal Trail Site. Upon my arrival to the Medicinal Trail Site, eight suboperations (Subops A to H), at Group A had been defined. All subops were 1 x 1 m or 2 x 2 m units within the site grid. Initial excavation units (subops) were designed as information gathering tests concerning stratigraphy, both cultural and natural.

Although Subop B began as a 1 x 1 m unit, it was soon expanded to a 2 x 2 m excavation as a burial was exposed. The burial had an upside down plate on top of human bones, possibly at the head area. The rather tight fit in Subop B necessitated more room in order to excavate this feature and for proper documentation.

With the enlargement of Subop B, the lots from the expanded area were correlated with previous lots and all material of similar provenience were placed together in the field processing laboratory. Details of each step may be found in field notes on file with the Programme for Belize Archaeological Project.

THE EXCAVATION OF SUBOP B

Subop B was a 2 x 2 m unit located in the patio between Structures A-1 and A-3, coordinates 103/100. Subop B had a total of 26 lots. The lot descriptions below begin with Lot 6, since Lots 1 to 5 (in Hyde's notes and in file with PfbAP), were excavated before my documentation began. Therefore, Lots 1-5 are the first five lots from the original 1 x 1 m unit. Table 1, however, lists all lots from Subop B.

7-B-6

Lot 6 is the topsoil or the layer of humus of the expanded unit. The lot includes the materials found at the surface. Ceramics and lithics were collected.

7-B-7 This lot was 10-12 cm below the topsoil, consisting of dry organic dark soil. Artifacts collected include ceramics and lithics.

7-B-8

This lot seems to be some kind of construction fill consisting of stones and loose dirt. Approximately 1 m deep, the matrix doesn't change. It seems to be one single episode (the fill was placed in one single event). It is the same strata visible in the profiles of the original 1 x 1 m excavation. Artifacts collected consist of ceramics and lithics.

7-B-9

This lot produced a noticeable change in the matrix, the size of the stone is smaller and the soil is darker than in the layer above. About 10 cm thick, immediately below this stratum in the original 1 x 1 m of Subop B is where a ceramic plate was found. The plate was placed upside-down over some bones. This feature forced the excavation of the original Subop B to stop and expand to a 2 x 2 m unit. This feature was labeled as Lot 5.

When the subop was expanded into a 2 x 2 m unit, an intrusive feature was observed in the NE corner of the unit. This feature was a very different fill from the surrounding material. The fill has small stones most of them chert, without dirt, and looks like a dry fill. There were spaces between the stones, most of them chert stones, and just a few sherds. It is like what may be termed a “clean” fill, very common in the Late Classic where they (clean fill material), were utilized to gain volume quickly. This observation is not to denote the feature as a time marker. Rather, this commentary is to provide a description or comparison of what is meant by “clean” fill (which usually have no artifacts or almost none). In this case, the “clean” fill is located in a defined area within the unit and does not extend across the entire unit. This intrusive feature extends toward the south into the east profile of the unit.

7-B-10

This lot includes a sascab surface found only in the south and east part of the unit. The sascab doesn't cover the northern area. Its white surface is cut by an intrusion (an intentional break). The cut is associated with a semicircular stone alignment that may be a substructure. At the northern end there are two small stones aside a bigger one. The lot includes gray dirt located below the sascab layer. The sascab layer looks like a floor or some kind of exposed surface, but most likely a floor. At the end of the season we were able to relate this sascab surface with a floor in Subops A and J. The sascab layer is about 1.68 m from datum 1 while the floor in Subops A and J is about 1.65 m from the same point. Therefore, we can say that they are almost at the same height (only about 3 cm difference). In Subop B the sascab ended in a possible step with a square stone in the NW corner. The stone will be one of the ends of this possible step and looks like part of an earlier substructure. An early floor episode was identified from which we were able to recover remains of a step and some of the surface (floor). It was necessary to take this feature out (the step and sascab) to be able to dig further down, but there is a plan map showing this feature.

7-B-11

A sascab surface located immediately below the one described above (7-B-10) comprises this lot. The sascab covers most of the area, but was also broken by the intrusion in the NE corner of the unit. The sascab was better preserved in the north and east part of the unit. This lot includes the sascab, the gray dirt (below), and the materials contained within it. The sascab may be a previous floor (surface).

7-B-12

This is the stratum (lot) below the sascab and the gray dirt. It is a very compacted construction fill made with stones and dirt. This fill is above the burial located in the previous excavated area. Because of this situation, this lot was arbitrarily closed 15 to 20 cm before reaching the burial. These remaining 15-20 cm were excavated as another lot although the matrix and composition is the same for both lots.

7-B13 to 7-B-26

These lots represent the balance of fill above the burial, the burial itself (including burial furniture), and the curvilinear feature to bedrock. The lots are succinctly defined in Table 1 and will be the subject of greater detail by Hyde (dissertation in progress).

Lot Number	Brief Lot Description
B1	Humus layer original unit 1 x 1m.
B2	Sediment below the humus layer, organic dry dark soil
B3	Construction fill
B4	Possible floor or fill
B5	Sherds associated with the bones
B6	Humus layer of the enlarged subop
B7	Organic dry dark soil, below the humus
B8	Construction fill
B9	Intrusive fill, NE corner of the unit
B10	Sascab layer, south and east part of the unit
B11	Sascab layer everywhere except in the NE corner
B12	Construction fill, everywhere except in the NE corner
B13	Intrusive fill in the NE corner
B14	Construction fill, everywhere except NE corner
B15	Intrusive fill in the NE corner
B16	Dark layer, everywhere except NE corner
B17	Possible sascab or eroded limestone, everywhere except NE corner
B18	Intrusive dark stratum (similar to B16) above the burial area only, over the bones and ceramic vessels.
B19	Bones associated with the vessels
B20	Vessel to the south of the bones
B21	Vessel to the NE of the bones
B22	Curvilinear feature in the NE corner of the unit, made out of stones. A possible substructure
B23	Area to the North from the burial and vessels, layer with some stones in a white matrix.
B24	Section inside the curvilinear feature. The feature looks like a substructure; therefore this section is inside the architecture, in the fill of the substructure.
B25	Dark layer just under the curvilinear feature, maybe the original soil on top of the bedrock.
B26	Bedrock

GENERAL OBSERVATIONS (Group A and Subop B)

The Subops located in the northern courtyard of Group A (Subops A, B, E, G, H, I and J), combined form a larger 5 x 2 m unit. The excavations revealed features a bit difficult to understand at the time they were showing up.

The northern part of the excavations revealed the remains of a plaster floor ca. 40 cm below the surface. The plaster has a thickness of 3 to 5 cm with a cracked surface. The plaster was very fragile and in some areas there are pieces missing. The layer below the plaster was formed by dirt and some very small stones, but was not well-prepared.

Between Subops A and I was uncovered a ceramic plate. Some of the sherds were found above the level of the floor and others below it, likely due to root activity.

In the northern part of E and G the floor is completely above its original level. Several stones also stand out from the floor level. A possible explanation for this occurrence may be that the floor, as well as the rocks, were pulled or pushed up by roots or perhaps by a tree-fall. Most of the area in G and J are very disturbed not only by the roots, but also by Prehistoric activities.

The context of Subop B is completely different from those around it (G and J). At the bottom of B there is a burial and the layers above it seem disturbed. It does not look like the layers continue along the entire patio.

Under the second floor was a construction fill, about 35 cm of thick, formed by a lot of dirt, small stones, and some larger stones (the larger stone account for more than 20 cm of the layer).

In the east part of Subop B we found a sascab surface that may have covered, at one time, the whole unit (but nothing of it remained in the north, south, and west sections). Below the sascab there was another similar surface. We found remains of it in the north and east sections, but not in the south and west.

A semicircular informal wall was identified, which we called a “curvilinear feature” is narrow in its upper part and becomes broader at the bottom. It was described as an informal wall because its stones are “glued” together with a very poor quality agglutinant. Its shape is also irregular and has no covering layer of any kind (no stucco, sascab or anything else). It is possible that this is a retaining wall to hold an intrusive fill, although it may also be a substructure that may have been covered by sascab. The intrusive fill extends under the level of the sascab. This curvilinear feature is lot 7-B-22.

To follow the sequence in the rest of the unit (the north and west areas), below the construction fill was found a layer of about 10-15 cm of dark soil (this dark soil is a bit like clay). The layer is very compacted and hard to dig. This stratum is above the burial, on top of the bones and the two vessels associated with it. The next stratum was a white matrix like a crust of limestone, harder than sascab with a texture similar to the stucco, but not being stucco. The bones and vessels were within this matrix. The burial (bones and vessels), was on top of a very cracked floor located below the white matrix. The

burial was in the N-NW section of the unit. The most important profiles are the north and east faces.

An important observation was made concerning the extreme north of the unit, at the bottom of Subop B. Some kind of stone alignment running E-W was uncovered. Inside the curvilinear feature there is also a surface made of stones. The stones at the northern end and inside the feature were at the same level. Very close to the bedrock, they were placed directly on the dark soil that was on top of the bedrock. The curvilinear feature looked like architecture, but it was hard to define the exact shape because of the limited exposure of it. This feature marks a limit between (or separates), the lower surface and the burial area.

ACKNOWLEDGEMENTS

My thanks go to all members of the very productive season (2004). Project Director, Dr. Fred Valdez; UT Staff - David Hyde, Lauri Thompson, and Micaela Obledo. PFBAP Staff - Norma García. The various students including Christian Rodríguez (ENAH-Student), Rebecca Bria, Hannah Whitmore, Tristina Ropp, Tara Dos Santos, Tina Nielsen, Katie Minchew, Rachel Robertson, Doneen Arquines, Chrissie Taylor and John Lowe (many being UT Field School Students). Of course the volunteers who gave their support so wonderfully - Laurel Heyman, Jary Quiñones, Valerie Quiñones, Anne Schaffer, Pat McLoughlin, Kelley Wright, Steven Apple, Josh Tarsky and Adams Tarsky. The project would also not be possible without landowner permission from the Programme for Belize and Belize Government Permits from the Institute of Archaeology.

EXCAVATIONS AT THE MEDICINAL TRAIL SITE: OPERATION 7 - STRUCTURE 2, THE 2006 SEASON

George Rodriguez, The University of Texas at San Antonio

INTRODUCTION

During the summer of 2006, excavations continued at the Medicinal Trail Site (Operation 7), a relatively small community approximately three miles southeast of La Milpa. The structure under investigation (Structure 2) is part of a larger residential complex (RB-62) that consists of six buildings and three courtyards aligned roughly north-south (Hyde 2005; Figure 1). Previous investigations have shown Structures 1 and 6 to possess formal architecture, including a bench in Structure 1, and there have been some indications that both structures may have been vaulted (Hyde et al. 2006). Structure 4 is a pyramidal building and the largest structure within the residential complex. Currently, little is known concerning Structures 3 and 5. Between Structures 1 and 2 is an ancillary building most likely used for storage and/or other domestic activities. Structure 2 marks the northeast corner of the residential complex and has a rough northwest-southeast orientation. The placements of excavations were predetermined using an established grid (Hyde 2005). The goal of the excavations was to uncover Structure 2, paying particular attention to architectural features.

RESEARCH DESIGN

This investigation reflects a trend within Maya archaeology that has seen an increasing emphasis on households and what they can tell us about ancient Maya society. Household archaeology allows for the study of society at the family level, giving clues as to how its members adapted to various social, economic, and environmental conditions. The household under investigation is part of a residential complex that could be classified as a rural elite residence/palace (Adams 1999). These types of residences are common throughout the Three Rivers Region during the Late and Terminal Classic (e.g. Grazioso 2003; Houk 2003b) and have been a source of debate, especially with regards to their function. Therefore, the goal of the investigation into Structure 2 is twofold: 1) to answer basic questions as to the size, function, and time of occupation of Structure 2 and 2) to test current models of ancient Maya organization as they relate to rural elite residences.

Ethnohistoric and archaeological evidence have shown Maya households to vary greatly in both size and function (Wauchope 1934; Sheets 2002; Marcus 2004; Trachman 2007). Size often times can indicate the function of a particular structure, though exceptions exist as households can be used in a variety of different ways (e.g. Inomata et al. 2000). To determine the exact function of any structure, it is important to account for all recovered artifacts that can further illuminate the activities that occurred within and around any given structure; that is, size alone does not determine function. Investigating

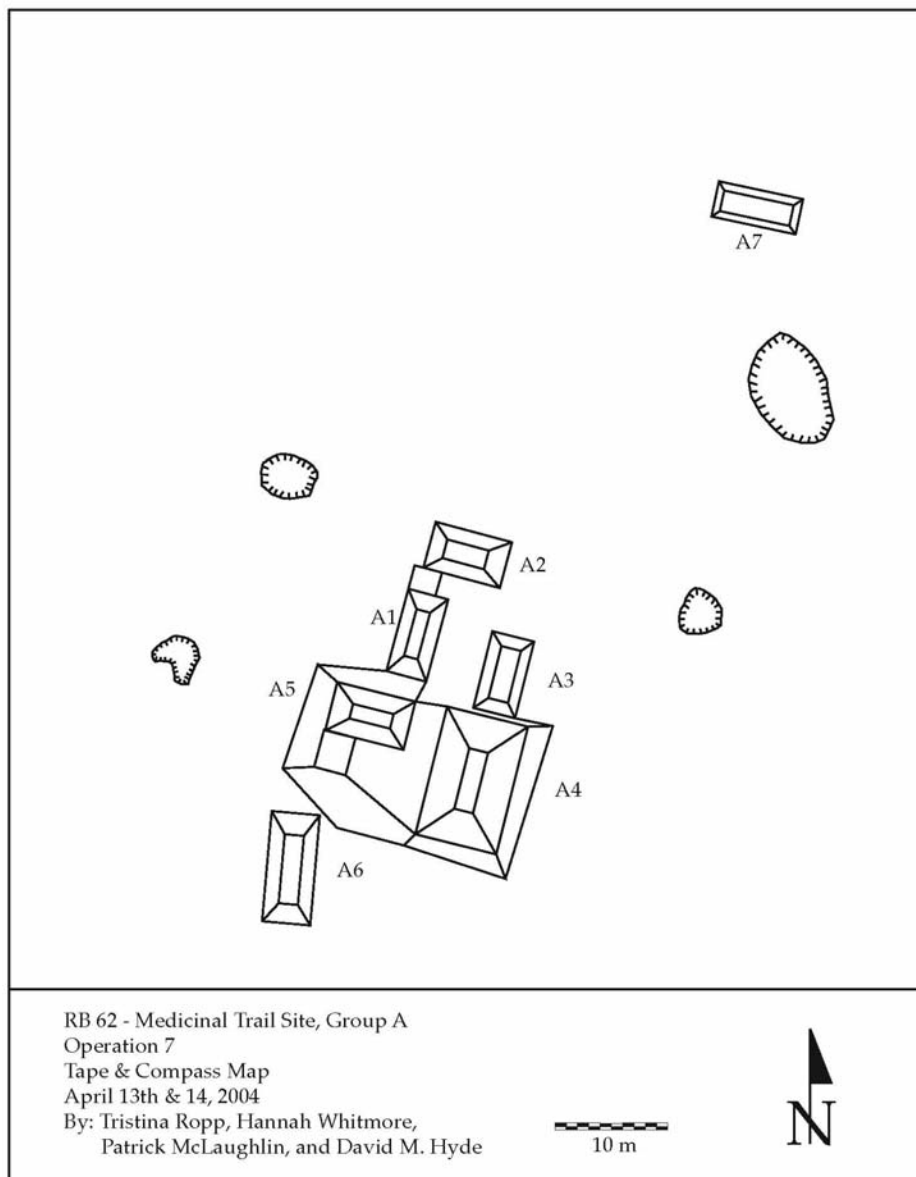


Figure 1. Map of Group A, Medicinal Trail Site.

households can further provide information concerning the economic activities that their former residents engaged in, often indicated by items found in relatively large numbers (e.g. Becker 1973). However, there are several difficulties associated with household archaeology where even basic questions - such as who the occupants were in any given household - cannot be answered convincingly. Furthermore, preservation, or lack thereof, often times skews data as decomposition and rate of abandonment directly affect the amount of information that can be recovered (Sheets 2002; Inomata and Stiver 1997). In any case, households can provide information concerning the organization of labor, the economic activities of a community, and the role a household's residents had within their society.

Rural elite residences have raised questions concerning the political, economic, and social organization of ancient Maya society. Several explanations have been put forth regarding the exact purpose of rural elite residences including: 1) they served as a temporary residence for the elite, similar to a feudal society (Adams and Smith 1981); 2) they were an adaptation to a growing population (Scarborough and Valdez 2003; Kunen and Hughbanks 2003); and 3) they acted as strategic positioning by the Maya elite who may not have had control over the subsistence economy (Houk 2003a). Investigations into RB-62 will test the current knowledge of Maya organization and hopefully determine whether any of the above conclusions are valid.

Settlement pattern and hieroglyphic studies show there to have been a political hierarchy among Maya communities in which political importance is often reflected by site size (Marcus 1973; Martin and Grube 2000; Adams and Jones 1981). Within the Three Rivers Region, four classes of communities have been identified by Robichaux (2005), correlating well with the four-tiered hierarchy proposed by Marcus (1973). According to Robichaux's classification, Medicinal Trail most likely constitutes a village or hamlet-sized community whose primary responsibility seemed to have been agricultural production. Due to its close proximity to La Milpa, it is most likely that Medicinal Trail was subordinate to this larger site located approximately three miles to the northwest. If indeed the Maya organized themselves politically in such a way, then the residents of RB-62 may have been intermediaries between the La Milpa and Medicinal Trail communities responsible for overseeing the economic activities within Medicinal Trail.

When discussing social status, the ancient Maya have been placed in one of two broad categories: elite and non-elite. Being that the residents of RB-62 were most likely part of the elite class, a greater emphasis will be placed on studying how the elite functioned within Maya society. The elite were those responsible for the political, economic, and religious aspects of Maya society whose power derived from their ability to control critical and productive resources and legitimated by an ideology stressing ancestor worship (Hendon 1991). Specialist families were often attached to an elite household, indicating that the elite were responsible for the production and distribution of various goods and trade. Current studies into the economic organization of the Three Rivers

Region have employed the concept of “heterarchy,” defined as “those relations of elements that are non-hierarchical or have the potential to be ranked in a number of different ways” (Crumley 1987). That is, the economy was not always influenced by the site hierarchy that existed, meaning there were economic exchanges out of elite control. To better understand the economic activities that occurred within RB-62, artifactual evidence must be accounted for as it can reveal not only what level(s) of production the ancient residents engaged in, but also reveal the role its residents had within Maya society - especially in regards to the proposed “heterarchical” character of Maya economics.

Though investigating a single rural elite residence, much less a single household, cannot answer all the questions concerning Maya organization, the data retrieved from such investigations will be added to the growing database of the Three Rivers Region.

EXCAVATIONS

A brief summary will be given on individual subops. In some instances, multiple subops were used to investigate a single feature, and hence are discussed as a group. The goal of the excavations was twofold: follow and uncover the entry walls of the ancillary structure until it intersected with Structure 2 and to follow and uncover Structure 2's walls to determine its approximate size. The former was accomplished, while the latter is ongoing. Eight new subops were opened: EJ, EK, EM, EO, EQ, ET, EV and EW. All ceramics recovered from these subops date to the Late and Terminal Classic.

Subops EJ, EK, and EM

These units were opened to follow the walls that made up the ancillary structure's eastern entrance found by previous investigations. The goals were to uncover and define the northern and southern walls of the ancillary building's entrance and find the intersection between Structure 2 and the ancillary building.

Subop EJ: This was a 1 x 1 m unit north of Subop DL. This unit followed the northern wall of the ancillary building's entrance, and was dug down to a previously exposed level. Going northward, the wall had a slight southeast-to-northwest direction, and the intersection of Structure 2 and the wall was uncovered in a previously opened unit – Subop DP. Most of the northern wall was uncovered and consisted of worked stone facing outward and cobbles filling the middle.

Subop EK: This was an east-west 1 x 2 m unit south of Subops CU and DL. This unit was opened to follow the southern wall of the ancillary building's entrance. The construction of this wall was similar, with worked stone facing outward and cobble filling. A good portion of the wall was uncovered, but its intersection with structure 1 was not found. A large number of ceramics were recovered just inside the southern wall. The wall roughly dissected the unit in half.

Subop EM: This was a 1 x 1 m unit opened north of Subop EJ. It was opened in hopes of finding both the intersection between Structure 2 and the ancillary building and Structure 2's southern wall. Neither was found in this unit. The wall was most likely destroyed by trees above the mound as no discernible wall feature appeared in this unit.

Subops EO, ET, and EW

These subops were eastward trending and were opened with the intention of following Structure 2's southern wall. Worked stones were found in all subops. However, many were recovered with no associated feature, meaning they were most likely dislodged by tree roots or some other form of destruction.

Subop EO: This was a north-south 1 x 2 m unit. This subop contained only remnants of Structure 2's southern wall: a large, smooth worked stone (ca. 30 x 40cm) along with a large irregularly shaped rock east of it. These two stones were found in the middle of the unit and had a slight southwest-to-northeast orientation.

Subop ET: This was a north-south 1 x 2 m unit east of Subop EO. The western half of this subop contained three large square stacked stones with a southward tilt that were propped up by construction tumble. The first fully intact portion of the southern wall was uncovered in this sub-op and consists of typical construction for the Medicinal Trail Site. There were three levels of construction: base stones making up the bottom level, large worked stones making up the second level, and slightly smaller worked stones on top. The top levels were the least well-preserved of the entire wall. Excavation continued until the base stones were reached; there was no preserved floor present.

Subop EW: This subop was a 2 x 2 m unit extending eastward from Subop ET. Most of Structure 2's southern wall was uncovered in this unit. Very large worked stones were found and were the most well-preserved. The same three-level construction, described above, can be seen. A corner was potentially encountered in the far eastern part of the unit, but further investigation is needed to fully determine its construction.

Subops EQ and EV

These subops were opened to follow the western wall of Structure 2 that was uncovered by previous investigations. It should be noted that only the face of the western wall was discovered and no further excavations were performed to further define the wall. The goal of these subops was to follow the face of the western wall in hopes of finding the northwest corner of Structure 2.

Subop EQ: This was a north-south 1 x 2 m unit extending northward from Subop DC's eastern half in order to follow the back wall of Structure 2. However, several small trees growing above tilted the wall westwards and completely destroyed it in some places. Only the face of the western wall could be uncovered as no attempt was made to define the top of the wall due to time constraints. Excavations went down to a previously

established level and ended when a potential corner was found in the northern half of the unit. In addition, ceramics were found in large numbers alongside and underneath the wall.

Subop EV: This was a 1 x 1 m unit extending eastward from the northern half of Subop EQ. It was opened to better define the northwest corner of Structure 2. However, the wall was so poorly preserved that the corner was never defined. It is most likely to have been destroyed by trees or simply disintegrated.

CONCLUSIONS

Consistent with many ruins in the southern Maya lowlands, ceramic evidence shows Structure 2 to have been largely inhabited during the Late and Terminal Classic. Due to its size and construction, preliminary investigations into Structure 2 suggest it may have been residential. With portions of the southern wall no longer preserved, it is hard to determine whether an entrance was located here. The three large stones discovered in Subop ET may suggest that the entrance was filled in before the structure was destroyed. However, future investigations will determine whether or not an entrance may be found elsewhere and whether the structure had undergone intentional destruction.

Structure 2 is, in fact, small in terms of architecture when compared to Structures 1 and 6, suggesting it may have been a later addition to the residential complex. Furthermore, its placement may suggest that it also acted as a buffer that restricted access to the northern courtyard. The large number of sherds found alongside and underneath the western wall of Structure 2 may indicate a refuse area was present before Structure 2 was built over it. A similar situation can be seen at Structure 7, located northeast of the residential complex, in which some building activity occurred over a midden. Residents of Structure 2 were most likely members of an extended family, although not enough information has been recovered to say any more than this at the moment.

Judging by the size of the households and the presence of a pyramidal building, it is apparent that the inhabitants of this residential complex were important members of the Medicinal Trail community. Though lithic artifacts are few around Structure 2, investigations into Structure 1 recovered large numbers of lithics beneath the plaster floor. It is possible that the residents of this complex were responsible for the procurement of stone tools necessary to conduct agricultural work, or they may have simply been recycled material used in construction. Further investigations will provide more data concerning the economic activities of RB-62.

REFERENCES CITED

Adams, Richard E.W.

1999 *Rio Azul: An Ancient Maya City*. University of Oklahoma Press, Norman.

- Adams, Richard E.W. and Fred Valdez, Jr. (editors)
2003 *Ixcantio Research Reports 1 & 2: The 1990 and 1991 Seasons*. The University of Texas at San Antonio.
- Adams, Richard and Richard C. Jones
1981 Spatial Patterns and Regional Growth Among Classic Maya Cities. *American Antiquity* 46: 301-22.
- Adams, Richard and Woodruff D. Smith
1981 Feudal Models for Classic Maya Civilization. In *Lowland Maya Settlement Patterns*, edited by Wendy Ashmore, pp. 335-49. University of New Mexico Press, Albuquerque.
- Ashmore, Wendy (editor)
1981 *Lowland Maya Settlement Patterns*. Albuquerque: University of New Mexico Press.
- Becker, Marshall J.
1973 Archaeological Evidence for Occupational Specialization Among the Classic Period Maya at Tikal, Guatemala. *American Antiquity* 38(4): 396-406.
- Grazioso, Livy
2003 Explorations of Small Country Palaces 2: BA-34. In *Ixcantio Research Reports 1 & 2: The 1990 and 1991 Seasons*, edited by R.E.W. Adams and Fred Valdez, Jr., pp. 181-204. The University of Texas at San Antonio.
- Crumley, Carole L.
1987 A Dialectical Critique of Hierarchy. In *Power Relations and State Formation*, edited by Thomas C. Patterson and Christine Ward Gailey, pp. 155-68. American Anthropological Association, Washington, D.C.
- Hendon, Julia A.
1991 Status and Power in Classic Maya Society: An Archaeological Study. *American Anthropologist* 93(4): 894-918
- Houk, Brett
2003a The Ties that Bind: Site Planning in the Three Rivers Region. In *Heterarchy, Political Economy, and the Ancient Maya: The Three Rivers Region of the East-Central Yucatán Peninsula*, edited by V. L. Scarborough, F. Valdez Jr., and N. Dunning, pp. 52-63. The University of Arizona Press, Tucson.

Rodriguez

2003b Explorations in Small Country Palaces 1: BA-22a (Nak'nal). In *Ixcanrio Research Reports 1 & 2: The 1990 and 1991 Seasons*, edited by R.E.W. Adams and Fred Valdez, Jr., pp. 153-180. The University of Texas at San Antonio.

Hyde, David

2005 Excavations at the Medicinal Trail Site, Operation 7. In *Programme for Belize Archaeological Project: Report of Activities from the 2004 Field Season*, edited by Fred Valdez, Jr. Occasional Papers, Number 4, Mesoamerican Archaeological Research Laboratory, The University of Texas at Austin.

Hyde, David, Shelly Fischbeck and Rissa Trachman

2006 Report of Excavations at the Medicinal Trail Site for the 2005 Season. In *Programme for Belize Archaeological Project: Report of Activities from the 2005 Field Season*, edited by Fred Valdez, Jr. Occasional Papers, Number 6, Mesoamerican Archaeological Research Laboratory, The University of Texas at Austin.

Inomata, Takeshi and Laura R. Stiver

1997 Floor Assemblages from Burned Structures at Aguateca, Guatemala: A Study of Classic Maya Households. *Journal of Field Anthropology* 25: 431-452.

Inomata, Takeshi, Daniela Triadan, Erick Ponciano, Estela Pinto, Richard E. Terry and Markus Eberl

2000 Domestic and Political Lives of Classic Maya Elites: The Excavation of Rapidly Abandoned Structures at Aguateca, Guatemala. *Latin American Antiquity* 13(3): 305-330.

Kunen, Julie L. and Paul J. Hughbanks

2003 Bajo Communities as Resource Specialists: A Heterarchical Approach to Maya Socio-economic Organization. In *Heterarchy, Political Economy, and the Ancient Maya: The Three Rivers Region of the East-Central Yucatán Peninsula*, edited by V. L. Scarborough, F. Valdez Jr., and N. Dunning, pp. 92-108. The University of Arizona Press, Tucson.

Marcus, Joyce

1973 Territorial Organization of the Lowland Classic Maya. *Science* 180: 911-16.

2003 Maya Commoners: The Stereotype and the Reality. In *Ancient Maya Commoners*, edited by Jon C. Lohse and Fred Valdez, Jr., pp. 255-283. University of Texas Press, Austin.

Martin, Simon and Nikolai Grube

1998 *Chronicles of the Maya Kings and Queens: Deciphering the Dynasties of the Ancient Maya*. London: Thames and Hudson.

Robichaux, Hubert R.

2005 *Fifteen Years of Settlement Pattern Surveys in the Three Rivers Region of Northwestern Belize: What Have We Learned?* Paper presented at the Third Annual Belize Archaeology Symposium, San Ignacio, Belize.

Scarborough, Vernon, Fred Valdez, Jr., and Nicholas Dunning

2003 *Heterarchy, Political Economy and the Ancient Maya*. Tucson: University of Arizona Press.

Scarborough, Vernon and Fred Valdez, Jr.

2003 The Engineered Environment and Political Economy of the Three Rivers Region. In *Heterarchy, Political Economy, and the Ancient Maya: The Three Rivers Region of the East-Central Yucatán Peninsula*, edited by V. L. Scarborough, F. Valdez Jr., and N. Dunning, pp. 3-13. The University of Arizona Press, Tucson.

Sheets, Payson

2000 *Before the Volcano Erupted*. University of Texas Press, Austin.

Wauchope, Robert

1938 *Modern Maya Houses: A Study of Their Archaeological Significance*. Carnegie Institution of Washington, Washington, D.C.

EVIDENCE OF QUARRYING AROUND AN ISOLATED PLATFORM MOUND AT THE MEDICINAL TRAIL COMMUNITY

David M. Hyde, The University of Texas at Austin
Maria Martinez, The University of Texas at Austin

INTRODUCTION

The Medicinal Trail site, located between the Rio Bravo escarpment and the La Lucha uplands, is a dispersed hinterland community consisting of multiple courtyard groups and numerous informal clusters of mounds and multiple landscape modifications such as terraces, depressions, and linear berms. The site was first excavated in 2002 and consisted of two separate studies that investigated mounds and terraces that crossed the “Medicinal Trail,” a Programme for Belize tourist trail (Farnand 2002; Ferries 2002). Excavations were undertaken in 2004 (Chmilar 2005a, 2005b) at the Turtle Pond, a seasonally inundated depression at the base of a slope west of the site. Significant excavations were also begun at Group A in 2004 (Hyde 2005, Hyde et al 2005) and have continued seasonally through 2006.

Group A is located atop a ridge and consists of a core area in which six mounds are distributed around three contiguous courtyards aligned on a north-south axis. Around Group A and associated with it are four depressions, two to the west of the core area, one to the east, and the largest, approximately 25 m north by northeast of core area. Approximately 10 m to the north of the largest depression is Structure 7, a single, low rectangular platform (Figure 1). Work on Structure 7 began late in the 2005 season and continued throughout the 2006 season. Excavations determined the dimensions of the platform, some of the methods employed to construct it, and a disturbance to the structure due to bioturbation. Among the findings of the excavations around the platform is a midden in a deep artificial depression and evidence for limestone quarrying. It is possible the depression and the quarrying are related. From the recovered ceramics so far analyzed, the midden material dates from the Late Preclassic, the Protoclassic, Early Classic, and some Late Classic (Lauren Sullivan, personal communication 2006). This report summarizes the excavations on and adjacent to Structure 7 with an emphasis on the 2006 season.

PLATFORM DESCRIPTION

The entire southern and eastern sides and portions of the northern side of the mound were exposed, revealing its size as well as the method in which the platform was constructed. Structure 7 measures 9 x 4 m with the long axis oriented east-west and is approximately 80 cm high. It is likely that the platform supported a perishable structure as it lacked any identifiable walls or other features on top. Prior to construction, sediment was stripped to bedrock over which was laid a prepared surface consisting of a thin layer of dark compact soil varying in thickness from 10 to 20 cm. This established a firm, level surface on top



Figure 1. Plan map of Structure A-7, Medicinal Trail Site, Group A.

of which were placed cut limestone blocks in multiple courses. The southwest, southeast, and northeast corners consisted of large cornerstones and it is assumed the same is true for the remaining corner. An additional element is located on the south side of the platform. Resting between the prepared surface and the cut stone blocks are a layer of roughly shaped stones that project out in front of the wall, likely functioning as a step, indicating that the entrance to the platform was from the south (Figure 2).

Excavations adjacent to the mound revealed that the bedrock on which the platform was constructed slopes downward from north to south. The surface of the platform is relatively level, but the front is taller than the back. The north side of the platform, the back side, consists of just two courses of stone where as the south side has as many as four courses. Additionally, the prepared surface that surrounds the platform, used to create a level surface, is thicker in the front than at the back.

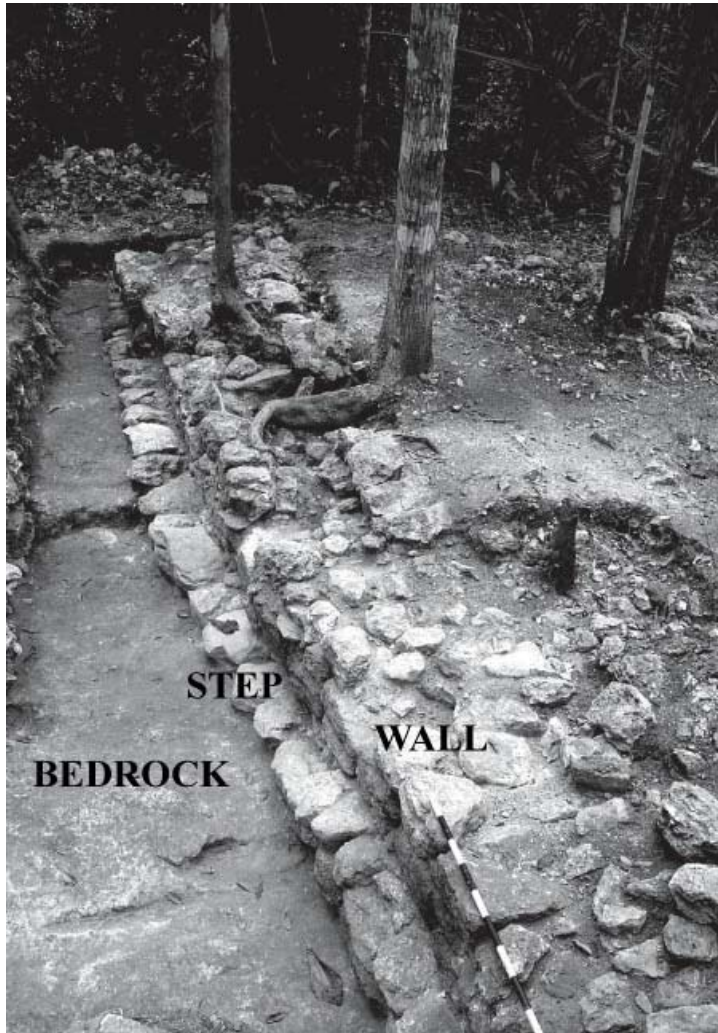


Figure 2. Photo of the south (front) side of Structure A-7.

On the southern face of the platform, near the southwest corner, there is a large intrusive nest from an unknown insect. The effect of this nest was the pushing out of some of the cut stone blocks and slumping of others in the platform wall. Clearly visible in the blow out, the nest extends well into the interior of the platform. The type of insect that created the nest and the full extent of the bioturbation have not yet been determined.

There were numerous cut stone blocks stacked up against and as high as the platform. Some of these had tumbled over creating a talus slope effect. These stones were stacked

directly onto bedrock. This assemblage does not appear to have been a functional part of the architecture, but rather the storage of unused stone masonry blocks. This conclusion is based on the lack of evidence that mortar was used to stabilize and maintain the form of the stacked blocks. The area where these blocks were placed was a solid assemblage of stones, not just an outline or wall. The stone blocks were recorded and removed. Underneath the stacked blocks, into the bedrock, were rectangular scars outlining stone blocks that appear to have been in the process of being harvested (Figure 3). These quarry marks extended under the structure. To follow these features the northeast corner of Structure 7 was systematically excavated. Under the northeast corner of Structure 7 was an earthen floor and below that there was also additional evidence of quarrying activity in the form of scars in the bedrock (Figure 4).

OFF MOUND EXCAVATIONS

Midden

After recording and then excavating through the prepared surface on the east side of the platform we encountered a midden deposit that was placed inside an artificial depression in the bedrock. The depression is a bowl-shaped pit 2 m in diameter and approximately 1 m deep. The western portion of the midden and pit extends underneath the northeast corner of Structure 7. This would indicate to us that the pit and the midden that filled it occurred before the platform was constructed. The midden sediment was very compact and contained large amounts of charcoal, lithic debitage, fire modified rock, a charred macrobotanical specimen (possibly a squash seed), and many large ceramic sherds many of which could be fit together. The preliminary *in situ* ceramic examination suggests that there was a lot of intermixing of the deposits in the midden. Lauren Sullivan, the PfbAP ceramicist, found Late Preclassic, Protoclassic, Early Classic, and some Late Classic ceramic types in the deposit. Since there did not appear to be any stratigraphic differences in the midden matrix and to determine if the deposit was a true midden, or secondary refuse dump, it was excavated in four 15 cm lots to preserve chronological integrity. The results of the ceramic analysis are planned for the summer 2007 season and will be presented in next season's report.

Four matrix samples were also collected from each of the 15 cm level, containing approximately 5 cm³ in volume. The samples were sent to John Jones at Washington State University, for palynological analysis. The results came back negative. The four samples contained quite a bit of charcoal and some fungal spores, but no fossil pollen (personal communication, John Jones 2006). An abundance of exotic tracer spores that were added at the beginning of processing were recovered indicating there were no problems in the lab. The midden deposit from Subop EL was processed through nested sieves for macrobotanical remains. By the end of the season the matrix was sieved but will be analyzed at the start of the 2007 season.



Figure 3. Photo of northeast corner of Structure A-7 with quarrying scars.



Figure 4. Photo of artificial depression and quarrying scars (outlined) on the bedrock next to and under northeast corner of Structure A-7.

Quarrying

As stated above, the midden was recovered inside a small bowl-shaped depression roughly 2 m in diameter and approximately 1 m deep relative to the surrounding bedrock. Inside the depression the walls are nearly vertical three-fourths of the way down before curving inward, bathtub like. Additionally, the bedrock surface to the south, west, and north of the depression has evidence of quarrying in the form of rectangular scars that approximate the size of the cut and shaped masonry stone.

The stratigraphy of the artificial depression consisted of five layers starting with humus layer on top (Figure 5). Below this is a layer of depositional sediments, a combination of aeolian and colluvial, as well as wall collapse and tumble. Next is the first culturally intact layer, the prepared surface. This earthen floor capped the midden deposit which is separated from the bedrock by a layer of compact grayish, almost ashy sediment. Other than the midden, the other strata contained low artifact densities.

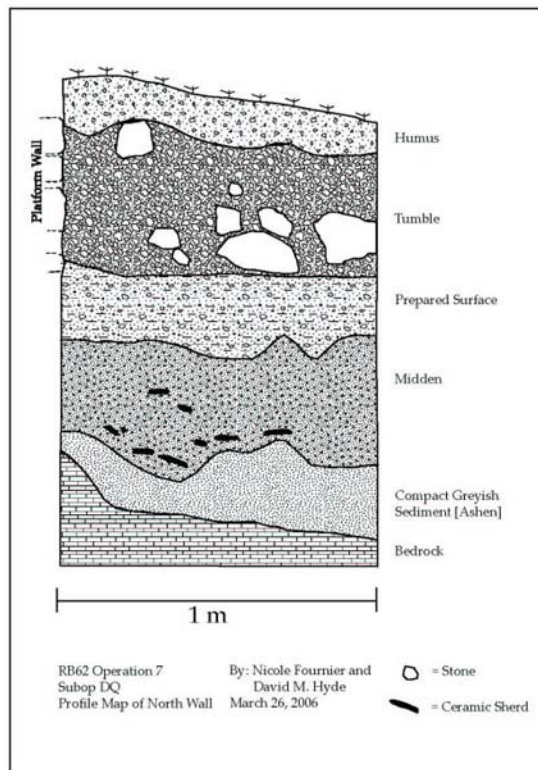


Figure 5. Profile drawing of the artificial depression east side of Structure A-7.

DISCUSSION AND CONCLUSION

The function of the platform is still uncertain. Once the artifact assemblage has been analyzed this should become clearer. It seems apparent that at least two occupations occurred at the platform. This is evident from the ceramics which span from the Late Preclassic through the Late Classic. More importantly though is the fact the platform rests on top at least part of the small artificial depression, midden, and rectangular scars on the bedrock. It is possible that within Structure 7 there is an earlier smaller platform representing those responsible for the above mentioned features. Excavation and removal of a small portion of the northeast corner of the platform did provide and indications for this however. Additional work in future seasons will address this issue.

The small depression is classified as an artificial depression based on cutmarks on the northern margin of the depression (Weiss-Krejci and Sabbas 2002). This particular depression may have functioned in multiple capacities over time. Although depressions throughout the Lowlands may have served for mining for *sascab* (sascabera) or clay (clay mine), the rectangular scars approximately was extracted from the northern margins of the depression (Weiss-Krejci and Sabbs 2002). Consequently, it appears that the limestone basin may have been dug out during quarrying activity or was perhaps dug out to create a water storage device (Scarborough and Gallopin 1991). However, most depressions in this area that were used for quarrying, water storage, clay mines, sascaberas and household cisterns, such as those at La Milpa, Dos Barbaras, and Wari Camp, are substantially larger than the depression found to the east of structure 7 (Weiss-Krejci and Sabbas 2002). The depression may have functioned as a cistern due to the isolated nature of the platform (Carr and Hazard 1961).

Analysis of the ceramic forms and lithics should provide information regarding the function of the platform. Certainly limestone extraction for masonry blocks, and possibly *sascob* are involved in the activities that occurred here. Additional work is planned in the coming seasons to determine if there is an earlier structure subsumed within Structure 7 and the full extent of the quarrying.

REFERENCES CITED

- Carr, Robert F., and James E. Hazard
 1961 *Map of the Ruins of Tikal, El Peten, Guatemala*. Tikal Report No. 11. University Museum Monograph 21. University of Pennsylvania, Philadelphia.
- Chmilar, Jennifer
 2005a *Ancient Maya Water Management: Archaeological Investigations at Turtle Pond, Northwestern Belize*. Master's thesis on file with the Department of Anthropology, University of Cincinnati.
 2005b Water Management at the Turtle Pond: A Preliminary Report of Excavations at RB62, Op 8. In *Programme for Belize Archaeological Project*:

Report of Activities from the 2004 Field Season, edited by Fred Valdez, Jr., pp. 27-34. Occasional Papers, Number 4, Mesoamerican Archaeological Research Laboratory. The University of Texas at Austin.

Farnand, Danica M.

2002 *Agricultural Formation Histories of Prehistoric Terraces of the Medicinal Trail Site, Northwestern Belize*. M.A. thesis, Department of Anthropology, Division of Graduate Studies and Research of The University of Cincinnati.

Ferries, Laura C.

2002 *Site Formation and Occupation History of the Medicinal Trail House Mound Group at the Programme for Belize Archaeological Project, Belize*. M.A. thesis, Department of Anthropology, Division of Research and Advanced Studies of The University of Cincinnati.

Hyde, David M.

2005 Excavations at the Medicinal Trail Site, Operation 7: Report of the 2004 Season. In *Programme for Belize Archaeological Project: Report of Activities from the 2004 Field Season*, edited by Fred Valdez, Jr., pp. 7-14. Occasional Papers, Number 4, Mesoamerican Archaeological Research Laboratory. The University of Texas at Austin.

Hyde, David M., Shelly Fischbeck, and Rissa Trachman

2006 Report of Excavations at the Medicinal Trail Site for the 2005 Season. In *Programme for Belize Archaeological Project: Report of Activities from the 2005 Field Season*, edited by Fred Valdez, Jr., pp. 7-16. Occasional Papers, Number 6, Mesoamerican Archaeological Research Laboratory. The University of Texas at Austin.

Scarborough, Vernon L., and Gary G. Gallop

1991 A Water storage Adaptation in the Southern Lowlands. *Science* 251:658-662.

Weiss-Krejci, Estella and Thomas Sabbas

2002 The Potential Roll of Small Depressions as Water Features in the Central Maya Lowlands. *Latin American Antiquity* 13(3):343-357.

REPORT OF EXCAVATIONS FROM THE 2006 SEASON: OPERATION 11 AT MEDICINAL TRAIL SITE

Jason M. Whitaker, The University of Cincinnati

INTRODUCTION AND GENERAL DESCRIPTION

The following represents a preliminary report of excavations conducted during the months of May and June 2006, at the Medicinal Trail site Operation 11. The operation under discussion is an isolated mound located on a gradually sloping surface 82 degrees southeast, at an approximate distance of 90 meters from Operation 7 (Figure 1). In addition, Operation 11 is 6.5 meters lower in elevation than Operation 7. A tape and compass map was made of Operation 11, which yielded measurements of 5.4 meters on its north-south axis, and 13.7 meters on its east-west axis. The orientation of this mound is 105 degrees east of north. The overall purpose of excavations at Operation 11 was to contribute on numerous scales of analysis to the corpus of data compiled by current and previous researchers at this site (e.g. Ferries 2002, Hyde 2005, Hyde et al 2006).

EXCAVATION METHODS AND OBJECTIVE

To conduct systematic excavation of Operation 11 methods were utilized to control the placement of excavation units, and recording of excavation data. An operational grid was established based upon the cardinal directions. The grid extended west and south of a north 100 west 100 point (Figure 2). Sixteen suboperations were placed according to this grid system, the sizes of which varied according to the needs of the excavation process. Lots within suboperations were established based upon soil change, or the presence of a feature. To maintain vertical control of units seven datum points were placed, beginning with the 100/100 point, and continued according to the needs of excavation (Figure 2).

To maximize the amount of information obtained from the excavation of Operation 11 specific objectives were established prior to the excavation process. The first objective was to establish stratigraphic control. The second was to determine the situation of the mound in terms of a front and backside. The third was the location and definition of activity areas. The fourth objective was to define the inner and outer perimeter of the mound. The fifth objective was to identify and attempt determine the function of interior features. The sixth and final objective was to better understand the occupation and construction chronology of Operation 11.

DISCUSSION OF SUBOPERATIONS

The following descriptions and discussions of suboperations are in terms of associations with features, and location on the mound, and not necessarily in order of excavation. A brief description of soil types and their general association with features is given.

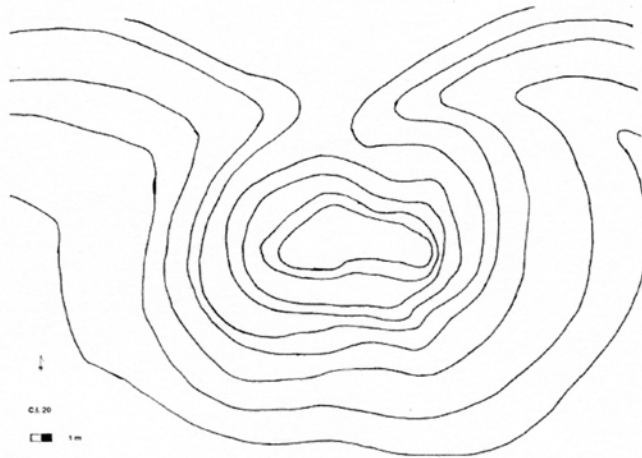


Figure 1. Contour map of Operation 11.

Medicinal Trail site RB 62
Operation 11
June 2006

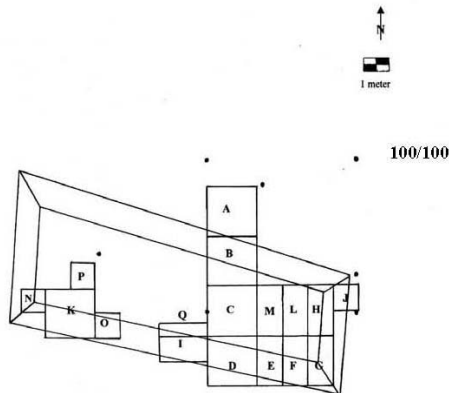


Figure 2. Tape and compass map of Operation 11, with excavation units and datum points.

Suboperation A

The initial excavation unit was Suboperation A, a 2 x 2 meter unit, excavated in four lots to a depth of 95 centimeters below surface to bedrock. This unit was divided into 1 x 2 meter sections, and the western 1 x 2 meter section was excavated. Stratigraphic control was established with the excavation of this unit.

As stated above, descriptions of soils and their association with features are brief. The uppermost layer is humus, with a dark brown color, and heavy amounts of organic inclusions. The second layer is a lighter shade of dark brown, with fewer organic inclusions, and small amounts of pebble inclusions. A field test of this soil showed that there was some clay present within the matrix. The third soil layer was the thickest, with an average measurement of 60 centimeters in this unit. This trend continued on the southern side of the mound. This soil layer was thinner on the east, west and interior portions of the mound. The color of this layer was light brown with a medium grained structure, and a clayey texture. Numerous pebble, cobble, and stone inclusions were observed, including numerous stones, which seemed to have been culturally modified. The fourth and lowest soil layer was associated with the base of architectural features, and consisted of fine-grained, light gray silty clay, with few rock inclusions.

One feature was associated with this unit. In Lots, 3 and 4, at a depth of 55 centimeters below surface, associated with the third and fourth soil layers was a possible platform foundation, which rose 40 centimeters above the bedrock surface. This feature was constructed through the modification of a bedrock outcropping. Flat rectangular stones were placed on either side of the outcropping until a level surface was achieved. Above this level surface, a large limestone block was placed, measuring 15 x 50 centimeters, with a thickness of 20 centimeters. Time did not permit the further investigation of this feature in the eastern 1 x 2 meter section of the unit.

Suboperations D, Q and I

Suboperation D, a 2 x 2 meter unit, was excavated in six lots. Lots 1 through 4 were excavated to a depth of 43 centimeters below surface. Two features were associated with this unit, a possible entrance and a plaster surface. The possible entrance is located in the northern section of the unit. A large stone, which was possibly a doorjamb was observed in Lots 3 and 4, and measured 36 x 60 centimeters, with a height of 40 centimeters. The preservation of this stone was good, and observed to be modified on its outer, inner, and upper faces. In addition to this, the corners were rounded. Excavation in these two lots west of this stone yielded no evidence of a continuation of stones, which would indicate the continuation of a wall. At the base of the possible doorjamb, and extending towards suboperation Q were a row of square limestone blocks, with average measurements of 22 x 22 centimeters, and rising 10 centimeters above the terminal elevations of Lot 4. These base stones were modified on their outer faces only.

South of the possible entrance a plaster surface was observed. This surface was well preserved in the eastern 1 x 2 meter section of the unit, and poorly preserved in the western 1 x 2 meter section. This was most likely due to root action from a large tree adjacent to the western edge of the unit. The well preserved section of the unit showed that as it approached the base stones it appeared chipped off. This suggests that it possibly graded into the base stones when the surface was fully intact.

Excavation proceeded through this plaster surface in Lots 5 and 6 to a depth of 62 centimeters below Lot 4, which was 1.05 meters below the surface of the mound. This was done to establish construction chronology, and gain better insight into the construction methodology utilized to construct the platform. The excavation of these two lots showed that the patio surface had an average thickness of six centimeters, and was constructed of solid plaster. The appearance this plaster surface in terms of construction was similar to descriptions given by Littman (1967) for the construction of Maya floors. Lot 6, as stated above terminated upon reaching bedrock at a depth of 53 centimeters below the level of Lot 5, and consisted primarily of fill material, such as chert and limestone cobbles, lithic artifacts, and ceramic sherds. Large stones were observed near bedrock. The profile of Lots 5 and 6 showed that approximately one meter south of the base stones numerous limestone blocks were stacked in a step pattern, increasing in height to approximately 20 centimeters under the base stones, with smaller fill material above. The presence of these large stones and the manner in which they were placed suggests that they were utilized to provide a solid base foundation for the platform (Ferries 2002).

Suboperation Q, a .50 x 1 meter unit, oriented east to west, was excavated to locate an opposing doorjamb to the one observed in Suboperation D. This unit was excavated in two lots to a depth of 39 centimeters below surface. Lot 1 was excavated to a depth of 9 centimeters below surface. Numerous tree root inclusions, along with other organic inclusions were noted. Lot 2 was excavated to a depth of 30 centimeters below surface. This lot was dominated by large stones, which appeared to be broken apart, most likely the result of root action, as a large tree was present immediately north of this unit. The only line of evidence that suggested that they were part of a feature was that many of the pieces appeared to be modified. It is possible that the stones observed in this unit are the remains of the western side of an entrance on the eastern side of the mound.

Suboperation I, a 1 x 2 meter unit, oriented east to west was excavated in three lots to a depth of 13 centimeters below surface. The unit was excavated with the purpose of better defining the westward extent of the outer plaster surface, and to locate the opposing side of the entrance posited for Suboperation D. Neither was located in this unit. Heavy tree roots dominated the unit, along with large amounts of pebbles and cobbles.

Suboperations E, F, G, H and J

Suboperations E, F, and G were excavated to follow the features observed in Suboperation D. These three units were all oriented north-south. Suboperation E, a 1 x meter unit, was excavated in five lots. Lots 1-4 were excavated to a depth of 36 centimeters below surface. Lots 2 and 3 showed an alignment of chert stones above the level of the possible doorjamb in Suboperation D. A wall was observed in Lots 3 and 4 of this unit. This wall measured between 30 and 35 centimeters in height. The wall was constructed of rectangular limestone blocks, measuring 28 x 40 centimeters, and modified on its upper and outer faces. Lot 5 showed that the thickness of this section of the wall was 20 centimeters. Below this feature, rising 10 centimeters from the termination of Lot 4 were a series of base stones, extending across the unit and connected to the base stones observed in Subop D, Lot 4.

Excavations in Suboperation F displayed similar findings. However, the wall observed in this unit was poorly preserved, and no wall stones were able to be measured in their entirety. The base stones in this unit were visible, and in line with those already mentioned. In addition, the row of chert boulders was present and inset from the wall. In both the abovementioned units, an extension of the plaster surface observed in Subop D, Lot 4 was observed, with a similar pattern of erosion near the base of the wall and in the southern section of the units.

Suboperation G, a 1 x 2 meter unit, was excavated in three lots. Lots 1 and 2 were excavated to a depth of 6 centimeters below surface. The row of chert stones continued into Suboperation G for 40 centimeters before turning northeastward into the northern limit of the unit. Lot 2 was terminated upon reaching the top of the platform wall. Lot 3 was excavated level with Suboperations E and F, Lot 4. The platform wall continued in this unit for 40 centimeters before reaching the southeast corner, and turned northeast for another 1.4 meters. The condition of this wall was poor on the southside of the mound. Preservation increased on the eastern side. Measurements of wall stones were similar to those mentioned for Suboperation E. In addition, the base stones continued to the southeast structural corner, where they abruptly terminated. The plaster surface did not continue into this unit in a preserved state. However, evidence of a plaster surface was observed in the form of plaster pieces and fill material.

An interesting feature was observed in this unit, consisting of numerous large flat stones extending northeast and southeast of the platform wall corner. These stones were chert and limestone, with an average measurement of 22 x 27 centimeters.

Suboperation H, a 1 x 2 meter unit, placed north of Suboperation G, was excavated in order to follow the northeastward course of the platform wall from the structural corner in Suboperation G. This unit was excavated in five lots. Lots 1-3 were excavated to a depth of 36 centimeters. These lots showed a continuation of the platform wall for another 1.68 meters, and terminated in a northeast corner. This section of the wall was in a poorer

state of preservation than that observed on the southern side of the mound, with no definable wall stones. Due to this constraint, the location of the wall had to be estimated based upon the line of intact wall stones in Suboperation G. The corner likewise was only observable through the western profile of this unit and chert blocks above the wall, which outlined a general location of the corner. The remaining 37 centimeters between the northeast structural corner and the northern limit of Suboperation H was excavated in Lot 4, and further assisted in defining the northeast structural corner. Lot 5 was excavated to gain a better understanding of the chert blocks inset from the platform wall. The excavation of Lot 5 showed that they had an average measurement of 20 x 26 centimeters, with an average thickness of 10 centimeters, which were comparable in measurement to chert blocks observed in Suboperations E, F, and G. Furthermore, they seemed to stand two, possibly three courses high. It was difficult to determine the actual height, as most of them, in all units on the eastern and southern sides of the mound were slumped over onto the backside of the platform wall. Nonetheless, they seem to have been foundation braces for a perishable structure, as they are similar in appearance to descriptions given by Abrams (1994). At the termination of Lot 3 a continuation of the flat stones was observed extending past the northeast corner. Most likely these stones continued to a foundation corner, which was not located.

Excavation in Suboperation J, a 1x1 meter unit, showed that these stones extended outward from the platform wall for approximately one meter. The function of these stones is not well understood at this time. It is possible that they were paving stones, and/or a device facilitating drainage on the eastern side of the mound.

Suboperations B, C, L and M

Suboperation B, a 2 x 2 meter unit, immediately south of Suboperation A, was excavated in six lots. Lots 1 through 4 were excavated to a depth of 34 centimeters below surface. In Lots 3 and 4 a triple alignment of stones, with a thickness of 40 centimeters was observed extending from the eastern side of the unit. These three stone alignments did not extend the entire two meter width of the unit. The inner coursing of stones extended 70 centimeters northwestward, and 30 centimeters on its middle and outer courses. The gap between these stone alignments was 15 centimeters. In this 15 centimeter space was fill material. A plaster surface was observed at the terminal elevations of Lot 4 and located directly south of the triple stone alignment. This plaster surface extended from the southside of the triple stone alignment for approximately 50 centimeters. Lots 5 and 6 were located north of the triple stone alignment in an attempt to better understand the space between the triple stone alignment and the foundation observed in suboperation A. Excavation was taken down to the top of the foundation observed in suboperation A to a depth of 51 centimeters below the terminal elevations of Lot 4. A heavily eroded stepped foundation was observed at the terminal elevations of these lots, consisting of limestone blocks, with an average measurement of 10 x 18 centimeters in three rows beginning at the north side of the triple stone alignment and ending at the backside of the top of the

platform foundation. The function of this stepped foundation wall was most likely to elevate the mound platform, and assist in retaining fill material from the plaster surface.

Suboperation C, a 2 x 2 meter unit, was excavated in six lots. Lots 1 through 3 were excavated to a depth of 40 centimeters below surface. The plaster surface continued into this unit at the terminal elevations of Lot 3, extending southward for approximately 90 centimeters. In Lots 2 and 3 numerous chert stones were observed. These chert stones had measurements similar to those observed in Suboperations E through H. However, the chert cobbles observed in this unit were not stacked in a clearly definable pattern. Only three stones were lying at an angle with, and fronting the plaster surface across the two meter width of the unit. Lots 4 through 6 were excavated south of the plaster surface. The purpose of these lots was to better understand the nature of the abovementioned plaster surface. Lots 4 and 5 were defined on the eastern side of the unit, south of the plaster surface. Lot 4 was excavated to a depth of 10 centimeters below the level of Lot 3. The excavation of this lot was halted due to encountering an alignment of rectangular stones. These stones were further investigated in Lot 5, which was taken to a depth of 22 centimeters below the level of Lot 4. The excavation of Lot 5 showed a clear structural wall, constructed of four coursings of limestone blocks. The lower two coursings were larger and had an average measurement 15 x 30 centimeters. The upper two coursings were smaller limestone blocks, and had an average measurement 10 x 15 centimeters. At the terminal elevations of Lot 5 a lower plaster surface was identified. The preservation of this surface was well preserved in relation to the one observed in Suboperation B Lot 4, and Suboperation C, Lot 3. This surface graded into the base of the structural wall, and continued towards the square base stones in Suboperation D. Preservation decreased as it approached the base stones. Lot 6 was located immediately west of Lots 4 and 5 and excavated to a depth of 25 centimeters below the level of Lot 3. The structural wall continued, but was in a poor state of preservation, and almost completely blown out in one section. The terminal elevations of this lot showed a continuation of the plaster surface. However, as was the case with the structural wall, the plaster surface was poorly preserved.

Suboperation M was a 1 x 2 meter unit excavated in five lots. Lots 1 and 2 were excavated to a depth of 17 centimeters below surface. Observed in these lots were bits of plaster and fill material especially in the eastern section of the unit. Lot 3 was the northern 1 x 1 meter section of the unit, and was excavated to a depth of 9 centimeters below the level of Lot 2. The excavation of this lot showed an extension of the plaster surface mentioned above for Suboperations B and C for approximately 80 centimeters east of these two suboperations. As was the case with Suboperations B and C the plaster surface was poorly preserved. This surface terminated upon reaching a plaster step, with a height of 8.5 centimeters. Ten centimeters in front of this step was an alignment of three stones, extending 47 centimeters south from the northeast section of the lot with the angle of the plaster step. It is interesting that the plaster surface continues through these stones in a manner suggesting that they could have been placed upon the plaster surface

after its construction, or the plaster surface was constructed around these stones. Lots 4 and 5 represent the southern 1 x 1 meter section of Suboperation M. The excavation of these two lots elucidated the nature of the plaster step observed in Lot 3. Lots 4 and 5 were excavated to a depth of 46 centimeters below the level of Lot 2. Excavation in Lot 4 showed that the plaster step continued in a straight line to the southwest, and terminated at the backside of the platform wall in Suboperation E. Below this step a northwestward facing wall was observed. This wall was faced with plaster, as evidenced by large patches preserved in numerous spots. Investigations concerning this wall continued in Lot 5, which provided further evidence of it being faced with plaster. At the terminal elevations of Lot 5 the height of this wall was measured at 45 centimeters. Observed at the terminal elevations of this lot also was a continuation of the lower plaster surface observed in Suboperation C, Lots 5 and 6. As was the case with Suboperation B the plaster surface graded into the base of the southwest facing wall, and the northwest facing wall.

Suboperation L, a 1x2 meter unit, immediately east of Suboperation M, was excavated with the purpose of better understanding the row of chert blocks observed in Suboperations E through H. This unit was excavated in two lots to a depth of 32 centimeters below surface. Fill like material was recovered from both lots, such as ceramic and lithic pieces. At the terminal elevations of Lot 2 the remains of a plaster surface were observed in the southern section of the unit. The plaster remains in this unit were at the same height below surface as the plaster step mentioned for Suboperation M. None of the plaster remains in Suboperation L exceeded 20 centimeters in thickness.

Suboperations K, N, O, and P

These units are discussed together due to their location on the southwest section of the mound. The excavations represented by Suboperations K, N, O and P were conducted to determine the extent of the platform wall on the western section of the mound, define a southwestern structural corner, and explore interior features. This section of the mound was at a lower elevation than that observed on the eastern section, with a difference in vertical measurement of 33 centimeters. Furthermore, soil cover was markedly thinner in this section of the mound.

Suboperation N, a 1 x 1 meter unit, was excavated with the purpose of locating the southwest structural corner. This unit was excavated in two lots to a depth of 29 centimeters below surface. Large limestone blocks were removed from this unit, with measurements ranging from 35 x 45 centimeters and 33 x 55 centimeters, all with a thickness between 18 and 20 centimeters. Most likely these stones were the remains of the platform wall and southwest structural corner, which was not observed in a preserved state in this unit. The identification of the southwest structural corner was estimated according to base stones, which were in place. Based upon this estimation the southwest corner extended approximately 55 centimeters northwestward from the eastern side, and 40 centimeters from the southern side of the unit. A section of the platform wall was

observed intact in the eastern section of the unit, and similar to preserved sections of the platform wall on the eastern side of the mound. However, the wall stones observed in this unit did not seem to be modified. Inset from the preserved section of the platform wall in this unit were chert cobbles similar to those observed on the eastern side of the mound.

Suboperation K, a 2 x 2 meter unit, was excavated in four lots. Lots 1 and 2 were excavated to a depth of 29 centimeters below surface. Lot 1 showed a similar pattern of a line of chert stones inset from the top of a platform wall. These blocks were in two courses. However, stones of similar measurements were removed from the soil during excavation, which leaves open the possibility that in antiquity these stones were arranged in three courses. The terminal elevations of Lot 2 showed remains of a plaster surface. This surface was not in a preserved state, and only plaster fragments and fill material remained. The remainder of the platform wall was also observed, with base stones below. These stones extended from the northwest section of the unit to the eastern edge of the unit in a continuous line. The platform wall rose 30 centimeters above these stones, and extended from the preserved section of the wall in Suboperation N for approximately 1.45 meters, terminating abruptly 55 centimeters from the eastern edge of the unit. The stones observed in this section of the wall had average an average measurement of 25 x 47 centimeters, and did not appear to be modified. However, due to the lower elevation of this section of the mound it is possible that they were simply more weathered than those observed in the eastern section. The space between the termination of the platform wall and the eastern edge of Suboperation K was investigated in Lot 3, which was excavated to a depth of 91 centimeters below surface. This lot showed an interior continuation of the platform wall for 54 centimeters northeast, along with an interior plaster surface. The excavation of Lot 3 gave a clearer picture of the base stones as well, which were square and similar to those previously mentioned in Suboperation D, Lot 4.

An interesting feature was observed in the northwestern section of Suboperation K associated with the platform wall and patio remains. A plaster surface was observed sloping at a 45 degree angle from the middle of the platform wall, which leveled out for approximately one centimeter at the termination of the slope. This surface measured 38 x 47 centimeters, and was investigated in Lot 4. The sloping surface was bisected and the eastern section was excavated to a depth of two centimeters below the terminal elevations of Lot 2. The excavation of this lot showed that the sloping plaster feature was constructed of (now soft) plaster, with fill material present in the two centimeters below. The function of this feature is not well understood. It is possible that it served aesthetic or practical purposes, or both. The lower elevation of this section of the mound suggests that it may have been constructed to facilitate the quick removal of water.

Suboperation O, a 1 x 1 meter unit, was excavated in two lots to a depth of 55 centimeters below surface. In this unit a continuation of the platform wall was observed, which began 1.3 meters southeast of its termination in Suboperation K. This section of the wall was better preserved than sections noted in Suboperations E and G. The height of this

section of the wall was 50 centimeters above the base stones, which continued from Suboperation K. It is likely that this 1.3 meter of space represents another entrance to the mound, as evidenced from the excavation of Suboperation K, Lot 3.

Suboperation P, a 1 x 1 meter unit, was excavated to further investigate the interior plaster surface and the inward extension of the platform wall observed in Suboperation K, Lot 3. This unit was excavated in three lots to a depth of 50 centimeters below surface. Large limestone blocks were observed in Lots 1 and 2 wedged into the west and east walls of the unit. Numerous tree root inclusions were also observed. The two largest of stones measured 30 x 43 centimeters, with a thickness of 12 centimeters, and 35 x 50 centimeters, with a thickness of 10 centimeters. The function of these stones or their original location on the mound is not certain. Numerous tree root inclusions were also observed. At the terminal elevations of Lot 3 was observed a well preserved plaster surface, which was present throughout the entire unit, and joined up with the surface observed in Suboperation K, Lot 3. The northeast extension of the platform wall observed in Suboperation K did not continue into this unit.

ARTIFACTS

The ceramic analysis for Operation 11 was conducted by Lauren Sullivan (PfBAP ceramicist). Ceramic data show that Operation 11 is dated to Tepeu 2 and 3 (Late and Terminal Classic), with ceramic types such as Achote Black, Subin Red, and Tinaja red. Ceramics from this time period were collected from all units, with the exception of Suboperation M.

Lithic analysis has not yet been completed for Operation 11. Thus, a discussion of lithic artifacts will be based upon observations of items collected during excavation. A few large biface and biface fragments were collected. A small number of obsidian blade fragments were collected. One groundstone item was collected, and has been tentatively interpreted as a spindle whorl.

CONCLUSION

The objectives stated at the beginning of this report were met with varying degrees of success. The full accomplishment of these objectives was hindered by time and safety constraints, such as a large number of trees present over half of the mound.

Stratigraphic control was established in Suboperation A. Four soil layers were identified at Operation 11. The excavation of the remaining 15 suboperations showed that these four layers persisted throughout the mound. In addition, the findings of suboperation A, concerning soil association with cultural remains held relatively constant. The exception being that it was later realized that the second soil layer was associated with the chert block foundation braces.

The objective to determine the situation of the mound in terms of a front and backside was also met with a great deal of success. On the north side of the mound a platform foundation was observed built on top of the bedrock surface. Excavation on the south side of the mound yielded different results, consisting of a rectangular limestone block platform wall, two entrances, and a plaster surface south of the platform wall.

The outer and inner perimeter of the mound was well established through excavation, with the only difficulty being the blown out southwest structural corner, and the heavily eroded state of large parts of the platform wall. Three structural corners were identified in Suboperations G, H, and N, which allowed for the estimation of the northwest structural corner. The outer perimeter was identified in Suboperations A, D, and G, which showed the platform foundation extended outward from the platform wall for approximately one meter.

The analysis of ceramic artifacts showed that Operation 11 was built and occupied during the Late Terminal Classic Period. This is further evidenced by the excavation of Suboperation D, Lot 6.

The definition of a patio/activity area was not completely successful. South of the platform wall a plaster surface was identified in Suboperations D, E, F, G, and K. This surface was not identified in Suboperations N, O, and Q. Most likely this was due to root action and erosion, both of which were observed in those units. Unfortunately, time did not permit the investigation of the southward extent of this surface.

Interior architecture was well investigated on the eastern side of the mound. Excavation showed interior features oriented northeast to south east, and northwest to southwest. It is not certain whether these different structural orientations define separate structures, or extensions of a single structure. South of this architecture was a lower plaster surface, which extended to the eastern entrance of the mound.

The western side of Operation 11 was not fully investigated due to numerous large trees covering this section of the mound. Interior architecture was only investigated in Suboperation K, Lot 3, and Suboperation P. An inward extension of the platform wall was observed, along with an interior plaster surface. It is possible that these excavations showed the entrance and interior of a room.

At this time, one thing can be stated with a great deal of certainty concerning interior architecture. The chert blocks mentioned numerous times in this report were foundation braces for a perishable structure, as evidenced by Suboperations C, D, E, F, G, H, K and N.

REFERENCES CITED

Abrams, Elliot

1994 *How the Maya Built their World: Energetics and Ancient Architecture.*
University of Texas Press, Austin.

Ferries, L.C.

2002 Site Formation and Occupation History of the Medicinal Trail House Mound Group at the Program for Belize Archaeological Project, Belize. M.A. thesis, Department of Anthropology, Division of Research and Advanced Studies of the University of Cincinnati.

Hyde, D.M., S. Fischbeck, and R. Trachman

2006 Report of Excavations At The Medicinal Trail Site For The 2005 Season. In *The Programme for Belize Archaeological Project: Report of Activities from the 2005 Field Season*, edited by Fred Valdez, jr., pp.7-16. Occasional Papers, Number 6, Mesoamerican Archaeological Research Laboratory. The University of Texas at Austin.

Hyde, D.M.

2005 Excavations At The Medicinal Trail Site, Operation 7: Report of the 2004 Season. In *The Programme for Belize Archaeological Project: Report of Activities from the 2004 field Season*, edited by Fred Valdez, jr., pp. 7-13. Occasional Papers, Number 4, Mesoamerican Research Laboratory. The University of Texas at Austin.

Littman, E.R.

1967 Patterns in Maya Floor Construction. *American Antiquity* 4: 523-533.

EXCAVATIONS OF A DEPRESSION (OP. 10), AT THE MEDICINAL TRAIL SITE: REPORT OF THE 2006 FIELD SEASON

Jeff Brewer, The University of Cincinnati

INTRODUCTION

The Medicinal Trail site, which covers an area approximately 500 meters in diameter, is located a few kilometers northeast of the major site of La Milpa and east of the R.E.W. Adams Archaeological Research Facility. Several terraces and house mounds in the southern portion of the site had been investigated in 2001 under the guidance Farnand (2002) and Ferris (2002); and the three courtyards, associated structures, and immediately surrounding areas that comprise Operation 7 were partially excavated in 2004 by Hyde (2005). In addition, a portion of the depression discussed below was excavated during the 2004 season by Me-Bar (2005). During the 2006 season, an isolated house mound located to the southwest of the depression was excavated under the supervision of Whitaker (this volume) while Hyde (Hyde and Atwood, this volume) continued excavations at Operation 7.

LOCATION AND DESCRIPTION

The depression (Op 10) is located approximately 40 meters northeast of Structures 1-6 and 20 meters south of Structure 7 and Operation 7 (Figure 1). It is roughly ellipsoidal in shape, with long and short axes of 15 and 10 meters respectively, and a depth of nearly 1.5 meters at its deepest point relative to the rim (Me-Bar 2004). The topography immediately surrounding Op 10 exhibits subtle variations. To the southeast, there is a gentle grade toward the rim of the depression. On the western side, the terrain slopes generally in the direction of the depression, and appears to converge into a shallow drainage about 15 meters north of the depression's edge. During his 2004 excavations, Me-Bar identified what he termed a "low platform" with dimensions of three meters N-S and three meters E-W, on the northern rim of the depression. As mentioned above, Op 7, Structure 7, containing a house mound with cut rock alignments visible at the surface, is located approximately 20 meters to the north of the depression. The terrain between Ops 10 and Structure 7 of Op 7 is flat (Me-Bar 2004).

HYPOTHESES AND OBJECTIVES

Following excavations in 2004, Me-Bar noted similarities in both shape and dimensions between this depression and another, located at the south end of the site of Dos Hombres. He concluded that the Dos Hombres depression was used first as a limestone quarry, then as an aguada, and finally as some sort of ritual site (Me-Bar 2005). The theory of its use for ritualistic purposes was based on the presence of an artificial cave at the eastern edge of the depression. Since no such "cave" exists at the Medicinal Trail depression, the possibility of this site being used ritualistically was discounted, and Me-Bar's pre-excavation assumptions were that limestone had been quarried from it and that it had then

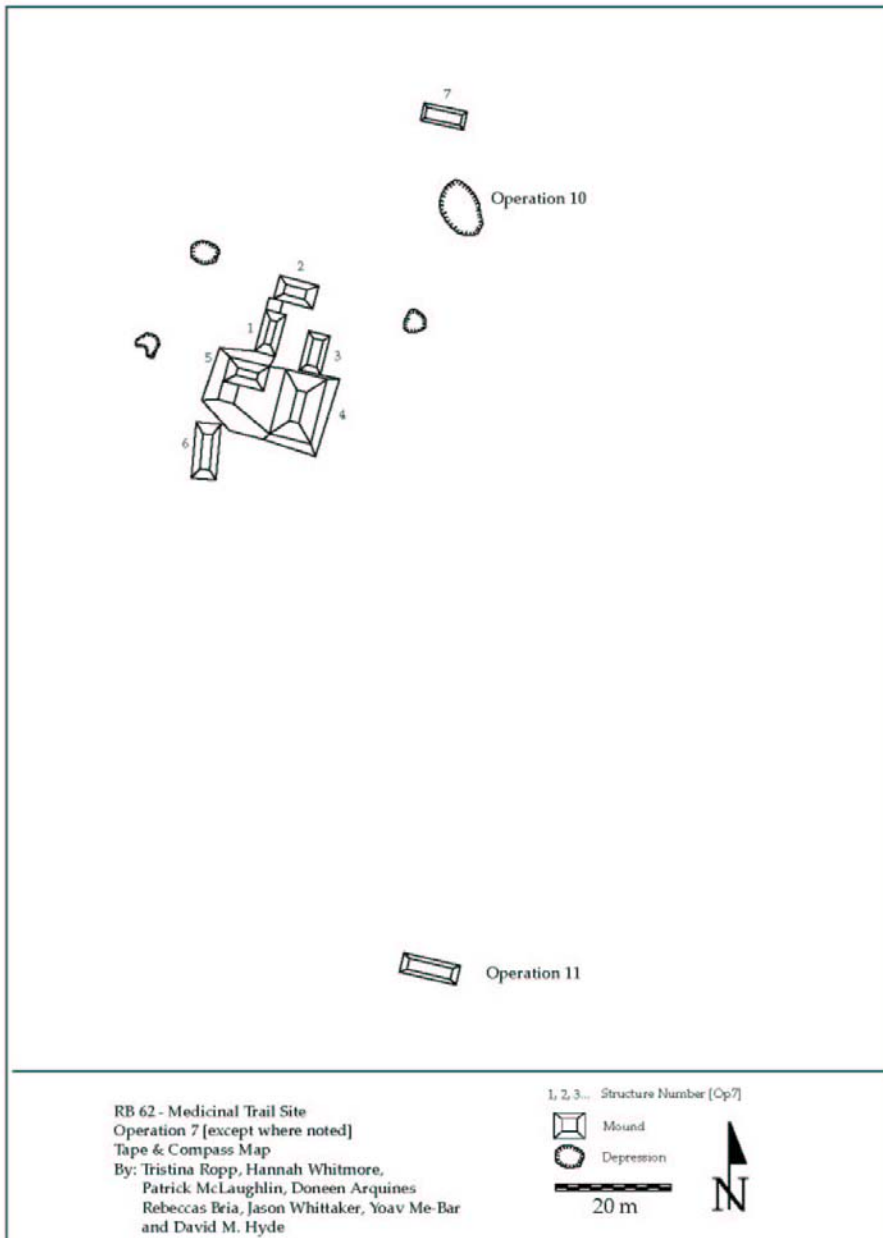


Figure 1. Map of the Medicinal Trail Site, Operations 7,

been used as an aguada. The primary objective of his excavations was to prove this hypothesis. Continuing excavations at this depression (Op 10) this season, the purpose of my work was to build upon Me-Bar's initial efforts by excavating as much of the depression as possible within an extended six-week field season (Figure 2). Keeping in mind the previous excavations, my goals were as follows: to excavate the majority of the site down to the bedrock layer in an attempt to gain a better understanding of the rough dimensions of the depression; to see if the bedrock had been artificially modified ("carved") in any way to aid inflow channeling; to determine whether or not the bedrock has been overlaid with a clayey sealant to reduce its porosity and aid in water collection; to compile artifact densities (both lithic and ceramic) within the depression; to recover multiple soil samples to test for botanical contents and pollen-analysis; to confirm or refute Me-Bar's discovery of a possible "post-hole" in the northeastern edge; and finally to re-assess and confirm Me-Bar's primary objectives.

Prior to excavations, a grid was established at Operation 10 to control and track the placement of excavation units (subops). The starting point for the grid, or its 100/100 coordinate, was the same point used by Me-Bar during the 2004 season. This grid central point is located on the level terrain between Operations 7 and 10, on the northwest side of the depression, and is oriented 20° east of north. This alignment was probably used by Me-Bar to tie into the same grid established at Op 7. After the grid was established at Op 10, each subsequent subop was given a coordinate based on the location of the southwest corner of the unit. For example, the southwest corner of Subop A is ten meters south and four meters east of the grid central (100/100) point, so its coordinate on the grid would be S90E96.

EXCAVATIONS

Subop A (S90E96): This initial subop was a 2 x 2 m unit opened in the southeast quadrant of the depression, nearest to what we determined to be the bottom of the depression. The function of this unit was to establish a basic soil stratigraphy profile for the site, as well as to gain a preliminary understanding of the amount of ceramic and lithic material present. This unit contained five lots, with the first four terminating arbitrarily at soil changes and the fifth at bedrock. Soil composition ranged from the dark brown/gray humus layer of Lot 1, through the medium dark grays of Lots 2-4, to the light gray/whitish marl of Lot 5. A moderate amount of lithic and ceramic fragments was collected from Lot 1, in addition to a small amount of charcoal and lithic material that appears to have been fired. The density of lithic and ceramic material present in this subop increased with depth until Lot 4, where ceramic density decreased. Interestingly, a noticeable increase in lithic cores was encountered in Lot 4 which, coupled with decreased ceramic material, possibly indicates the use of these lithic cores as tools for quarrying the limestone. Evidence of what could be considered an unnaturally modified "trench" in the limestone of Lot 5 also lends credence to this possibility. Gravel, fist-sized cobbles, and an exposure of small boulders in both the northwest and southeast

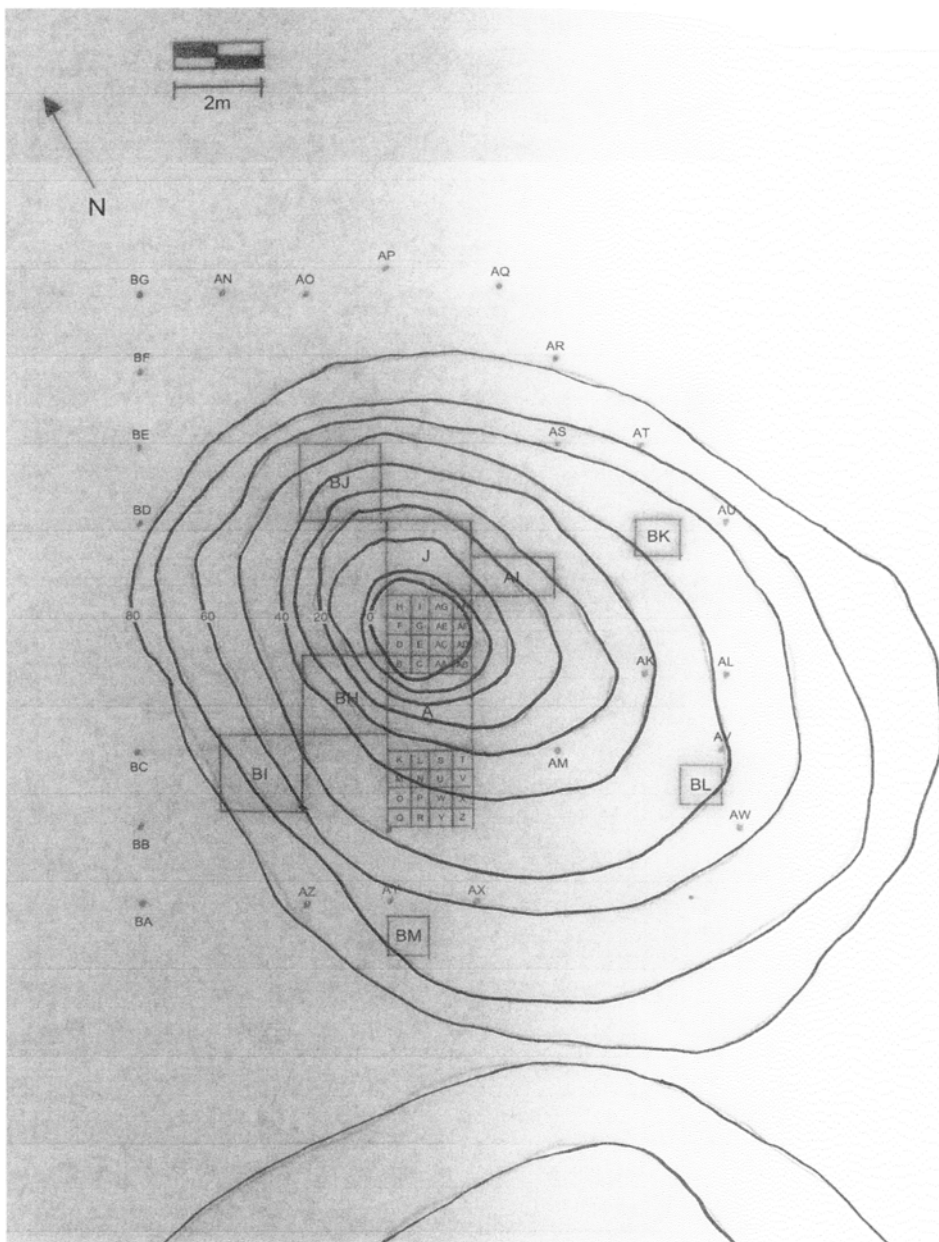


Figure 2. Contour map of the Operation 10 with excavation units indicated.

corners were also present throughout Subop A, in addition to heavy chert discard and fired lithics. The first of several small obsidian flakes uncovered within the depression this season was collected from Lot 2. Its presence could possibly be attributed to in-washing from a nearby area such as Op 7, or the result of cast-off from obsidian working at or near the depression. A three-liter soil sample was extracted from Lot 5, and was subjected to flotation analysis in order to discover its botanical contents. The lowest depth of Subop A was 53 cm, with its depth increasing from south to north due to the unit's location on a slope.

Subops B (S92E96), C (S92E95.5), D (S92.5E96), E (S92.5E95.5), F (S93E96), G (S93E95.5), H (S93.5E96), and I (S93.5E95.5): These subops comprised a series of eight 50 cm (0.5 m) x 50 cm units that formed a 1 x 2 m pit located between Subops A and J. The units were divided into lots that terminated arbitrarily at depths of +/- 10 cm. Subops B, C, D, and E each contained five lots, terminating at bedrock at an average depth of 89.75 cm. Subops F, G, H, and I each contained only four lots due to their location in a shallower portion of the depression, and terminated at bedrock at an average depth of 82 cm. Due to the extremely high density of lithic and ceramic materials collected from Subop A, these units were excavated in 50 x 50 cm blocks in order to establish very fine control over artifact density. A secondary objective was to attempt to isolate a possible activity area within the site. My hypothesis was that, by comparing the artifact densities of these subops with Subop A, it would be possible to theorize that we were excavating either closer to or further away from a particular area of the site where certain activities resulting in the presence of these artifacts might have been taking place. Subop B, located directly adjacent to Subop A and, along with Subop C, the furthest south of this series of units, contained a moderate density of lithic and ceramic material and a cobble-sized worked lithic core. Subop C held only small amounts of lithics and ceramics throughout, but also contained five small charcoal fragments at a depth of 46 cm. Even fewer ceramic and lithic fragments were collected from Subop D, indicating that we might be proceeding away from a possible area of activity as we excavated from south to north. This trend continued in the remaining subops (E-I), with little or no material recovered from these units.

Subop J (S94E96): This unit contains five lots, with Lots 1 and 2 measuring 2 x 2 m and Lots 3-5 measuring only 1 x 2 m. This anomaly is due to the fact that once we reached a depth of 18 cm, we realized that we were excavating into backfill from Me-Bar's 2004 excavation of Subop AB. As a result, we halted excavation in the northern half of the unit and continued to excavate down to the bedrock in the southern portion. In relation to our other subops, Subop J was located contiguous to subops H, I, AG, and AH on their northern sides. The total depth of the 1 x 2 m southern half of the subop was 97 cm, with the first four lots terminating arbitrarily at soil changes and the fifth at bedrock. The soil ranged from the humus layer, to dark brown, to a less-compacted dark gray, and finally to a loose light gray. This subop contained minor amounts of lithic and ceramic material similar to that of Subop D and, similar to our results from subops B-I, we also

encountered a marked decrease in densities as we proceeded from south to north within the unit. However, this decrease could be due, at least in part, to our encountering of Me-Bar's backfill in the southern half of the subop. Interestingly, a difference was also noticeable in both ceramic and lithic densities as we excavated deeper into the unit, to the point that an extremely low number of materials were collected from Lots 4 and 5. Lot 5, with a depth of 97 cm, proved to be the lowest point excavated in the entire depression, and the bedrock in this area continued to exhibit signs of possible quarrying. The continued presence of charcoal and another mid-sized obsidian flake was also observed within Subop J.

Subops K (S89.5E96), L (S89.5E95.5), M (S89E96), N (S89E95.5), O (S88.5E96), P (S88.5E95.5), Q (S88E96), and R (S88E95.5): These subops were a series of eight 50 cm (0.5 m) x 50 cm units that formed a 1 x 2 m trench adjacent to the south side of Subop A. The units were divided into lots that terminated arbitrarily at depths of +/- 10 cm. Subops K, L, M, and N each contained four lots, terminating at bedrock at an average depth of 41.25 cm. Subops O, P, Q, and R each contained only three lots due to their location on a shallower upslope of the depression, and terminated at bedrock at an average depth of only 31.25 cm. Like Subops B-I, these units were excavated in 50 x 50 cm blocks in order to establish very fine control over artifact density. We expected to encounter densities either equivalent to or exceeding those of Subop A, and in Subops K, L, M, and N we did encounter densities very similar to our initial subop. A high concentration of charcoal was noted in Lots 2 and 3 of Subop K, as well as in Lot 2 of Subops M and N. In addition, our third small obsidian flake was collected from Subop K, Lot 3, at a depth of 34 cm from the surface. Much lower amounts of lithic and ceramic material were collected from subops O, P, Q, and R as we excavated from north to south, and densities also continued to decrease with depth within each unit, similar to our findings in Subop J. These results were not altogether unexpected, however, as we had now reached what appeared to be the rim of the depression and were excavating away from it. If we continue to assume that this southern rim of the depression represents a probable activity area (based on density of artifacts observed and collected), then our continually decreasing artifact densities away from this area, both to the north and to the south, are to be expected.

Subops S (S89.5E95), T (S89.5E94.5), U (S89E95), V (S89E94.5), W (S88.5E95), X (S88.5E94.5), Y (S88E95), and Z (S88E94.5): This series of eight 50 cm (0.5 m) x 50 cm units that formed a 1 x 2 m pit adjacent to the south side of Subop A and the eastern side of Subops K-R. The units were divided into lots that terminated arbitrarily at depths of +/- 10 cm. Subops S, T, U, and V each contained four lots, terminating at bedrock at an average depth of 46.25 cm. Subops W and X, located on the shallower slope, contained three lots each and ended at the bedrock layer at an average depth of 37 cm. Due to their location in an even more shallow area of the site, Subops Y and Z were composed of only two lots, concluding at an average depth of 25 cm from the surface. Like the previously excavated 50 x 50 cm units, the purpose of opening subops this size

was to establish greater control over artifact densities. Although Subop S contained amounts of lithic and ceramic material comparable to Subops K-M, densities declined markedly through Subops T-Z. A small amount of lithic material and very few to no ceramic remains were recovered from these units, and even these low densities decreased from west to east within this series as we continued to excavate across this slope on the south rim of the depression. We continued to observe small charcoal fragments throughout these units, again seeming to indicate some sort of localized burning at the site. A 1.5 liter soil sample was also extracted from each lot of Subop S for later pollen analysis. Depending on the quality of the samples, the results of this study could potentially help determine seasonality of site occupation, the presence or absence of agricultural practices or products, and plant-related activity areas within the site.

Subops AA (S92E95), AB (S92E94.5), AC (S92.5E95), AD (S92.5E94.5), AE (S93E95), AF (S93E94.5), AG (S93.5E95), and AH (S93.5E94.5): These subops were a series of eight 50 cm (0.5 m) x 50 cm units that formed a 1 x 2 m trench located between Subops A and J and adjacent to the east side of Subops B-I. Like the previously excavated units of this size, each subop was divided into lots that terminated arbitrarily at depths of +/- 10 cm. Each unit contained four lots, terminating at an average depth of 45.75 cm from the surface. These subops were opened to connect Subops A-J, resulting in a 2 x 6 m trench excavated down to bedrock in the center of the site. The reason for opening subops of this size was again to establish greater control over artifact densities, with the expectation that we would encounter artifact amounts similar in quantity to those of Subops B-I. What we observed was fairly high fluctuation in both lithic and ceramic densities throughout this series of subops, ranging from little or no recoverable material in some lots, to relatively high densities of each in others. In addition, no measurable differences were recorded in the densities relative to depth or direction within the subops comprising this 1 x 2 m trench. A small obsidian flake, the fourth recovered in our excavations, was collected from Lot 2 of Subop AA, as well as a large biface from Subop AF, Lot 4. The presence of the biface seems to support our hypothesis that one of the possible uses of the site was as an area for working tools. A 1.5 liter soil sample was collected from each lot of Subop AG for pollen analysis.

Subop AI (S94E94): This is a 1 x 2 m unit located contiguous to the southern half of Subop J on its eastern side. The subop contained four lots, terminating arbitrarily at soil changes, and with an average depth of 15.25 cm. The unit sloped dramatically downward from east to west, with maximum depths of 61 cm in the eastern half and 97 cm in the western half. The presence of several large roots and root holes, averaging 11 cm in diameter, were noted throughout this unit due to its proximity to a large ceiba tree in the southeast portion of the site. These roots not only complicated work within this unit, but their presence prevented the possibility of further excavation in this area of the site. This subop was opened to expand previous excavations to the eastern side of the site, and to track material concentrations in this direction. A fair amount of lithic and ceramic sherds were collected from the unit, with the notable exception of a total lack of ceramic

material in Lot 1. A relatively sizeable amount of charcoal was observed throughout, in addition to several small shells and shell fragments. Both partial and complete shells were observed in a few other subops as well, and appear to be remains of terrestrial snails. Of particular interest within this subop was a small bone (8 cm in length) collected from Lot 3 at a depth of 31 cm. Although yet to be analyzed it appears to be from a wild turkey or small mammal native to the area.

Subops AJ (S88E96), AK (S90E90), AL (S90E88), AM (S92E92), AN (N102E100), AO (N102E98), AP (N102E96), AQ (N101.5E94), AR (N101E92), AS (S98E92), AT (S98E90), AU (S96E88), AV (S90E88), AW (S88E87.5), AX (S86E94), AY (S86E96), AZ (S86E98), BA (S86W102), BB (S88W102), BC (S90W102), BD (S96W102), BE (S98W102), BF (S100W102), and BG (N102W102): These subops were a series of 24 postholes opened around the perimeter of the entire site (depression) in order to determine future locations for the placement of 1 x 1 m test pits. Our goal was to expand several of the postholes, based on the highest material densities, into these small test units. The test pits, when opened and analyzed in relation to one another and the rest of our excavations, would then help us to see where certain activities, such as the working of tools, had possibly occurred within the site and where further investigation may be necessary. The postholes ranged from 23 – 80 cm in depth, with an average depth of 58.9 cm and an average diameter of 26.7 cm. The units terminated at root or rock impediments, the sterile, powdery marl layer, or, in some cases, bedrock. Lithic and ceramic material densities ranged from very low to high, with no apparent pattern between the locations of the postholes and their densities. Findings of note within these subops were a mid-sized biface from Subop AP and a small obsidian flake from Subop AU. Subop AP was located in the north end of the site between Operations 7 and 10, and the biface discovered here indicates this could have been an area for tool working. Interestingly, Me-Bar (2005) encountered a huge amount of debitage in this area, as well as a possible stone platform, during his excavations in 2004. It is possible that this biface and lithic debitage are contemporaneous, and that the stone platform was the setting for tool working at the site.

Subop BH (S90.5E98): Subop BH was a 2 x 2 m unit located contiguous to the western side of Subops A, B, D, and F. The unit contained four lots, with arbitrary terminations every 10 cm, and bedrock sloping downward from south to north and east to west. The depth in the southwest corner was 33 cm. This subop was opened in order to determine the spatial extent of a layer of cobbles exposed on the western side of Subops A, B, D, and F. This cobble layer was unique to the site, and we hoped that excavating this unit would help us better understand its presence and possible function. Me-Bar's previous work at the site had uncovered "some sort of rock ledge" (Me-Bar 2005) with a pile of collapsed rocks very close to this subop, and we excavated under the assumption that these cobbles might be connected to his findings. Unfortunately, the fist-sized stones were fewer in number and more random in distribution than we had expected, and it remains unclear as to whether or not their presence was merely the result of rock fall,

other common action, or collapse from a platform or ledge located near the western rim of the depression. A moderate amount of lithic and ceramic material, similar to adjacent subops, was collected from the unit, and more shell was observed in Lots 1-3.

Subop BI (S88.5E100): This was a 2 x 2 m unit located to the southwest of Subop BH, near the southwest rim of the depression. The unit contained three lots, terminating arbitrarily at +/- 10 cm, and had a depth of 27 cm. The purpose of this subop was to examine artifact densities in this area of the site, as well as to partially connect our 2 x 7 m trench to a portion of Me-Bar's prior work. A large amount of lithic, and an even larger amount of ceramic material was collected from the unit, notably increasing with depth. Multiple bifaces and another small obsidian flake were also collected.

Subop BJ (S96E98): Subop BJ was a 2 x 2 m unit located to the northwest of Subop J. This deep unit included five lots with arbitrary terminations every 10 cm, and had a total depth of 92 cm in its southwest corner. The unit sloped sharply downward from north to south, due to its location on the northwestern slope of the depression. This subop was opened in an attempt to locate a second "post hole" related to Me-Bar's discovery a few meters to the east. If the "compact, cemented structure" (Me-Bar 2005) did serve as a support for some sort of overhang, then a second one would have been needed, and, along with Me-Bar (personal communication 2006), this is where we determined its most likely location to be. However, after completely excavating the unit we found no evidence of anything resembling his previous finding. A very high density of lithic material and a moderate amount of ceramic sherds were collected from the unit, similar to Me-Bar's findings in this area of the site. If we agree with Me-Bar that his discovery was in fact a posthole, and that it supported a cover for a work area in this portion of the site, then the large amount of lithic discard collected here during both excavations could possibly be explained. Even if the "structure" was simply an example of fired clay surrounding a root that was burned out, which is the more likely explanation, the possibility remains that the large amount of lithic material in this area still resulted from tool working.

Subops BK (S95E90), BL (S89E89), and BM (S84.5E96): These were 1 x 1 m units opened with the goals of identifying possible activity areas located around the rim of the depression (based on artifact densities) or evidence of unnatural modifications to the bedrock, indicating channeling or quarrying. Each contained four lots with arbitrary terminations at +/- 10 cm in depth. Subops BK and BL each had a maximum depth of 32 cm, and were located on the eastern and northeastern rims of the depression respectively. Subop BM had a maximum depth of 46 cm, and was located on the southern edge of the depression, representing the farthest south either Me-Bar or myself had excavated at the site. Both lithic and ceramic densities increased as we excavated from east to south around the depression rim, from Subop BK, to BL, and finally BM. Unfortunately, densities were not high enough within any of the units to indicate probable areas of high activity around the edges of the site. No strong evidence of channeling or quarry scars was apparent within the bedrock of these subops.

INTERPRETATIONS AND CONCLUSIONS

This season's excavations at RB62, Operation 10 have provided us with a clearer picture of the depth, composition, and probable function of the depression. Our goals were to further examine Me-Bar's hypotheses concerning the use of the depression, as well as build upon his previous excavations at the site and attempt to clarify any remaining questions surrounding the role of the depression in an ancient Maya agricultural setting.

Following our season of excavations, the primary assumption that limestone had been quarried from the depression prior to its use as an aguada appears to be in question. The bedrock we encountered exhibited no irrefutable evidence of being "carved" or quarried. Although apparent cut marks or quarry scars were absent from our excavations, we cannot rule out the possibility that at least a portion of the depression did function as a quarry for local building material. Perhaps we were not able to recognize the evidence, or it was located in an unexcavated area of the site. Me-Bar's admitted failure to locate a definitive route for water inflow also appears to raise some questions regarding the use of the depression as a reservoir. Without evidence of a channel for water to flow into the depression, he argues that a question mark must remain over its use as a water collection feature. Recent work done in this area of the central Maya lowlands, however, offers another explanation. Estella Weiss-Krejci and Thomas Sabbas' (2002) examination of similar depressions as water storage features in this area of northwestern Belize included theoretical input-output calculations which showed that these features could have held enough rainwater year-round, without water channeling in, to supply water to the local population. Although our limited excavations, in the form of 1x1 m test pits, also failed to yield any evidence of a channel into the depression, this certainly does not mean that the site did not serve as a reservoir. The presence of a compacted clayey layer overlying the bedrock, possibly serving as a layer of sealant to aid in water storage, further supports this notion.

In addition to excavating the majority of the depression down to bedrock in order to gauge its depth and extent, we were able to collect a substantial amount of lithic and ceramic material for evaluation and possible future density mapping. Although lithic analysis is still forthcoming, our ceramic samples were analyzed by project ceramicist Dr. Lauren Sullivan (UMass Boston). The majority of our findings date to the Late-Terminal Classic (Tepeu 2-3), and consist mainly of eroded body sherds, jar fragments, and partial rims. A few examples from the Early Classic (Tzakol) were collected, the majority of which were basal flanges and rim forms. Multiple fragments with possible Late Preclassic dates were also recovered, and included lid and rim fragments, sherds, and an eroded ring base. The dates from these findings coincide with a large portion of the ceramics from nearby Op 7, which we had expected.

After a preliminary evaluation of the results of our excavations, as well as Me-Bar's (2005), it appears that the reservoir served in some capacity as both a water reservoir and an area for working lithic material, as well as possibly a trash dump (or the wash-in of

materials after abandonment). Its close proximity to surrounding structures, the necessity of rainwater collection and storage, and the presence of what appears to be a layer of sealant over the bedrock layer point to its use as a water reservoir. The high density of lithic debitage, tool fragments, and cores throughout the site, as well as the possible remains of a collapsed platform in an area where a large amount of lithic material was collected, support the idea that the site was used, at least in part, for stone working. Finally, according to Weiss-Krejci and Sabbas, high sherd and debitage densities throughout these sites point to their possible use as trash dumps. A closer examination of our data (including the results of our lithic analysis and soil samples), coupled with future excavations of similar sites, will be necessary in order for us to best understand the role of these depressions in ancient Maya society.

REFERENCES CITED

Farnand, D.M.

2002 *Agricultural Formation Histories of Prehistoric Terraces of the Medicinal Trail Site, Northwestern Belize*. M.A. thesis, Department of Anthropology, Division of Graduate Studies and Research of The University of Cincinnati.

Ferries, L.C.

2002 *Site Formation and Occupation History of the Medicinal Trail House Mound Group at the Programme for Belize Archaeological Project, Belize*. M.A. thesis, Department of Anthropology, Division of Research and Advanced Studies of The University of Cincinnati.

Hyde, David M.

2005 Excavations at the Medicinal Trail Site, Operation 7: Report of the 2004 Season. In *Programme for Belize Archaeological Project: Report of Activities from the 2004 Field Season*, edited by Fred Valdez, Jr., pp. 7-11. The University of Texas at Austin, Austin, Texas.

Me-Bar, Yoav

2005 Excavations in a Depression at the Medicinal Trail Site: 2004. In *Programme for Belize Archaeological Project: Report of Activities from the 2004 Field Season*, edited by Fred Valdez, Jr., pp. 7-11. The University of Texas at Austin, Austin, Texas.

Weiss-Krejci, Estella and Thomas Sabbas

2002 The Potential Role of Small Depressions as Water Storage Features in the Central Maya Lowlands. *Latin American Antiquity* 13: 343-357.

BALLCOURT AND RESIDENTIAL TERRACE INVESTIGATIONS AT CHAWAK BUT'O'OB, BELIZE: REPORT OF THE 2006 RIO BRAVO ARCHAEOLOGICAL SURVEY

Stanley Walling, The University of Texas at Austin
Peter Davis, Montclair State University
Jonathan Hanna, Montclair State University
Leah Matthews, New York University
Nahum Prasarn, Renaissance School, Montclair NJ
Christine Taylor, University of Southern Maine
Erol Kavountzis, University of Florida

INTRODUCTION

Archaeological excavation and mapping were conducted at Chawak But'o'ob, Belize by the Rio Bravo Archaeological Survey during June, 2006. This ancient community's settlement and topographic characteristics were considered in a recent symposium (Walling and Davis 2006) and are discussed in the research reports of the 2004 and 2005 investigative seasons (Walling et al. 2005; Walling et al. 2006).

This season's field investigations in the residential terraces of Group B and the ballcourt complex added to our understanding of the architectural complexity of these two sections of the site. The ballcourt investigations, in the southwestern section of Chawak But'o'ob, identified several previously unseen structures, exposed more of the highly broken terrain surrounding the ballcourt through clearing of heavy growth, and clarified the characteristics of several platforms that were previously seen, but not examined in detail. Excavation in the central section of the eastern structure and along the east-west axis of the playing alley revealed more of the stratigraphy in these two locations.

Investigations in the residential terraces of Group B, the most densely occupied of the ancient residential terrace complexes at the site, continued the investigation of Room 2 of Foundation Brace B begun in 2005.

Excavations and other investigations at the ballcourt complex, the newly designated Group H, were overseen in 2006 by Leah Matthews. Matthews was assisted by Christine Taylor and Erol Kavountzis. Residential Terrace excavations were overseen by Jonathan Hanna, with the assistance of Peter Davis. Nahum Prasarn, the Project's Survey Director, was responsible for mapping topography in the ballcourt and residential terrace areas and the terrain in areas to the east. Peter Davis, the RBAS' Field Director assisted the Director, Stanley Walling, in overseeing this season's field research.

2007 INVESTIGATIVE GOALS

The investigative effort in 2006 was fairly evenly divided between the ballcourt complex and the residential terraces of Group B. The research goals for this season were to:

- Better define the construction history of the ball court through excavation of the eastern ballcourt building and expansion of the 2005 playing alley test units
- More fully define the size and extent of the ballcourt group through additional clearing and structure mapping beyond the two ball court buildings
- Better delineate the construction history of Foundation Brace B in the residential terraces through excavation of additional test units
- Obtain better definition of the uppermost terrace and the access it provided to the central patio group on top of the Group B knoll

SURVEY IN GROUPS B AND C

Total Station recording or tape-and-compass mapping, or both, defined topographic features and recorded additional structures in the Ballcourt complex and on the Group B knoll. Tape and compass mapping at the apex of the Group B knoll documented the presence of a previously unseen collapsed wall at the northwest corner of the patio there. This low stone wall appears to have been positioned to control access to the patio. In order to gain access to the central section of the patio, visitors arriving from the northwest would have been directed through a narrow opening adjacent to Structure B-67. If this wall had a perishable upper section, it likely also functioned to restrict visibility of activities in the patio on the part of those living a short distance away on the well populated stacked residential terraces of Group B. Additionally, tape-and-compass measurements were taken of a newly identified cobble platform at the end of the large sloping terrace that leads up to the apex of the Group B knoll. This platform, which may have functioned as a formal entranceway to the patio, will bear further examination in a subsequent field season.

In the ballcourt area, Total Station recording with a Nikon DTM 330 documented more of the irregular karstic terrain in the region to the west and south of the ballcourt. Several cross-channel terraces, platforms, and limestone metates were identified by Peter Davis in this region as clearing of dense growth progressed. These features were documented with tape and compass. Among the newly identified structures was a low platform situated directly above the northernmost of the two small caves near the western ballcourt building. Excavation in the 2007 season will attempt to determine whether this structure, which is located near the possible sweat bath (see below), exhibits evidence of feasting or other ritual observance. This platform, in addition to the topographic features and newly

identified terraces and platforms documented by survey in 2006, are in the process of being added to the site map and will appear in the next version.

BALL COURT COMPLEX EXCAVATIONS

Excavations in 2005 on the East-West axis of the playing alley and eastern bench (Operations 142 C and D) were supplemented in 2006 by Operations 142 G and F. In 2005, Operation 142 E removed humus and collapse to expose the rear vertical wall and cobble surface of the eastern ballcourt structure along its East-West axis. This unit was terminated at the close of the 2005 season and reopened in 2006, when, as an expanded 3 x 1 m unit, it revealed the patterned interior stone cobble construction of this building.

An additional excavation, Operation 142H, a 2.5 x 1 m test unit, was placed in a small, rectangular platform immediately west of the western ballcourt building. This excavation was undertaken to test the hypothesis that this small structure was a sweat house. The test unit cleared the humus layer, but for lack of time, did not expose any subsurface remains. It is expected that the results of this completed unit will be discussed in the report on the 2007 investigative season.

Operation 142, Suboperations F and G

The 2005 excavations on the central axis of the playing alley and eastern bench were supplemented in 2006 by Operations 142 G and F. The former was a 1 x 2.15 m unit that examined the area between unit 142 C, in the center of the playing alley, and unit 142 D in the eastern bench. Operation 142 G was a .5 m extension of Operation 142 C to the west, for the purpose of better exposing a linear north-south bedrock depression in the western third of the latter unit. When the two 2006 excavation units were completed, the four Suboperations, C, D, F, and G, created a 6.9 meter-long stratigraphic exposure, from the apron wall of the eastern building, through the 1.5 meter-wide bench, through the eastern half of the playing alley, to a point slightly beyond the midpoint of the playing alley (Figures 1 and 2).

This exposure revealed a 10 cm thick layer of humus above a layer of construction fill that varied between 30 and 40 cm in thickness across much of the playing alley. The uppermost 10 cm of fill in the playing alley was very clayey, most likely due to centuries of rain water accumulation and drainage.

The fill terminated on hard limestone bedrock that was largely devoid of the solution holes evident in many other test units at the site. Although no chisel marks or other signs of modification were apparent, the smoothness of this bedrock surface was suggestive of modification. The bedrock sloped gently to the west beneath the approximately 1.5 m-wide bench. To the immediate west of the bench, the bedrock was relatively level, but toward the center of the playing alley, bedrock dipped noticeably.



Figure 1. Wide angle view from the northwest of the playing alley and the eastern ballcourt structure, showing Operation 142, Sub-operations C, D, F, and G.



Figure 2. Wide angle view from the south of the ballcourt playing alley and Operation 142, sub-operations C,D, F, and G.

Operations 142 C and G exposed this linear north-south depression in bedrock near the midpoint of the playing alley. The heavy concentration of gravels with little soil at the base of this depression suggested that this was an artificial drainage feature, reminiscent, on a larger scale, of the artificial household drainage channels in bedrock reported by Lohse and Findlay (2000).

In summer 2006, during periods of rain, Units 142 C and G were protected by a suspended tarpaulin. Nevertheless, water that had apparently soaked through ground soil to the level of bedrock in the northern half of the ballcourt was observed flowing freely through the gravel at the base of Operations 142 G. Water draining through this depression parallels the course of water that has been observed by project staff and students draining to the south on the surface of the playing alley over the last three research seasons. Surface water has been observed flowing through the central section of the playing alley and through a large gap in the stone slab wall at the south end of the ballcourt, from which it drains toward a natural sluice at the edge of a deep arroyo.

Operation 142, Suboperation E

This operation consisted of a 3 x 1 m excavation on the east-west axis of the eastern ballcourt structure. The unit was placed with its long axis traversing the rear wall of the structure and two-thirds of the building's width, to within 1.5 m of the intact stone courses of the sloping apron. Over two seasons, this operation revealed evidence of a probable artificial surface behind the structure, a relatively intact vertical retaining wall that formed the rear of the structure, a cobble upper surface, as well as patterned interior and exterior stone cobble construction.

Evidence for an artificial surface on the eastern side of this structure consisted of small-cobble and gravel fill at the base of the rear wall. No plaster or other surfacing remains were encountered at the interface of humus and fill. This fill abutted the base of the 50 cm-tall back wall of the building, which was composed of three dry-laid courses of rough-hewn cobbles. The upper limit of this wall contacted the upper surface of the structure – a random distribution of unshaped or roughly shaped cobbles with maximum dimensions of 20 cm or less. The surface of which these cobbles were a part extended across the top of the building and extended the upper edge of the building's apron.

The random character of the placement of these upper surfacing cobbles contrasted with the carefully placed cobbles of the rear wall and interior. Excavation revealed that the exterior wall blocks, which had maximum dimensions of 40 cm or more, were precisely positioned with their long axes oriented east-west. This contrasted with the similarly proportioned interior cobbles, the long-axes of which were laid north-south in parallel fashion. The interlocking pattern of dry-laid interior and exterior cobbles (Figure 3) has not been encountered at any other structure at the site, including the excavated stone-walled buildings in several of the knoll-top patio groups.



Figure 3. Wide angle view of from the north of the south wall of Operation 142 E, Lot 8, in the eastern ballcourt structure.

Excavation of the interior cobble fill revealed that the building was almost completely devoid of soil fill. Most of the soil that was encountered occurred at the base of the excavation where cobbles contacted what appeared to be artificially smoothed limestone bedrock. This soil was interpreted as probable post-abandonment humus that was washed into voids between cobbles. The few heavily weathered sherds that were recovered from the soil were interpreted as probably also having been washed in from the structure's surface. The exception to this was a localized group of large and relatively well preserved sherds encountered around the lowest course of interior cobbles, at the extreme western end of the unit. These sherds, which derived from several vessels and did not constitute a single complete or near-complete vessel, were too large to have been washed into the structure through voids. The sherds clearly represent original, *in-situ* inclusions in construction material. It is anticipated that analysis of these sherds, which were recovered at the end of the 2006 season, will be carried out during the 2007 research season by ceramicist, Lauren Sullivan.

GROUP B RESIDENTIAL TERRACE EXCAVATIONS

The primary investigative effort of the 2006 research season at Group B's residential terrace complex was the creation of a five-meter-long, north-south trench in Rooms 1 and 2 of Foundation Brace B (Structure B-45). This was carried out by removing the balks that existed between Operations 141 C, 141 D, and 141 E, which were completed in 2005

(Walling et al. 2006). The resulting exposure extended between Rooms 1 and 2, the two largest rooms of this foundation brace and facilitated the interpretation of the construction history of the building.

The three units that were undertaken in 2006 to create this exposure were Operation 141 G, a 1 m x .5 m unit south of Operation 141 C, Operation 141 H, a 1 x 1 m unit placed between operations 141 C and 141 D, and Operation 141 I, a 1 x 1 m unit to the north of Operation 141 D. These six test units together revealed a 10 cm to 15 cm thick layer of humus covering three superimposed construction layers suggestive of at least two construction events in this part of the building. Stratigraphic evidence from this excavation, in conjunction with evidence from Units 141 A and 141 B in Room 1 of the Foundation Brace (Walling et al. 2005), supports the interpretation of this building as being the product of four Late-Classic construction events, the first three of which took the form of mounded platforms on a terrace surface.

The final stage of construction, which represents a radical expansion and remodeling of the building, created the three-room structure visible today, in which rooms sit flush with the surface of Terrace #6. Excavations here, to date, suggest that the well built interior and exterior walls of this building characterize only the final stage of construction. These walls consisted of parallel lines of well shaped limestone blocks set edge to edge. Cobble and gravel fill filled the intervening space. To judge from the few that remain erect, these wall blocks probably originally extended 30 cm to 40 cm above the surface. Their lower sections were set in a heavy gravel fill. These low walls presumably functioned to support perishable construction. Similar to the 2005 investigations at this location, research in 2006 produced no burials or caches in Room 1 or Room 2 of Foundation Brace B.

Operation 141 K, a 1 x 2 m excavation placed on the wall between Rooms 2 and 3 of Foundation Brace B was undertaken to define the character of an anomalous feature in the wall near the northern limit of Room 3, the smallest and easternmost of the rooms in this building (Walling et al. 2006). This unit, which will be reopened and completed in 2007, exposed several layers of construction fill and a double wall similar to that excavated in Op141 C between Rooms 1 and 2. A matter of note is that the uppermost construction deposit here produced clear Tepeu 3 sherds, which dates the last level of construction in this room to Terminal Classic times.

DISCUSSION

In Foundation Brace B of the Group B residential terraces, precise and durable wall construction and use of interior gravels, the latter perhaps to lend stability to living surfaces (Davis and Walling n.d.), are evidence of the precision and thought that went into the construction of this building and presumably other buildings in this residential complex. The investment of labor and planning, in conjunction with the dimensions of these buildings (Walling et al. 2006), suggests that the residents of these structures

enjoyed something more than the status that characterized the residents of the hundreds of small, haphazardly placed, and largely earthen platforms that occur in all residential groups at the site.

A similar investment of ancient labor and planning effort was made evident this season by investigations in the eastern ballcourt structure, where interlocked interior and exterior cobble construction apparently lent durability to this building, and most likely its twin. The fact that many of the stone courses of exterior walls, front and rear, are in place after 1,200 years of abandonment is evidence of the effort dedicated to the design and construction of these structures.

Other planning in the ballcourt complex is suggested by our 2006 findings. In 2005, the topography in the area of the ballcourt and observation of local water-flow patterns suggested to the ballcourt's investigators that the builders of the ballcourt complex intentionally placed the parallel ballcourt buildings between bedrock outcrops in a natural drainage where its location may have referenced two Mesoamerican creation myths (Walling et al. 2006). The presence of flowing water in this ballcourt also adds a dimension to our understanding of the relationship of ballcourts and water (cf. Scarborough 2003).

Investigations in 2006 suggest that in addition to facilitating the flow of water on the playing alley surface, by means of a gap in the rough-hewn vertical stone slab wall, the creators of the ballcourt at Chawak But'o'ob placed a drainage feature at the level of bedrock where it functioned unseen by visitors to the ballcourt. The character of this subsurface drain may provide an indication of the nature of the original ballcourt surface. It seems unlikely to the authors that the drainage line set into bedrock was designed to capture and direct only water that soaked through cracks in an ancient plastered playing surface. The size of the bedrock depression at the center of the ballcourt and its ability to manage contemporary water flow during heavy summer rains suggests that the drain was originally intended to manage a substantial flow of subsurface water. This raises the possibility that the playing alley of this ballcourt had an earthen surface. This possibility, in turn, begs the question of whether other Classic-period ballcourt playing surfaces were unplastered.

ACKNOWLEDGEMENTS

We would like to thank those who have supported our research in 2006 at Chawak But'o'ob. These include the staff of the Programme for Belize Archaeology Project, particularly its director, Fred Valdez, as well as the Institute of Archaeology in Belize and its Director of Research and Education, Dr. John Morris. Thanks are also due to the field workers from the communities of San Felipe and Orange Walk who have done much hard work to facilitate our research at the site. We also want to thank Lauren Sullivan for her analysis of ceramics produced by our investigations.

REFERENCES CITED

Davis, Peter and Stanley Walling

n.d. A Perspective of on Ancient Maya Environmental Management and Site Development Through the Lens of Soil Analysis. Manuscript in the possession of the authors.

Lohse, Jon and Patrick Findlay

2000 A Classic Maya House-Lot Drainage System in Northwestern Belize, *Latin American Antiquity*, 11: 175-185

Scarborough, Vernon

2003 Ballcourts and Reservoirs: The Social Construction of a Tropical Karstic Landscape. In *Espacios Mayas: Representaciones, Usos, Creencias*. A.Breton, A. Monod Becquelin, and M Humberto Ruz, eds., pp. 77-92. Centro de Estudios Mayas, Mexico.

Walling, Stanley and Peter Davis (organizers)

2006 Archaeological Investigations at Chawak But'o'ob, A Late Classic Maya Escarpment Community in Northwestern Belize. Symposium presented at the annual meeting of the Society for American archaeology, San Juan, Puerto Rico.

Walling, Stanley, Peter Davis, Sandra Dias, and Melissa DeVito

2005 Report of the 2004 Rio Bravo Archaeology Project: Site R.B. 47, Chawak But'o'ob. in *Programme for Belize Archaeological Project: Report of the Activities of the 2004 Field Season*. F.Valdez, ed., pp.115-143, Occasional Papers No. 4, Mesoamerican Archaeological Research Laboratory, University of Texas at Austin, Austin.

Walling, Stanley, Peter Davis, Jonathan Hanna, Leah Matthews and Nahum Prasarn

2006 Residential Terracing, Water Management, Matrix Analysis and Suburban Ceremonialism Report of the 2005 Rio Bravo Archaeological Survey. In *Programme for Belize Archaeology Project Reports*, Occasional Papers Vol. 6, Mesoamerican Archaeological Research Laboratory, Valdez, F. (Ed.), pp. 41-87, Mesoamerican Archaeological Laboratory, University of Texas, Austin.

SEEDS, SHELLS, AND SITES - RESEARCH IN NORTHWEST BELIZE: REPORT OF INVESTIGATIONS FROM THE 2006 FIELD SEASON

Jon B. Hageman, Northeastern Illinois University
David J. Goldstein, Southern Illinois University-Carbondale
Erin Thornton, University of Florida

INTRODUCTION

Fieldwork for the 2006 season extended from mid-May through early June. Two days were spent in the lab, June 7 and June 8. A group of 15 undergraduate students from Northeastern Illinois University, collected data through excavation at four residential groups and along one intersite survey transect during the field season.

Excavations focused on the recovery of paleobotanical and zooarchaeological remains associated with four residential units previously excavated in 1998, 2000, and 2005. A growing body of literature has examined ancient Maya diet (e.g., Emery 2003, 2004; White 1999), but much of this work focuses on faunal remains associated with major site centers. Very little, however, is known of the plants consumed by the Late Classic Maya (e.g., Lentz 1999), and the same applies to the prehistoric consumption of fauna by rural populations (e.g., Emery 2004). The project ethnobotanist, David Goldstein, supervised analysis of botanical samples. The project zooarchaeologist, Erin Thornton, oversaw the analysis of faunal samples.

Mapping efforts during the 2006 season focused on extending the length of mapped area along the Dos Hombres-La Milpa intersite transect. Mapped area currently stands at about 8.9 km extending along an azimuth of about 340 degrees from Dos Hombres, and an additional 3.5 km toward La Milpa remains to be mapped. Student crews were split into excavation and mapping teams for much of the season until the rains flooded many areas to be surveyed.

DESCRIPTION OF EXCAVATIONS

Excavation and Sampling Procedures

The 2006 excavations were conducted to obtain samples of faunal and botanical remains from middens associated with settlement previously mapped and tested by Hageman (2004). Each midden was located through shovel testing. This process involved digging small (< 30 cm diameter, < 20 cm deep) holes, using shovels, several meters from known housemound locations. Recovery of eight to ten sherds in any given shovel test was marked as a potential location of a midden. Two locations were identified at each site, and an area of two square meters was exposed at each midden. These units were excavated in 10 cm levels to bedrock. Units were excavated to depths between 30-50 cm.

Each level was recorded as a single lot. All excavated materials, except those recovered for sampling, were screened through 1/4-inch mesh. Sampled materials were subject to finer sorting, following established conventions for macrobotanical and zooarchaeological recovery (Emery 2004; Pearsall 2001).

Two sets of samples were collected from each 10 cm level for processing in the lab: two liters for botanical and six liters for faunal recovery. Samples were processed separately in the field lab.

Guijarral (RB-18 Op 45 Subop T)

Locations around the site center at Guijarral (RB-18) were shovel-tested for midden remains, and a suitable area was found to the east of the site center, just off the platform, about 30 cm north of the 2005 excavations. This excavation area is to the northeast of Structure A-8 and southeast of Structure A-7 (Figure 1). Midden here reached a depth of about 45 cm before encountering bedrock. A total of 12 lots were recovered from Op 45 Subop T and processed in the lab. Ceramic analysis indicates that deposits recovered at Op 45 date to Late Classic 2.

Grupo Chispas (RB 18 Op 46 Subops K and L)

Shovel tests around this small housemound group located midden on the east slope of the hillside (Figure 1). A 1 x 2 m unit (Op 46 Subop K) went into the second 10 cm level before revealing signs of bioturbation, including large chunks of blue plastic, across the length of the unit. This unit was considered to be too disturbed to be of use, so it was abandoned and backfilled. A 1 x 1 m unit (Op 46 Subop L) was subsequently located some 20 m to the south, and excavations here recovered four lots for processing. Ceramics recovered in these excavations date to Late Classic 2.

Barba Group (RBS 2 Op 5 Subops AJ, AK, and AL)

Midden was located on the slopes to the northeast of this three-structure courtyard group (Figure 2). Shovel tests indicated two areas with suitable remains; three 1 x 1 m units were excavated here. One unit, Subop AK, encountered bedrock at a depth of 30 cm, and four lots in total were recovered. Two other units, Subop AJ and AL, encountered bedrock about 25 cm below the surface. A total of 10 lots was excavated in from Op 5. Ceramics from each of these excavations correspond to Tepeu 2.

Bronco Group (RBS2 Op 11 Subop U)

Shovel tests here located midden on the slopes approximately 15 m south of this three-structure hilltop housemound group (Figure 2). A 1 x 4 m unit on this midden went to a depth of 30 cm, and nine lots were recovered for processing in the lab. Ceramics from this excavation were assessed as Tepeu 2.

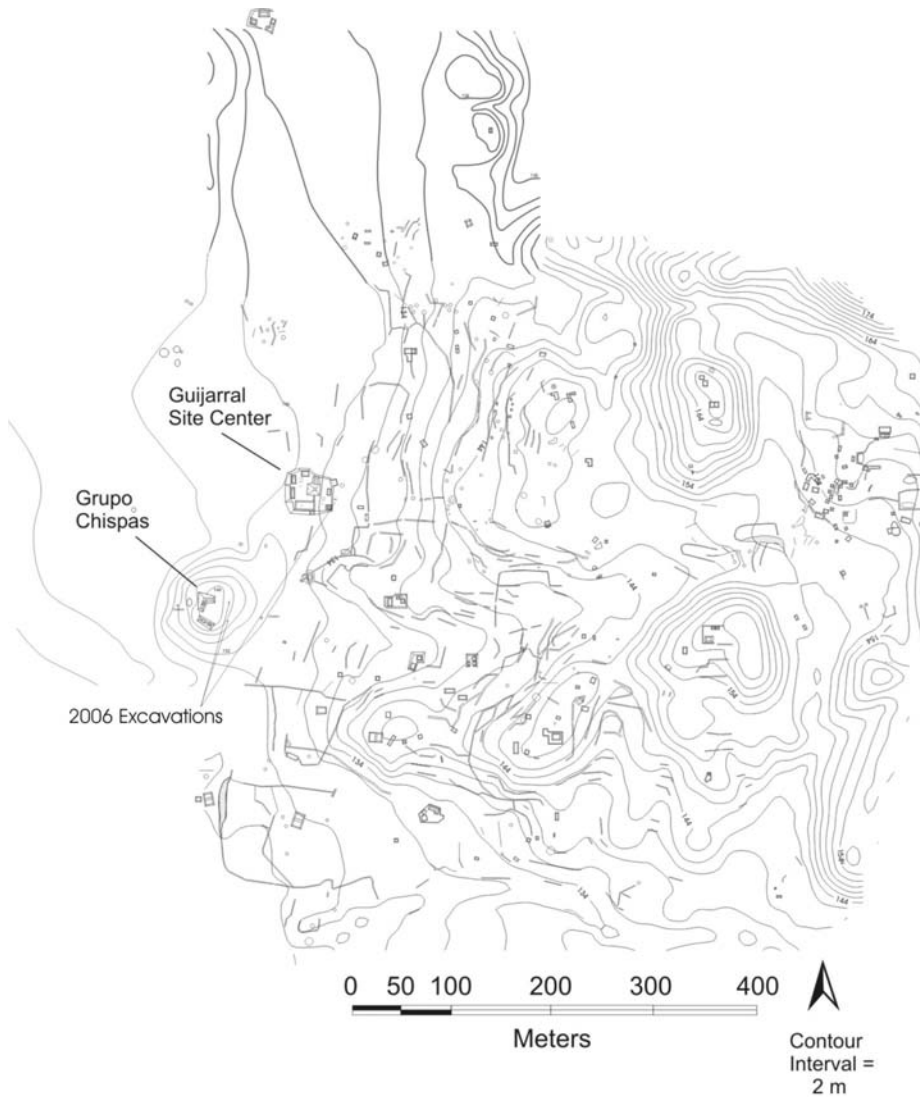


Figure 1. Map of Gujarral Site Center and Grupo Chispas, showing location of 2006 excavations.

MACROBOTANICAL RECOVERY

Thirty-seven botanical samples were collected from the 2006 excavations. All were processed and many were exported to the USA for analysis. Processing of botanical samples was arranged such that alternating levels of the same 1 x 1 m square were subject

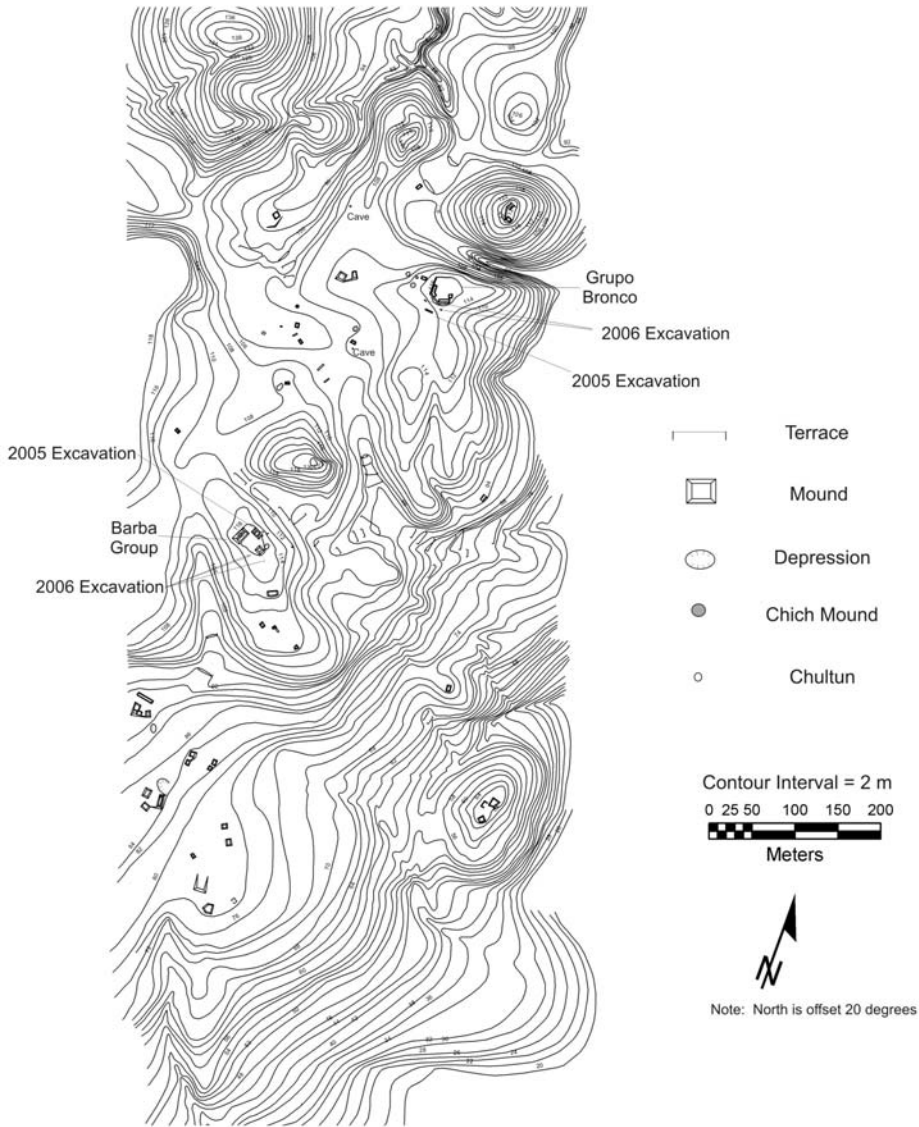


Figure 2. Map of Barba and Bronco groups, showing location of 2006 excavations.

to either dry screening or flotation. Dry screening involved sorting the sample through a nested standard series of geological screens, where each subsequent screen is half the size of the previous screen. Screen sizes were: 4 mm, 2 mm, 1 mm, and 0.5 mm. A pan collected materials smaller than 0.5 mm in size. The weight and volume of materials

trapped by each screen was recorded. Flotation was conducted in the PFBAP camp using a “Flote-Tech A” machine. This is one of the premiere flotation machines available (Hunter and Gassner 1998; Rossen 1999). Both light and heavy fractions were processed through the standard screen series. As with the dry screened material, weight and volume of materials collected by each screen was recorded. Each sample was exported after the end of the field season for examination at the NEIU Anthropology Lab for organic remains using incident light microscopes (5-50x). All light flotation fractions were exported for scanning; the heavy fractions will be scanned at a future date. 100% of the 4 mm and 2 mm fractions of the dry-screened material will be scanned, as will 20% of the 1 mm and 0.5 mm fractions. This analysis is being conducted by Goldstein and is currently in progress at Northeastern Illinois University, Chicago, IL.

The analysis of the 2006 materials is ongoing, and we report here on the 2005 materials with 95% of the samples analyzed. The 2005 materials come from the same four sites. The analyzed remains indicate macrobotanicals can be recovered from a lowland neotropical context with frequencies that permit cross context analysis and reconstruction of some elements of plant use during the sites’ Prehispanic occupations.

Table 1 provides a breakdown of the weight and count of macrobotanical recovery by Op, Subop, and Level. We examine only the seed, fruit, and leaf plant organ materials from levels 21 cm below the ground surface as this material is likely better preserved and less bioturbated. The materials from the A levels have not all been examined.

Table 1. Weight and count of macrobotanical recovery by Op, Subop, and paired levels. N/A indicates that the Subop terminated at the previous depth increment.

Op	Data	Level A	Level B	Level C	Level D	Level E	Level F	Grand Total
		(0-20cm B.S.)	(21-40cm B.S.)	(41-60cm B.S.)	(61-80cm B.S.)	(81-100cm B.S.)	(100-120cm B.S.)	
5	Sum of Count	412	346	TBA	368	128	538	1792
	Sum of Weight(g)	3.5	83	TBA	10.14	12	10.5	119.14
11	Sum of Count	TBA	2072	484	N/A	N/A	N/A	2556
	Sum of Weight(g)	TBA	67.9	39.5	N/A	N/A	N/A	107.4
45	Sum of Count	TBA	1123	442	392	45	N/A	2002
	Sum of Weight(g)	TBA	129.9	35.5	28	8.6	N/A	202
46	Sum of Count	354	352	436	568	N/A	N/A	1710
	Sum of Weight(g)	8	17.9	33.6	36.6	N/A	N/A	96.1
Total Sum of Count		766	3893	1362	1328	173	538	8060
Total Sum of Weight(g)		11.5	298.7	108.6	74.74	20.6	10.5	524.64

Some contexts, including Ops 5 and 45, are deeper than Ops 11 and 46. Our analyses cover virtually all excavated contexts, those of Op 5 samples are ongoing and thus we

report incomplete numbers for this context. That said, the total number of identifications, and materials recovered will only increase.

The feasting contexts correspond to Operations 45 and 5, while our domestic areas correspond to Operations 46 and 11. Our results indicate certain taxa are restricted to either domestic or feasting contexts. In domestic middens, 12 distinct taxa (n=35) account for less than 3% of the overall taxa ubiquity recovered. The diversity of remains, however, is high (Table 2). Domestic middens are where we recovered *Crescentia* sp., or tree gourd, seeds, possibly remains of the production of gourd vessels. Here we also found the exclusive use of the palm fruit *Rheinhardtia* sp., as well as *Momordica* sp., a wild vine squash consumed by mammals (alt. Humans), but not thought to have been eaten by humans. These plants grow in disturbed habitats, such as human activity areas, housing or agriculture. We also found stem remains from a fruit from the Family Sapotaceae, and six other, as of now, unidentified seeds.

Table 2. Taxa associated with domestic middens.

			Domestic Middens		Ubiquity (expressed as % of assemblage)	Total
Family	Organ	Determination	11	46		
Arecaceae	Seed	<i>Rheinhardtia</i> sp.	1		0.09%	1
Bignoniaceae	Seed	<i>Crescentia</i> sp.	3		0.26%	3
Cucurbitaceae	Seed	<i>Momordica</i> sp.	1		0.09%	1
Meliaceae	Seed	<i>Cedrela</i> sp.		4	0.34%	4
Poaceae	Seed	<i>Zea mays</i>		2	0.17%	2
Sapotaceae	Fruit	cf. Sapotaceae	1		0.09%	1
Undetermined	Seed	UKN #11-FS1	2	2	0.34%	4
		UKN #185-FS44	4		0.34%	4
		UKN #187-FS44	7		0.60%	7
		UKN #26-FS7		3	0.26%	3
		UKN #31-FS7		3	0.26%	3
		UKN #73-FS6		2	0.17%	2
Total			19	16	2.99%	35

In comparison, the feasting middens have a slightly higher diversity of taxa, with 17 different plants. These represent a higher proportion of the overall omnipresence at a bit over 5%. However, the quantity of identifiable remains is almost twice as great in the feasting midden contexts as far as exclusivity is concerned, n=60 (Table 3).

Table 3. Taxa associated with feasting middens.

			Feasting Middens		Ubiquity (expressed as % of assemblage)	Total
Family	Organ	Determination	5	45		
Asteraceae	Seed	UKN #24-FS7	3		0.26%	3
Boraginaceae	Seed	UKN #195-FS4	1		0.09%	1
Burseraceae	Seed	<i>Bursera</i> sp.	1		0.09%	1
Malvaceae	Seed	<i>Sida</i> sp.	1		0.09%	1
Myrtaceae	Fruit	<i>Pimenta</i> sp.	6		0.51%	6
	Seed	<i>Psidium</i> sp.	2		0.17%	2
Sterculiaceae	Seed	<i>Guazuma</i> sp.	5		0.43%	5
Ulmaceae	Seed	<i>Celtis</i> sp.	1		0.09%	1
Undetermined	Seed	UKN #28-FS7	7		0.60%	7
		UKN #38-FS19	2		0.17%	2
		UKN #39-FS19	4		0.34%	4
		UKN #44-FS20	3		0.26%	3
		UKN #45-FS20	7		0.60%	7
		UKN #52-FS13	2		0.17%	2
		UKN #56-FS29	3		0.26%	3
		UKN #70-FS9	2		0.17%	2
		UNK#203-FS40	10		0.85%	10
Total			11	49	5.13%	60

Six taxa are equally associated with both feasting and domestic contexts. They represent 8.21% of the overall ubiquity of materials recovered, n=96. Of these, only one (*Cecropia* sp.), has been recovered from a Maya site in seed form. Some have been reported as wood in construction fill, but the seeds themselves, indicating selective use of the plant apart from construction, have not been recovered.

Most of these seeds come from arboreal or herbaceous species associated with wet-successional forests. The Late Classic Maya appear to have incorporated a number of local, non-domesticated plants in their daily and festal activities. This offers a perspective outside of the traditional home garden/outfield agricultural system commonly associated with the ancient and historical Maya.

Here we see fruit and seed remains common to ethnographic and ethnohistoric gustatory preferences for feasting, including *Psidium* sp., known as guava, and *Pimenta* sp., allspice. The presence of *Celtis* sp., hackberry; *Bursera* sp., and *Guazuma* sp., require

further investigation, as these are used for medicinal and ritual purposes by Modern Maya. Of these, *Psidium* sp., *Bursera* sp., and *Celtis* sp., have been reported from construction fill or agricultural canals at other Maya sites such as Cuello, Pulltrouser Swamp, and Tikal. Our work suggests that these items may have been associated with feasting events (See Tables 4-6).

Table 4. Taxa represented equally in feasting and domestic middens.

			Feasting Middens		Domestic Middens		Ubiquity (expressed as % of assemblage)	Total
Family	Organ	Determination	5	45	11	46		
Cecropiaceae	Seed	<i>Cecropia</i> sp.		1		1	0.17%	2
Flacourtiaceae	Seed	<i>Zeulania</i> sp.		17	1	16	2.91%	34
Rubiaceae	Seed	<i>Hamelia</i> sp.		1		1	0.17%	2
Solanaceae	Seed	UKN #4-FS1		1		1	0.17%	2
Tiliaceae	Seed	<i>Trichospermum</i> sp.		1	1		0.17%	2
Undetermined	Fruit	UKN #7-FS1		27	15	12	4.62%	54
Total			0	48	18	30	8.21%	96

n=6 Taxa

Our last two categories of plant remains are those present in both types of context, but skewed toward one or the other. Materials more prominent in feasting middens (Table 5) include 12 taxa which account for almost 50% of the ubiquity of materials present, n=550. This suggests that plants only rarely associated with domestic food production had some preferential utility in preparing commensal activities. This is where we find the most instances of *Z. mays* fruit remains. These are cupules associated with the cobs, perhaps indicating the processing of corn, e.g., removal from the cob, at feasting sites and subsequent discard.

The *Acoelarraphe* sp., palm nut is associated with a feasting context and is widely available in the regional successional forest. We also see carbonized *Amaranthus* sp. seeds here. This is also a successional plant that inhabits human disturbed environments. The seed is consumed throughout the Americas, and the greens are used in infusions or as leafy vegetables in common and festal cooking. Again, both instances indicate the importance of non-domesticated plants as foodstuffs in the performance of daily and festival events.

When we look at the converse situation of plant materials present mostly in domestic middens (Table 6), we see a significantly restricted set of taxa, n=3, yet the overall abundance of these plants represents more than one-third of the overall plant assemblage, 37%. In concert, they describe, perhaps, what makes both daily and festival foods.

Table 5. Taxa encountered more frequently in feasting middens.

			Feasting Middens		Domestic Middens		Ubiquity (expressed as % of assemblage)	Total	
Family	Organ	Determination	5	45	11	46			
Amaranthaceae	Seed	<i>Amaranthus</i> sp.		3	2		0.43%	5	
Arecaceae	Seed	<i>Acoelorrhaphe</i> sp.	5	10	3	3	1.79%	21	
Asclepidaceae	Seed	<i>Asclepias</i> sp.		191	1		16.41%	192	
Asteraceae	Seed	cf. Asteraceae		3		1	0.34%	4	
Fabaceae	Seed	cf. Fabaceae		2	1	2	0.43%	5	
Poaceae	Fruit	<i>Zea mays</i>		13	1	5	1.62%	19	
	Seed	cf. Poaceae		5		1	0.51%	6	
		<i>Chusquea</i> sp.		4	1	1	0.51%	6	
		UKN #37-FS19		9		6	1.28%	15	
Undetermined	Leaf	Unid	11	41	11	6	5.90%	69	
	Seed	UKN #177-FS38	7		1		0.68%	8	
		UKN #50-FS6		5		1		0.51%	6
		UKN #51-FS13	72		9	13		8.03%	94
		Unid		68	11	21	8.55%	100	
Total			95	354	41	60	47.01%	550	

Table 6. Taxa more frequently encountered in domestic middens.

			Feasting Middens		Domestic Middens		Ubiquity (expressed as % of assemblage)	Total
Family	Organ	Determination	5	45	11	46		
Fabaceae	Leaf	cf. Fabaceae		6	19	151	15.04%	176
Malphiaceae	Seed	<i>Byrsonima</i> sp.		1	10		0.94%	11
Onagraceae	Seed	<i>Onoether</i> sp.	11	20	86	20	11.71%	137
Undetermined	Fruit	UKN #20-FS7	1	10	13	40	5.47%	64
	Seed	Unid	2	10	6	23	3.50%	41
Total			14	47	134	234	36.67%	429

n=3 Taxa

Among these seeds is the famous *Byrsonima* sp., or Nance fruit. Today it is consumed as a fruit, jam, and as an alcoholic beverage. It appears in greater frequency in our domestic middens than in our feasting situations. Again, this is a wild foodstuff, or garden semi-domesticated. Though not new to Maya archaeological contexts, here, it is associated with domestic food consumption, and lends us a context for suggesting its limited use in feasting, over and above daily consumption.

Onoether sp., has been suggested as being part of the Prehispanic ceremonial snuff traditions of the Caribbean and South America. This taxon comprises a large portion of recovered remains, but is better represented in our domestic middens. If the occurrence of these seeds is associated with ritual snuff use among the Maya, its production, or even

use, may be more prevalent in domestic, private, settings, rather than during commensal affairs.

Comparison of Recovery: Flotation vs. Dry Screening

Our work also highlights the use of complementary recovery techniques to yield viable quantities of data. Given that half of each context was treated differently we would, ideally, see similar weights and counts for all items from each Operation independent of recovery method. Instead, more wood, charcoal or dried, was recovered using dry sieving than using flotation (Table 7). Only in Operation 11 are these figures

Table 7. Overall recovery of all items by class (Ops 5, 11, and 46 are incomplete).

Float/Dry	Data	Class	Op				Grand Total
			5	11	45	46	
Dry	Weight(g)	Root				2.5	2.5
		Stem	94.34	56.2	151.9	59.5	361.94
	Count	Bone				1	1
		Ceramic	18	33	25	40	116
		Flower			22	3	25
		Fruit		3	34	25	62
		Leaf	4	8	36	101	149
		Mineral	11	15	197	80	303
		Root				80	80
		Seed	72	43	214	96	425
		Shell	847	1450	709	572	3578
		Spore				2	2
		Stem				124	124
Float	Weight(g)	Shell				3.5	3.5
		Stem	24.8	51.2	50.1	30.6	156.7
	Count	Bone			1		1
		Ceramic			36		36
		Flower		2	24	2	28
		Fruit	4	33	32	66	135
		Leaf	97	22	11	79	209
		Mineral	82		35		117
		Root		1			1
		Seed	232	145	178	98	653
		Shell	416	801	449	321	1987
		Spore				1	1
		Stem	10			8	18
Total Sum of Weight(g)			119.14	107.4	202	96.1	524.64
Total Sum of Count			1792	2556	2002	1710	8060

roughly comparable. Dry techniques recovered twice as much wood by weight as did the flotation. In almost every category more materials were recovered, by count, using dry sieving techniques than by using flotation techniques. In contrast, however, 58% more seeds were recovered using flotation than were recovered by dry sieving techniques. As we continue our analysis, we plan to offer a full data accounting of what was recovered and suggestions on how to best set the stage for future work.

The R.E.W. Adams Archaeological Research Facility is virtually ideal for pursuing the refinement of recovery methods in Neotropical archaeological contexts. This research is substantially facilitated by both the presence and upkeep of the floatation machine and the ability to store and process materials in the field lab. Our conclusions thus far are that using both flotation and dry sieving in concert, at least as far as midden context recovery is concerned, is crucial to a more comprehensive analysis. As we continue our study of Late Classic Maya food preparation and consumption activities, in the Rio Bravo Region, we will continue to evaluate recovery methods.

FAUNAL RECOVERY

In light of the quantity of the botanical recovery and its overall excellent state of preservation, we expected to recover similar quantities of faunal materials from the 2006 excavations. A total of 37 samples was collected; of these, 28 samples were analyzed in the field lab while a portion of another was exported for analysis in the US. This will be conducted by Thornton at the University of Florida. Nine samples are in storage in camp awaiting future analysis. All samples were sieved through a nested series of screens: ¼", 1/8", and 1/16". Materials collected off each screen were then scanned for bone and shell fragments. In the case of the 1/16" materials, these were water-screened to aid in moving the clayey soils through the screens. These samples were hung in polyester cloth and allowed to air dry overnight; these were scanned the following day.

We were surprised to find that faunal materials were all but absent from the middens we excavated. Considering the quantities of ceramics and botanical remains we found, the small number of faunal materials was unexpected (Table 8). A single body whorl fragment of *Pomacea flagellata* (Apple snail) was found at Op 45, and no faunal remains were recovered from Op 46. The reason for this is unknown; Op 46 is actually closer than Op 45 to the bajo bounding settlement on the western edge of Guijarral. No faunal remains were found at Op 5, while several fragments of *Pomacea* (as well as an aquatic gastropod) were recovered from Op 11. Op 11 is closer to the Rio Bravo Floodplain than is Op 5, so it's no surprise to find more faunal remains there. Still, the overall count is quite low relative to the quantities of botanical remains recovered.

The absence of faunal remains was puzzling, and we have crafted several hypotheses to explain why we had so many plant remnants, but so few faunal materials. Soil acidity was suggested as being responsible for poor faunal preservation. Even though this should have also degraded the plant materials, we wanted to test this hypothesis anyway and borrowed a soil ph meter from Dr. Sheryl Luzzader-Beach. Students measured and recorded the acidity of the soils in excavation levels at all of our sites. The results ranged from 6.9-7.1, or very neutral. Acidic soils, then, do not seem to be present and therefore could not have been responsible for degrading ancient faunal materials. This point

Table 8. Recovery of faunal remains by Op, Subop, and Lot.

Op.	SubOp.	Screen		NISP Taxonomy	Element	Portion
		Lot	Fraction			
45	T	2	1/4"	1 <i>Pomacea flagellata</i> *	body whorl	fragment
11	U	2	1/8"	1 <i>Pomacea flagellata</i>	body whorl	fragment
11	U	4	1/16"	3 cf. <i>Pomacea flagellata</i> **	body whorl	fragment
11	U	3	1/16"	1 cf. <i>Pomacea flagellata</i>	body whorl	fragment
11	U	4	1/8"	1 cf. <i>Gastropoda</i> (aquatic)	body whorl	fragment
11	U	6	1/16"	3 cf. <i>Pomacea flagellata</i>	body whorl	fragment

Notes:
 * common name = apple snail
 ** cf = "compares well with" (a less conclusive identification due to the fragment's small size)

cannot be overemphasized. One comment commonly made by field archaeologists regarding Neotropical soils refers to either their high level of acidity or alkalinity. Clearly we need to further investigate this observation. It is possible that there are annual fluctuations of pH that effect taphonomy, e.g., rainy season activating cationic activity, and these need to be further explored in the future as we refine field recovery.

We are left with four additional hypotheses. The first is that the inhabitants of the area consumed little or no faunal resources because such resources did not exist in the area at the time. This is difficult to believe, as even the most marginal of tropical environments features rodents, snakes, and other edible wildlife. A second hypothesis is that faunal materials were disposed of using processes and locations different from those used for plant and ceramic materials. This has some merit, as our shovel-testing technique relied on the location of ceramics as indicators of midden location. We would need to develop a more intensive regime of testing for middens containing faunal materials. In addition, we are examining ethnographic and ethnohistoric information to determine if this hypothesis has a precedent.

The third hypothesis is that the bones and shells underwent processing that hastened their degradation. One example of this is the grinding of bones into bone meal. As with the idea that Gujarraleños might have disposed of their bones in a different place, we are currently examining the ethnographic and ethnohistoric literature in search of examples of more intensive processing of faunal materials.

The fourth (or final) hypothesis is that faunal materials arrived at these residential groups after having undergone substantial processing elsewhere. Specifically, bones and shells would have been removed prior to transporting faunal materials to the houses in which they were consumed. As with the other hypotheses, we are exploring the ethnographic and ethnohistoric records to better understand faunal procurement and processing practices commonly used by the Maya.

DESCRIPTION OF SURVEY

Work on the Dos Hombres-La Milpa intersite transect during the 2006 season consisted of extending the transect baseline toward La Milpa, cutting four brechas, and mapping part of a dense cluster of chich features at the edge of a bajo.

Mapping is taking place near the site of Say Ka, extending west-northwest at an azimuth of 340 degrees. At every 100 m mark (e.g., N 4400, N 4500), *brechas* measuring 200 m in length were cut perpendicular to the baseline. As with the baseline, a crew of two workmen cut each *brecha*. Topographic data were collected up and down each *brecha* using Suunto clinometers, 50 m fiberglass tapes, trigonometric calculator, and pocket stadia rods. These topographic crews also ensured that the *brechas* were cut to sufficient length and converted slope distance to horizontal distance along each *brecha*. The baseline was extended from N 4500 to N 5162, dipping into and out of a bajo along the way. The crew also relocated pinflags at 25 m intervals along the N 4300 and N 4400 *brechas*, where flags had been placed in previous years, but mapping had not been completed. The baseline was shot using a one-minute four-screw transit, 50 m tape, trigonometric calculator, and stadia rod. A crew of two workmen cut the baseline.

Cutting progressed slowly as this part of the transect traverses a tinal bajo area. Topographic information collected in the field suggests the land surface here gradually slopes down from east to west, draining into an even lower area to the west of the mapping grid. This is confirmed by the 1:50,000 scale topographic map of the area, as drainages become evident on the map less than a kilometer to the west of the transect edge.

Mapping efforts recorded two residential courtyard groups and several chich (or cobble) features. One group consisted of a single-room, foundation-brace structure and several chich mounds at N 4400 E 200, discovered in 2005 but not mapped until 2006. Several chich mounds and berms were mapped by crews during the 2006 season. A few of these were located west of the baseline, but the vast majority were east of the baseline on the higher ground. Documentation of these features at the edge and in the bajo is extremely difficult due to the number of small trees growing in the area. These features were also unusually difficult to map as they are irregularly shaped. One of the things noted in the field was the degree to which these features tend to run east-west, parallel to the slope rather than perpendicular to it. These chich features may have been used to manipulate the flow of water in this area during the rainy season.

Approximately 350 m north of the chich features, at N 4853, the baseline crosses an aguada measuring about three meters deep and seven meters across. No other evidence of settlement was noted here. Finally, a residential group was found about 50 m east of the end of the N 5100 E 200 point on the transect. This is a small group of three mounds atop a hill (Figure 3). The site had been visited sometime within the past 20-30 or so years, as the crew found two large loops of galvanized wire and a two large (and empty)

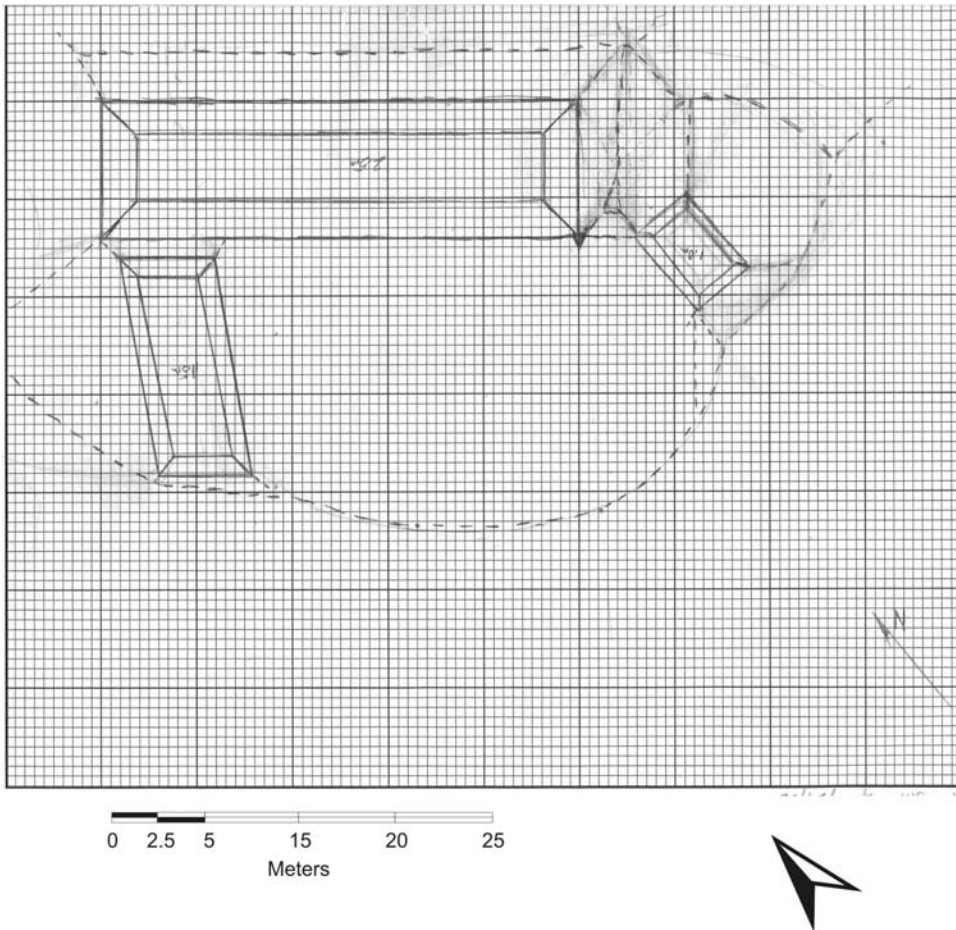


Figure 3. Map of Carmen Group.

flour bags atop the mound. It may have been a short-term campsite in the not-too-distant past.

Otherwise, the group is generally similar to many of the small farmsteads of the region in general and atop the La Lucha Escarpment in particular. Mound 1 is on the west side of the courtyard, stands 1.5 m tall, and measures 11.5 x 5 m in plan. The notable mound in this group is located on the north. This mound is unusually long for its context, measuring 25 m x 5 m, and stands about 2.5 m in height. Based on previous experience in the Rio Bravo area, it is likely that this mound has between 2-6 courses of stone in its walls. No bulge corresponding to a staircase was noted, but as no subsurface investigations were performed a stair may yet be noted on the front of the building.

Finally, the eastern mound is 3.5 m x 5 m in size, and is about 1.0 m tall. This site was named “Carmen” by the students that mapped it, and is located at approximately UTM E 284400, N 1770700.

SUMMARY

Though mapping efforts were curtailed by the rains, excavations were successful. A total of 37 samples was collected, and analysis to date indicates at least 217 plant species were used by the Maya living in these four residential groups. The association of specific species with two of these groups, where ceramic analysis has indicated ancient feasting, is intriguing. Early indications are that, much as certain animal species such as deer and dog were consumed by elite Maya as part of feasts in site cores, certain plant species may have been saved for special commensal events in rural areas.

Though these patterns are suggestive, further analysis will identify which species of plants were being used in which contexts. It is hoped that these results will add to our knowledge of ancient Maya subsistence. This work will complement existing studies, which have tended to focus on production and agricultural fields; few have obtained macrobotanical remains from consumption and midden contexts. In addition, the identification of these plant remains may add to our understanding of what made certain plants (other than maize) ideologically important to the ancient Maya.

A comparison of macrobotanical data (analyzed to date) from all four sites suggests differential plant consumption patterns at the two households containing shrines (Barba and Guijarral) versus the two households lacking shrines (Chispas and Bronco). Studies of ceramics recovered from all four residential groups in previous investigations indicate that the groups containing shrines were the loci of ancient feasting activities (Hageman 2004). Analysis completed to date suggests these feasts were distinguished by special types of plant foods. These include *Psidium* sp. (Guava), *Guazuma* sp. (Pixoy), and *Pimienta* sp. (Allspice).

Organic preservation in the lowland neotropical rainforest is widely assumed to be very poor. Both faunal and botanical categories are all but absent from excavation reports in the area; nevertheless, our lots contained carbonized and uncarbonized plant and animal remains. Given this level of recovery, we are confident that the material that passed through the 0.5 mm screen contains phytoliths. These may also be amenable to analysis and identification.

REFERENCES CITED

Emery, Kitty F.

2003 The Noble Beast: Status and Differential Access to Animals in the Maya World. *World Archaeology* 34(3): 498-515.

2004 Maya Zooarchaeology: Historical Perspectives on Current Research Directions. In *Maya Zooarchaeology: New Directions in Method and*

Hageman et al.

Theory, edited by K.F. Emery, pp. 1-14. Monograph 51, Cotsen Institute of Archaeology, University of California at Los Angeles.

Hageman, Jon B.

2004 Late Classic Maya Social Organization: A Perspective from Northwestern Belize. Unpublished Ph.D. Dissertation, Department of Anthropology, Southern Illinois University, Carbondale.

Hunter, A.A., and B.R. Gassner

1998 Evaluation of the Flote-Tech Machine-Assisted Flotation System. *American Antiquity* 63:143-156.

Lentz, David

1999 Plant Resources of the Ancient Maya: The Paleoethnobotanical Evidence. In *Reconstructing Ancient Maya Diet*, edited by C.D. White, pp. 3-18. University of Utah Press, Salt Lake City.

Pearsall, Deborah

2001 *Paleoethnobotany: A Handbook of Procedures*. Academic Press, New York.

Rossen, Jack

1999 The Flote-Tech Flotation Machine: Messiah or Mixed Blessing? *American Antiquity* 63:370-372.

White, Christine D.

1999 Introduction: Ancient Maya Diet. In *Reconstructing Ancient Maya Diet*, edited by C.D. White, pp. ix-xxvii. University of Utah Press, Salt Lake City.

MAAX NA: LAYOUT AND FUNCTION OF A MAYA CITY, REPORT ON THE 2006 FIELD SEASON

Eleanor King, Howard University
Leslie Shaw, Bowdoin College

OVERVIEW

Project efforts during the brief 2006 field season were concentrated on extending the detailed contour map made of the central part of the site towards the west, to include the west plaza (Plaza C, Figure 1), a small acropolis, and the main reservoir at the site. Secondary efforts were directed at exploration west of the site core and at excavation within the small acropolis. The results of each of these investigations are detailed below, followed by a brief discussion of site layout and function.

MAPPING

The field season was scheduled for March when the site is at maximum visibility and accessibility. We were therefore able to cover a large amount of ground in a short time span, using two total data stations and GIS (Arcview) software. The information we gained helped us shore up previous results and revealed interesting new data on the site.

We began by filling in missing contour information to the east and southeast of the main pyramid at the site (Str. 2-A-1, Figure 2). It seems clear from the results that, as suspected, the terrain in this area deflects rainwater into southwestern and southeastern drainage systems. This divide is partly natural, conforming to the shape of the bedrock immediately southeast of the main pyramid. It has been enhanced, however, by artificial means. A short and narrow *sacbe*, or raised causeway, about 16 m long by 3.5 m wide, continues the divide to the south in an area that would otherwise be flat. *Pozos* or wells/cisterns located east and west of this *sacbe* could have served as catchment areas for water, which would have flowed into and around those features and down into what appear to be *aguadas* or large waterholes to the southeast and southwest. This *sacbe* leads directly to a large patio group of restricted access, the Gateway Group, that is located in front of the elite residential/palace complex fondly known as Snob Knob. The only easy way into this complex, which is southeast of the main pyramid, is via a shallow incline that is effectively blocked by the Gateway Group. Thus, the *sacbe* served to direct both water flow and human traffic.

When we first found the *sacbe* a few years ago, we observed what appear to be remnants of a possible plain stela lying on its surface towards its northern end. Upon re-examination, it is unclear whether or not this does represent some sort of monument. The concentration of stone is, however, out of place in that location. Tests currently being undertaken of limestone samples from around the site, including of this rock, might help us eventually resolve this issue by showing whether or not it is chemically identical to the

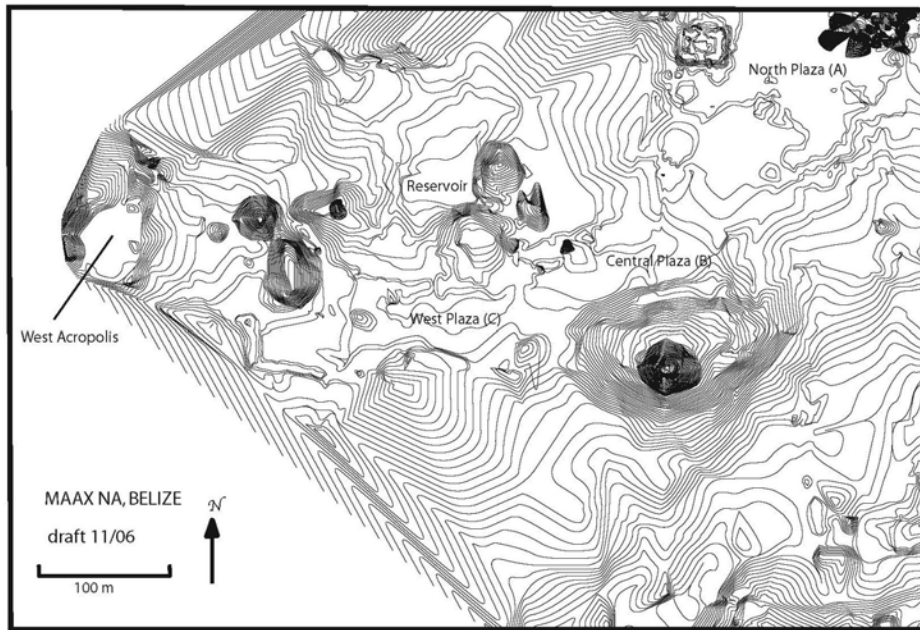


Figure 1. Contour map of Maax Na.

surrounding bedrock. Indeed, many of the presumed monuments at the site seem different to the naked eye from the nearby bedrock. The quality of the stone in this area is generally poor, but the limestone used in putative stelae and altars seems to be finer-grained and of generally higher caliber. In 2004 the discovery of a possible monument quarry north of the site raised the possibility that the Maya at Maax Na were manufacturing monuments in specific areas known for their better stone and transporting them then to their final locations. If the stone found on this causeway proves to have been “imported” from somewhere else at the site, then it clearly represents something artificial and deliberately positioned at that location.

Following this initial work, we moved our center of operations over to the west plaza (Plaza C, Figure 1), which we were able to map in finer detail than before. The better resolution confirmed that the plaza surface is uneven, the western part being raised slightly above the eastern part. Significantly, buildings at this end seem more elaborate than those framing the rest of the plaza, which we have interpreted as the location of a marketplace (King and Shaw 2004). Perhaps the western area served a more elite clientele, then, or even a different function than the rest of Plaza C (*e.g.*, residential or administrative). Mapping in this area also supported our initial finding that the bedrock outcrop on which the south building was partially built was one of a series of such outcrops to the south of Plaza C. This particular one, however, seems to have been

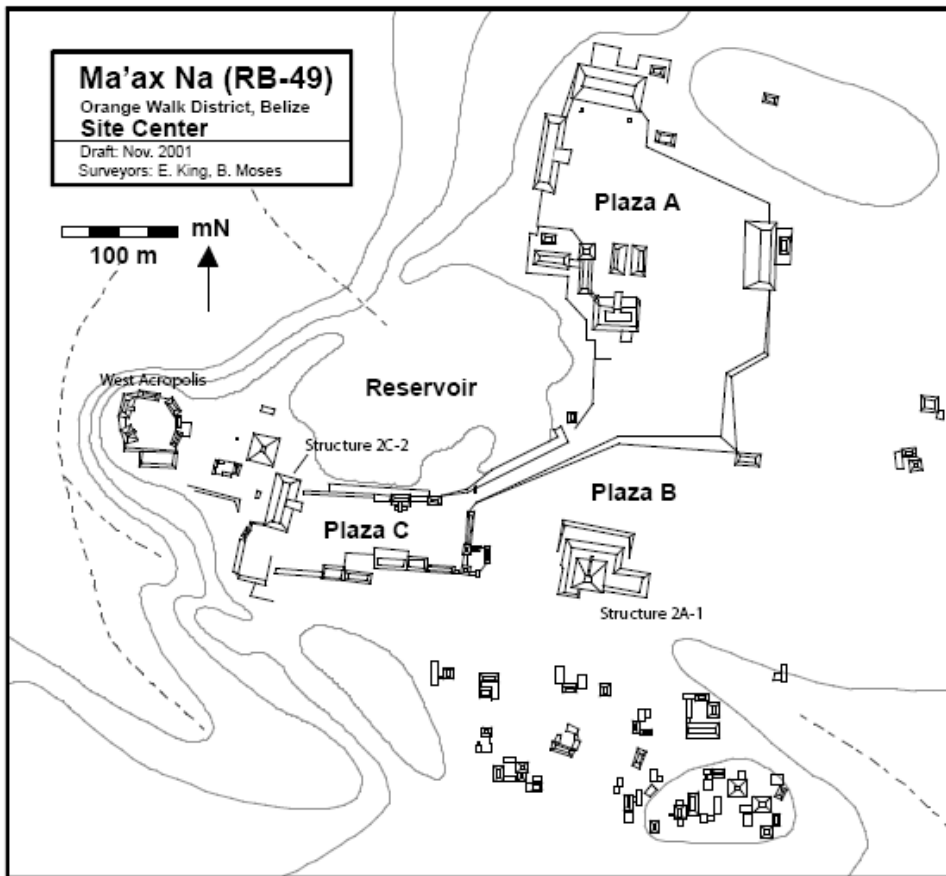


Figure 2. Plan map of Maax Na.

leveled and was the location of a chert tool workshop, with evidence of preforms being brought to the site for final shaping and hafting.

Mapping of this part of the site confirmed other conclusions we had come to, based on walkover survey, and revealed a few surprises. Perhaps most significant was the vindication of our view of the main reservoir, which had proved difficult to decipher due to the density of the vegetation and the unevenness of the terrain. What we had observed was that the principal water-holding part of the reservoir was a rough oblong oriented north-south, which lay immediately north of the middle section of Plaza C's north side. To the west the reservoir appeared to be bordered by a dam, though erosion had flattened out the contours, making it difficult to see. West of the dam we thought we detected two broad terraces. The westernmost one was clear, as it is marked by a very visible terrace wall making a clean "step" down from east to west. The second one could be glimpsed,

but its boundaries were more ephemeral to pinpoint, again because of ground cover and erosion. The fine-grained mapping of this area, however, confirmed that we were correct in all points. Rainwater flowing from the northern part of the site would have collected in the reservoir basin, which excavations have shown is over 2 m deep in the middle and still fills up in the rainy season. The dam delimiting the reservoir's western edge would have acted both to contain the water and to create a controlled spillway for overflow. The excess water, braked by the dam, would have seeped out onto a first built-up terrace and then onto a second one, spreading out subsequently into a wide, flat area west of the site core. The terraces were probably planted for crops, based on the evidence from similar terraces elsewhere in this region (T. and S. Beach, personal communication to King, 2004). Plants could have comprised those typical of "kitchen gardens," grown within easy access of the core, or perhaps more specialized crops needing a certain degree of humidity. The large, flat area to the west might similarly have been planted, but with more basic foods such as maize to serve the agricultural needs of the core, at least partially, as has been hypothesized at La Milpa (Scarborough *et al.* 1995). Limited exploration in this area suggested there were low mounds dotted on top of one or two small knolls, but nothing else for quite a distance. These mounds are of a size and lack of elaboration consistent with the remains of farming-related structures.

The final structural area mapped was the small acropolis and associated structures west of Plaza C. Earlier surveys had revealed that the huge west building (Str. 2-C-2) situated on the plaza actually faced west, forming a group with a small pyramid and its accompanying altar, and with a low, isolated structure, possibly a shrine. A low quadrangular patio group, also in this area, seemed to be a much later addition to this basic configuration. The function of these large buildings, oddly isolated in this part of the site, and their relationship both to Plaza C to the east and to the small acropolis to the west remained unclear. Uncertain also was the nature of the acropolis. At first reconnaissance, this pentagonal-shaped group appeared to comprise a series of elite mounds located on top of large, raised platform, roughly seven meters high. The group is situated at the very end of a narrow "peninsula" that angles westward from Plaza C and that shows steep drop-offs in the terrain to the north, south, and west. The western end of Plaza C and the very large buildings found there effectively block off easy access to this peninsula. On top of the acropolis's basal platform, two large mounds dominate and frame the western sides and at least three low mounds shape the northern and eastern sides, with the southwestern edge sharply defined but void of structures. The privacy of this secluded group and the size of the structures suggested an elite—possibly ruling elite—residence built to safeguard against attack.

Clearing in this area for mapping purposes revealed a different story, however. While the group was restricted in access, its "front" or eastern part seems to have been more accessible than previously thought, by a broad, wide stairway that would have led to an opening between two of the low eastern mounds on the platform. When the peninsula was cleared, as it would have been during the heyday of the site, the high western

mounds, raised as they were on the basal platform, would have been amply visible not only from the foot of the stairway, but for quite a distance beyond. Indeed, clearing them for mapping revealed that they were far larger than previously thought. Our measurements in fact show that the northernmost one is of a size and height comparable to the main pyramid at the site, measuring only four meters less. Given the reinterpreted configuration and the proximity of the other large buildings at the entrance to the peninsula, we now believe this pentagonal group was possibly an early core of ceremonial activity at the site. Certainly, with the better view of the buildings that we now have, its use as a residence seems doubtful. The layout, size, and pyramidal shape of the structures, as well as their high visibility, argues instead for a ritual function, albeit one perhaps less public than such activities elsewhere at the site, given the restricted access. This area may even represent the original site ceremonial core, predating the north plaza, as it is at the foot of the large west building on Plaza C that we found the only deposits at Maax Na securely dated to the Late Preclassic. We have long thought that the acropolis might itself be Late Preclassic, its current basal platform height a result in part of rebuilding over the Classic. Consequently, we put in an excavation pit, described below, in front of the southernmost of its western buildings, to see if we could date the construction sequence. While results are still tentative, this area will clearly bear a more detailed investigation in the future.

EXPLORATION

While mapping was taking place in the site core, we took the opportunity provided by greater visibility to carry out limited explorations to the west and south of Plaza C. Specifically, we wanted to relocate residential areas noted by the first surveyors on the site, but only briefly explored. Consequently, with the help of Paul Cackler (who had been a crew member on the 1997 survey team), we went to an area of putative elite residences that is situated south of the main east-west logging road and due south of the residential area known as the Toknal Plateau, which itself is about 1 km northwest of the site core. This new area occupies the lower slopes of the 240 m peak visible to the west of the Maax Na plateau on local topographic maps. There we saw several groups of various sizes, although none of the mounds appeared to be over about 6 m high. In fact, this area resembles to some extent the Toknal area, though there appear to be more formal mound arrangements, specifically patio groups.

Returning to the more immediate vicinity of the site, we explored a little in the area west of the reservoir and found a large flat area that appeared to be largely devoid of mounds, as noted. We also found that there were no other structures on the ridges between the reservoir terraces and the Plaza C/small acropolis area. We did find a large, flat area that may have been a drainage feature of some kind immediately to the north of the small acropolis. It would have acted to funnel water off the neighboring uplands and structures through a gap that led into the wide flat area already mentioned. It does not look like it would have held standing water, though, as we could detect no dam or terrace barring the outlet onto that wide area. Near that outlet was a large, oblong stone, clearly out of

place, but unfortunately not securely identifiable as a monument. How it got where it is remains a mystery, though.

Southwest of the reservoir area, the picture proved to be quite different. About 250 m west and 230 m south of the small acropolis described above, we encountered an area of densely packed large mound groups, reminiscent of Snob Knob, but configured differently. As on Snob Knob, the interlocking patio groups occupy a natural hill or ridge, with well-delimited sides and steep drop-offs. Rather than fitting together in various configurations, kind of like a checkerboard, as they do on Snob Knob, though, these groups are linearly arranged to conform to the narrow top of the ridge. That means that, except for the groups on the ends, each of the patio groups shares two of its mounds with its neighbors. There are at least four or five groups in one line and other groups on neighboring knolls. From the architecture and a few surface finds, these groups appear to be Late Classic, but only further investigation will tell.

Finally, we took a look at a broad area south of Plaza C and of a zone of outcropping and possible water catchment features we had noted there in previous seasons. This area is due west of Snob Knob and of the elite patio groups south of the main pyramid. We found no evidence for habitation there. However, lack of time and personnel meant we only investigated the area immediately south of Plaza C, so it is possible there are more groups between this area and Snob Knob.

EXCAVATION

A 1.5-meter square test unit (OP E2000) was positioned at the base of the western-most structure in the west acropolis to determine the stratigraphy in the plaza. The unit was excavated in cultural lots following the system used by the PfBAP. The excavation found, surprisingly, that the bedrock was only about 1.25 meters below the surface, suggesting that the small acropolis was actually in part naturally elevated. Several layers of fill with plastered floors were also encountered, however, confirming that the group did go through several phases of renovation. In the SW corner of the excavation unit, a cluster of chert nodules was found that was distinctly different than the other fill. This cluster of chert may be part of a much larger feature, but further testing would be necessary to determine its function fully.

The dating of the construction episodes is currently tentative, awaiting a full ceramic analysis. There were Early Classic sherds found in the lower level on top of bedrock and this might indicate that the construction of monumental architecture in this area began at this time. This would be consistent with what has been found elsewhere in the site, but leaves us with a puzzle. If there is no Late Preclassic here, then what was the large west building on Plaza C (Str. 2-C-2) associated with at that early date?

CONCLUSIONS

Typically, our field season has left us with new questions as well as several answers. Overall, it has confirmed our observations about the layout and size of Maax Na and has sharpened our views of the site. The site core itself is a complexly differentiated area mingling a more ceremonial function in the north with a more mundane center of activities in the west. However, though much of the western part of the site might have lent itself to secular, possibly commercial activities, given the artifacts and architecture found, there are subtle differences between different loci there, both within Plaza C (Figure 1) and beyond. The eastern part of the plaza appears to have been built later and to have been easily accessible; the western part is elevated and seems to have contained more elaborate, if still accessible buildings. South of the plaza there is virtually no habitation, though there is evidence for water control features and for quarrying. West of the plaza, the architecture becomes more elaborate and restricted in access, suggesting a more private, if highly visible, ceremonial area. These variations suggest that a number of different activities took place at this deceptively open and “empty”-looking site. Only further excavation and meticulous comparison of artifact assemblages will enable us to pinpoint exactly what took place where. We plan on investigating and documenting such internal differences as thoroughly as possible as we continue our research.

In terms of the wider region, judging from the results of our explorations, Maax Na is a much larger site than initially anticipated. While the concentration of structures in the core is not as dense as those found in “downtown” La Milpa, it has a particularly large, associated settlement area. As we thought, habitation seems to extend primarily to the west, towards the La Lucha Bajo. The presence of substantial groups as well as smaller mounds in this direction supports our contention that Maax Na in fact controlled the southern reaches of this important wetland and agricultural area, whereas La Milpa controlled the northern end. Despite striking differences in their core layouts Maax Na also resembles La Milpa in its convex system of drainage and catchment basins, which Scarborough (1993) attributes to Late Classic engineering.

The similarities and differences between these sites and among them and other large sites in the Three Rivers Area again begs the question of what function each played in regional dynamics (King and Shaw 2004). Maax Na does not seem to have flourished as long as La Milpa or Dos Hombres, its nearest neighbors. Late Terminal Classic is scarce or absent in most deposits and it seems Maax Na was abandoned early on in Tepeu II/III. Nonetheless, it overlapped with the other sites for a significant period of time and apparently thrived, supporting an expansive settlement zone. The size and wealth of the structures found there as well as the size of those in the core suggest the site and its inhabitants enjoyed not only a measure of prosperity, but some independence from La Milpa. In fact, in terms of associated settlement alone, Maax Na is probably larger. The fact that this habitation zone is only 6 km from the La Milpa core prompts us to wonder what the relationship was between these two large sites. The resources available from the La Lucha Bajo and other neighboring areas would have put both sites on a solid

economic footing. Was Maax Na then politically subordinate to La Milpa or do the extent of its settlement and the impressive size of the structures found therein suggest that it remained more apart? How were these two sites integrated together on the regional level and how do Dos Hombres, Gran Cacao, and other centers in this area fit into the picture? Solving such problems will take further, tailored research at Maax Na and, eventually, the comparison of assemblages from like contexts at all of these sites.

REFERENCES CITED

King, E., and L. Shaw

2004 A Heterarchical Approach to Site Variability. The Maax Na Archaeology Project. IN *Heterarchy, Political Economy, and the Ancient Maya*, V. Scarborough, F. Valdez Jr., and N. Dunning, eds., pp. 64-76. Tucson, AZ: The University of Arizona Press.

Scarborough, V.

1993 Water Management in the Southern Maya Lowlands: An Accretive Model for the Engineered Landscape. IN *Economic Aspects of Water Management in the Prehispanic New World*, V. Scarborough and B. L. Isaac, eds., pp. 17-69. Research in Economic Anthropology, Supplement 7. Greenwich, CN: JAI Press.

Scarborough, V. L., M. E. Becher, J. L. Baker, G. Harris, and F. Valdez Jr.

1995 Water and Land at the Ancient Maya Community of La Milpa. *Latin American Antiquity* 6(2):98-119.

QUALM HILL: RECONNAISSANCE, REDISCOVERY, AND MAPPING

Paul R. Cackler, Programme for Belize Archaeological Project
Stanley L. Walling, Community College of Pennsylvania
David M. Hyde, The University of Texas at Austin
Fred Valdez, Jr., The University of Texas at Austin

INTRODUCTION

The prehistoric Maya site of Qualm Hill was first reported the Rio Bravo Archaeological Project survey project in northwestern Belize conducted in 1988 and 1990 (Guderjan et al. 1991). The site was originally mapped by Michael Lindeman, Judy Cusik, Helen Haines, and Jason Yaeger in July 1990. The site map and brief description was subsequently published in *Maya Settlement in Northwestern Belize*, where it was described as a very large site with structures 10 to 15 m high, including two major plazas, a third smaller plaza, a ballcourt, and an acropolis (Guderjan et al. 1991:77, 81).

RELOCATING THE SITE

Qualm Hill was the last major site reported by Guderjan et al. (1991) that had not been visited by members of the Programme for Belize Archaeological Project (PfBAP). However, in May 2006 (after significant discussions and planning between Cackler and Valdez), a small survey team from PfBAP was assembled to relocate the site. The initial survey team consisted of Paul Cackler, Balta Canche, and Mani Magana, after which the site was also visited by Vern Scarborough, Peter Davis, Stan Walling, and David Hyde. Subsequently, Stan Walling and David Hyde participated in mapping and documenting the site.

Qualm Hill was originally described as being located “on a large flattened hilltop between the Rio Bravo and Boothe’s River” (Guderjan et al. 1991:81) The provided UTM coordinates placed the site approximately 5 km due east of the gatekeeper’s house at Cedar Crossing. However, Guderjan’s survey was done prior to the availability of handheld GPS units, and as he noted, the published locations are only approximate due to the difficulties of navigating through the jungle using only 1:50000 scale maps with 20 m contours (Guderjan et al. 1991:56). Therefore, the PfBAP survey team identified three potential hilltops in the general area, all located east from Cedar Crossing. Fortunately for us, Qualm Hill was found on the first hilltop, approximately three kilometers due east from Cedar Crossing.

The survey team cut a small brecha due east from Cedar Crossing using a handheld compass. In the interest of reaching our objective, the brecha took the path of least resistance, avoiding major tree-falls and other unusually dense sections of jungle, but maintained a general easterly direction. The trail was flagged regularly with hot-pink flagging tape, and was clearly visible during the 2006 summer season. However, for

approximately 1.5 km the trail passes through a bajo, and without maintenance, this section will become increasingly difficult to follow. Walking time from Cedar Crossing to Qualm Hill using the current trail is approximately one hour and 15 minutes each way, but this time could probably be reduced to one hour each way with additional clearing and improved routing of the path.

SITE DESCRIPTION

The site was explored using the Guderjan et al. map, and the map was found to be a useful representation of the site. Each structure on the map can be easily identified during a walking tour of the site. However, we made two important discoveries that were not previously reported: a probable stela in the northeast section of Plaza A, and a large altar in the center of Plaza B (Figure 1). Neither monument displayed any evidence of carving.

We further tested the map by cutting a transect North – South through the ballcourt alley in Plaza A to the northernmost part of Plaza B, and an East-West transect across the southern section of Plaza A. A total of 29 points were taken from the transects to 12 structures or features using a 50 meter fiberglass tape, and a Suunto sighting compass mounted on a monopod. Building heights were estimated, and time permitting, verified with a Suunto handheld clinometer. Overall, the Guderjan et al. map is accurate, and apparent differences between our measurements can probably be attributed to issues associated with image reduction for the original publication. For example, the Guderjan et al. map shows the distance between Structure 4 in Plaza A to Structure 15 in Plaza B to be between 196 and 218 meters, depending on whether the scale in the final publication is 5 mm to 10 m or 5.5 mm to 10 m. We recorded the distance in the field as 194 meters. We did note minor differences (5% or less) in the size and placement of some buildings. These differences are expected given that neither project used transits, and both projects had limited amount of time to spend at the site. The differences are reported here simply to confirm the size (and location) of the site. All survey maps contain error, but it is usually not quantified by archaeologists (McDow 2000). The published structure numbering system does not conform to PFBAP conventions, but we will continue to refer to individual structures by the designations given in Guderjan et al. (1991) until a significant project effort is undertaken at Qualm Hill by the PFBAP.

Plaza A

Plaza A is the largest plaza at the site and contains the largest single temple at the site (Structure 1). The temple is surrounded by a large low platform that further defines the eastern side of the plaza. Guderjan et al. (1991:81) reported that the looters' trench on the back side of the temple showed three phases of construction and contained sherds from the Early Classic. They estimated the temple to be 15 m tall, and we estimated it to be 11 m tall based on our clinometer measurements.

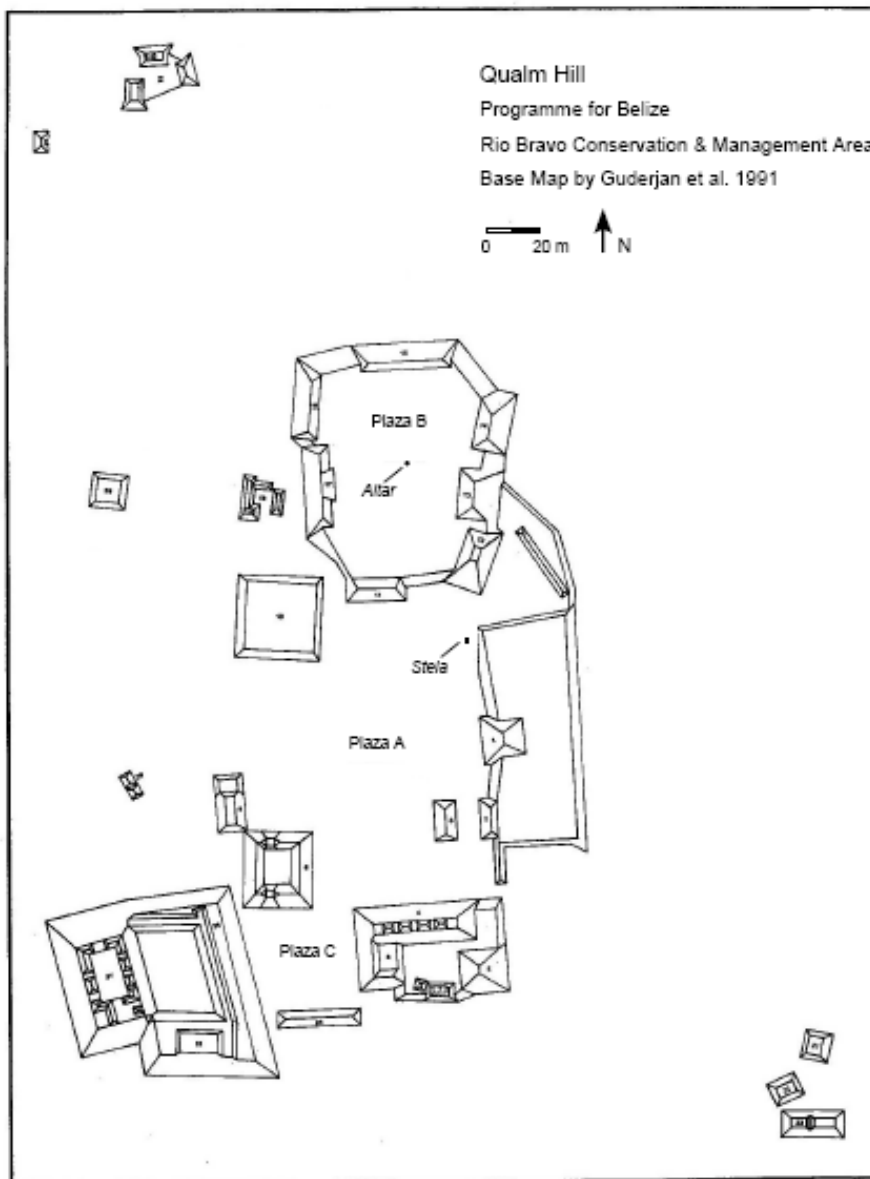


Figure 1. Map of Quam Hill by Micheal Linderman, Judy Cusak, Helen Haines, and Jason Yaeger (from Guderjan et al. 1991). Stela in Plaza A and alter in Plaza B added by Programme for Belize Archaeological Project in 2006.

The ballcourt is formed by Structures 2 and 3 (Figure 2). We took detailed measurements of the ballcourt to allow it to be compared with the growing number of ballcourts reported at other sites in the region. We did our best, making a special effort, to record the true dimensions of the ballcourt by estimating the original location of its features. In other words, if one simply measured the ruined structures as they exist today, the resulting measurements would be larger than ours. We measured the playing alley to be 6.6 m wide by 13 m long, with an azimuth of 0 degrees (non-declinated, Figure 3). We estimated the height of Structures 2 and 3 to be four meters above the playing alley (Figures 4 and 5). Structure 2 is better preserved than Structure 3, and we took the majority of our measurements on Structure 2.



Figure 3. Photograph showing ballcourt playing alley.

As reported by Guderjan et al. (1991:81), the southern side of Plaza A is formed by Structures 4-7, which together form the smaller of the two acropoli at the site. Although it is the smaller acropolis, Structure 4 is not small, being a large range shaped building measuring 18 m along its east-west base that faces Plaza A. Guderjan et al. (1991:81) reported its height as 15 m, and we visually estimated it to be 12 m tall. The acropolis is focused inward towards the raised interior courtyard that is found on the south side of the range structure. Structure 5 has been looted, and appears to be the eastern shrine for the court, which Guderjan et al. (1991:81) estimated to be 10 m tall.



Figure 4. Photograph showing height of Structure 2.



Figure 5. Photograph showing height of Structure 3.

The west boundary of Plaza A is marked by Structures 8-10, although there is a significant distance between Structures 9 and 10. We observed these buildings in passing, but did not have time to investigate them. As reported by Guderjan et al. (1991:81), Structure 8 is a fully enclosed courtyard on a high platform, Structure 9 is a small range building, and Structure 10 is a large, low, flat platform.

We identified a small probable stela in the northeast section of Plaza A (Figure 1). The stela is not carved, and is lying flat on the ground oriented in a north-south direction. It is 1.8 m long, 0.6 m wide, and 0.4 m thick.

As stated above, Plaza A is the largest plaza at the site, includes the largest single temple, the only ballcourt, and the only stela thus far found at the site. It also has the most open plaza layout, all of which suggest that Plaza A was the primary public space at Quam Hill.

Plaza B

Plaza B is the second largest plaza at the site. As reported by Guderjan et al. (1991:81), it is approximately one meter higher than Plaza A, and this rise forms the dividing line

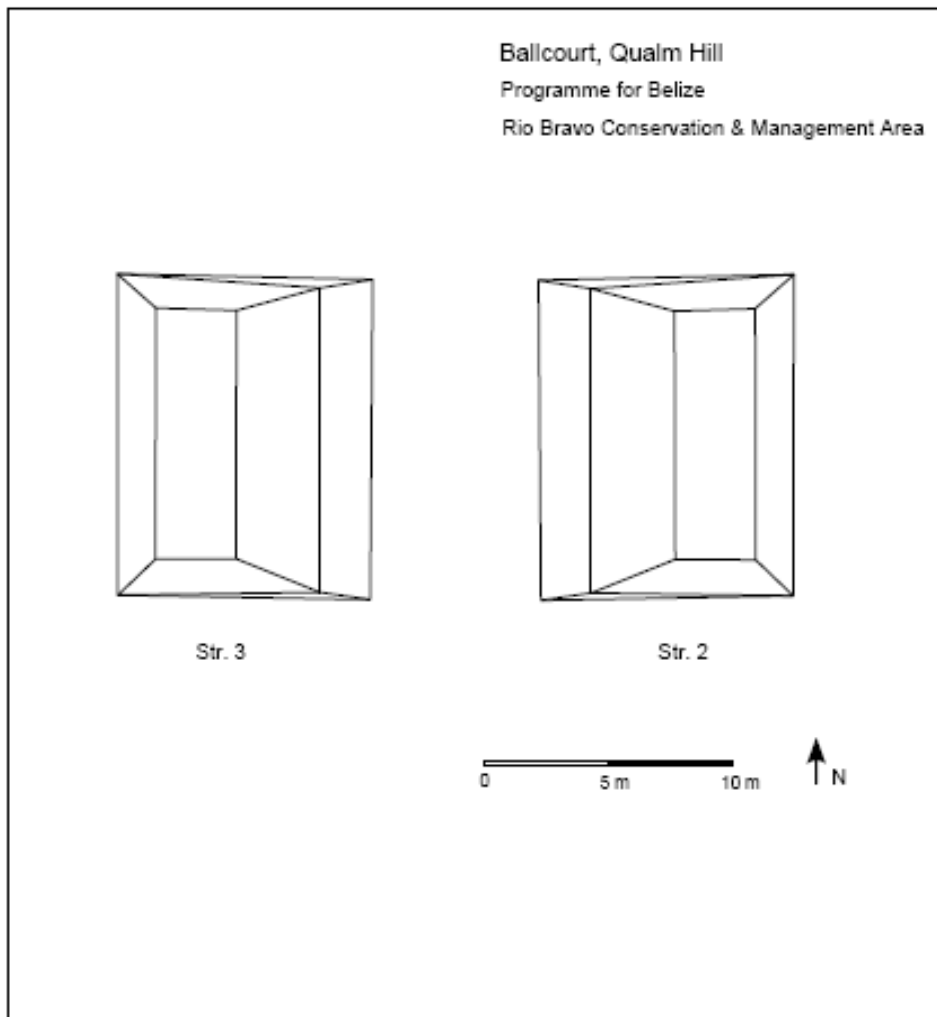


Figure 2. Map of ballcourt at Qualm Hill by Paul Cackler, Stanley Walling, and David Hyde. Dimension of unexcavated playing alley is 6.6 by 13 meters. Height of ballcourt structures was estimated at 4 meters. Structure 2 abuts against a large platform that is not shown (see Figure 1).

between the two plazas. Structures 11-17 are found around the edge of the plaza. Structures 11, 15, 16, and 17 rise approximately three meters above the surface of Plaza B. Structures 12, 13, and 14 on the east side of the Plaza are much taller. We visually estimated the height of Structures 12-14 to be between 5 m and 6.5 m above the Plaza B surface.

We found a large altar located approximately in the center of Plaza B (Fig. 1). The altar is broken into two pieces, but estimated to be 1.5 meters in diameter, and approximately 1 m high. We did not see any signs of carving on this monument.

Plaza B is a sizeable plaza, but in contrast to Plaza A, is a much more closed space. The access is restricted by the structures ringing its perimeter, and to enter, one must climb up from Plaza A.

Plaza C

Plaza C is located to the southeast of Plaza A, and is the smallest Plaza at the site. The east side of Plaza C is formed by the smaller acropolis already described (Structures 4-7). The north side of Plaza C is marked by the raised courtyard of Structure 8, which leaves room for passage into Plaza A. The southern boundary is formed by Structure 24, a low range structure.

The western side of Plaza C is delineated by the main acropolis, consisting of Structures 25-27. The acropolis is built on a hilltop that can be seen from some distance, and is the highest point at the site. The survey trail in 2006 led us straight up the back side of the acropolis. To access the acropolis from Plaza C, one must climb up over a wall formed by Structure 26, and then down slightly into the completely enclosed courtyard. The western side of the courtyard is Structure 27, in which is found the inner court of the acropolis.

The perimeter of Structure 27 is completely surrounded by 4 m high (estimated height) range structures. All of the range structures have a series of dome shaped tops, which combined with the height of the structures, suggests that the buildings had full height masonry walls with corbelled arches. The narrowness of the inner court, surrounded by these four meter high structures, makes it the most dramatic and restricted space at the entire site. Without further investigation, it is not clear how one would pass from the small inner court to the larger enclosed courtyard to the east. Neither is it immediately clear how one would descend from the acropolis down to Plaza C.

Plaza C is surrounded by structures with the most restricted access at the site. The two acropoli and Structure 8 are the most obvious residential areas at Qualm Hill. Because the main acropolis is built on a hilltop, it is difficult to determine its true construction volume from survey alone, but visually it is certainly the largest and most imposing structure at the site.

SETTLEMENT AREA

We took two GPS points at the site. The first was taken at the southwest corner of the inner courtyard at the main acropolis (Structure 27): 87483, 56850. The second was taken on the slumped staircase of Structure 17 in Plaza B: 87602, 57008. These GPS points place Qualm Hill just 4.5 km south of Dos Hombres, and only a few kilometers from the site of Chawak But'o'ob (Walling et al. 2005).

In addition, the easterly brecha from Cedar Crossing to Qualm Hill passes a number of interesting natural and archaeological features. After crossing the Rio Bravo, a dry seasonal drainage was crossed, followed by a large bajo. Approximately 1.5 km from Cedar Crossing, the terrain starts to rise as one crosses a 40 m contour line. As soon as the brecha lifts out of the bajo, we encountered very dense settlement, including individual housemounds, L-shaped housemounds on platforms, and formal courtyard patio groups. These mounds are surrounded by numerous linear features, berms and chich (cobblestone) mounds that run both parallel and perpendicular to the slope. This area was not formally investigated, but some linear features were one to two meters high and 50 to 100 m long. A GPS point was taken on the largest patio group: 86801, 56791.

Finally, on the last visit of the season to Qualm Hill, we discovered a historic site on the east side of the Rio Bravo. We did not obtain a GPS point, but the site is located immediately east of Cedar Crossing on the east bank of the Rio Bravo. We found a surface scatter, of least 150 x 50 meters, of historic artifacts including turn of the century bottles. One observed patent medicine bottle was "Colden's Liquid Beef Tonic." A blob top finish was observed, along with cobalt blue bottle fragments, a condiment bottle, and a patent medicine bottle fragment from Binghamton New York. This site is a promising candidate for the historic site of Qualm Hill, which archival sources indicate was located in this general area (Metzgen and Cain1925). Qualm Hill was the seasonal headquarters of the British Honduras Company during the mid 1800's, and was the location of an infamous raid by Marcus Canul of the Icaiche Maya in 1866.

CONCLUSION

In summary, the PfBAP expedition to re-locate the site of Qualm Hill was very successful. The site was located, the map verified, a new stela and altar discovered at the site, and a previously unknown area of dense settlement was identified. A historic site near Cedar Crossing was discovered that is an excellent candidate for Qualm Hill, the seasonal headquarters of the British Honduras Company during the 19th century.

REFERENCES CITED

McDow, D. A.

2000 *Mapping, Scale, and Accuracy: New Methodologies Employed in Northwestern Belize, Central America*. Unpublished Master Thesis, Department of Anthropology, University of Texas at Austin.

Guderjan, T.H., M. Lindeman, E. Ruble, F. Salam, and J. Yaeger

1991 Archaeological Sites in the Rio Bravo Area. In *Maya Settlement in Northwestern Belize: The 1988 and 1990 Seasons of the Rio Bravo Archaeological Project*, edited by T. H. Guderjan, pp. 55-88. Labyrinthos, Culver City, CA.

Metzgen, Monrad S. and Henry E.C. Cain

1925 The Handbook of British Honduras. Waterlow and Sons, London.

Walling, Stanley, Peter Davis, Sandra Dias, and Melissa DeVito

2005 Report of the 2004 Rio Bravo Archaeology Project: Site R.B. 47, Chawak But'o'ob. in *Programme for Belize Archaeological Project: Report of the Activities of the 2004 Field Season*. F.Valdez, ed., pp.115-143, Occasional Papers No. 4, Mesoamerican Archaeological Research Laboratory, TheUniversity of Texas at Austin, Austin.

RESULTS OF THE 2006 INVESTIGATIONS AT SAY KAH, BELIZE

Brett A. Houk, Texas Tech University
Grant Aylesworth, University of New Brunswick
Liwy Grazioso Sierra, ENAH-INAH
Rebecca E. Bria, Vanderbilt University

INTRODUCTION

This report documents the 2006 season of the Say Kah Archaeological Project (SKAP). Previous research by SKAP included two short seasons limited to mapping, examination of looters' trenches and materials, and small-scale excavations. The 2006 season, supported by a field school from the University of New Brunswick (UNB), marked the first intensive excavations of the ruins.

SKAP began in 2004 and continued in 2005 with a brief second season. A largely self-funded research program, the SKAP was assisted by the Programme for Belize Archaeological Project (PfbAP) which aided and facilitated by supplying logistical support, as well as labor and staff. The personnel on the project in 2006 included Brett A. Houk, overall SKAP director; Grant R. Aylesworth, field school director for UNB and co-project director for 2006; Liwy Grazioso Sierra, field director; Rebecca Bria, supoperation director; Marieka Brouwer, field assistant; Erin Gill, field assistant; and Norma Garcia, project conservator. Two Belizean workers, Sergio Murillo and Carlos Quezta, and 18 field school students from Canada and the United States performed the excavations.

BACKGROUND ON THE PROJECT

Say Kah in Yucatec Mayan translates "place of leaf cutter ants" or "place of big ants" (Hubert Robichaux, personal communication 2006). Guderjan et al. (1991) originally named the site *Say Ka*, but Houk et al. (2005) adopted the common form for *kah*, the spelling used in Yucatec Mayan, which is the dialect spoken today in northern Belize by Mayan speakers.

The ruins of Say Kah are in the tropical rainforest of northwestern Belize within the Three Rivers Region study area (Figure 1). After the site's initial documentation by the Rio Bravo Archaeological Project in the early 1990s (Guderjan et al. 1991), the ruins' location remained elusive for nearly a decade. Researchers from both The University of Texas' PfbAP and Boston University's La Milpa Archaeological Project (LaMAP) attempted to locate the site based on its reported position to no avail. While mapping a survey transect from Dos Hombres to La Milpa, then doctoral student Jon Hageman discovered a large architectural group southeast of La Milpa in 1999. Members of LaMAP visited this group in 2002 and confirmed that it was indeed Say Kah (Hageman

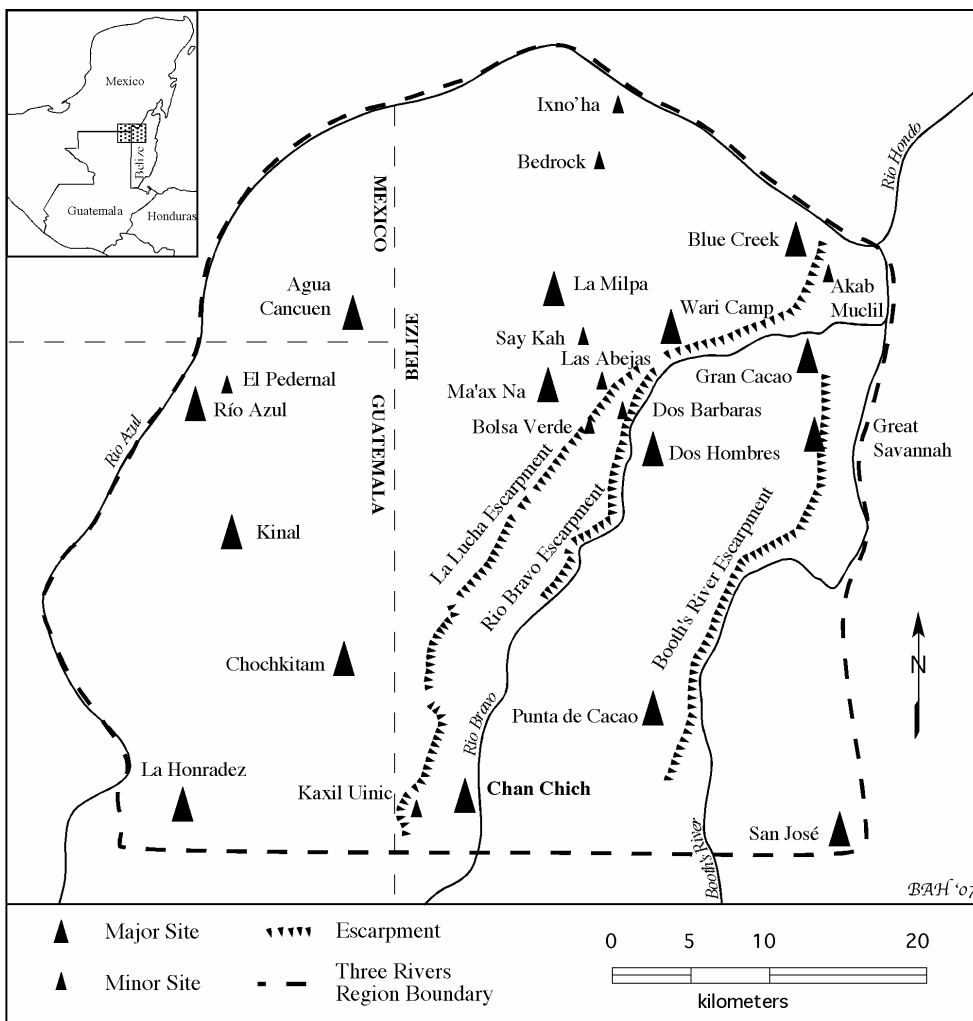


Figure 1. Map of the Three Rivers Region.

et al. 2006; Houk et al. 2006). The site lies southeast of La Milpa, not southwest as originally reported by Guderjan et al. (1991).

Say Kah is one of many small centers dotting the landscape between the major sites in the Three Rivers Region, but it has attracted a great deal of interest since it was first visited by archaeologists largely because of its proximity to the major site of La Milpa. At the time of its discovery, Guderjan et al. (1991:73) speculated that perhaps “Say Ka was a major La Milpa outlier that functioned to supply water for agricultural and other uses to

the larger La Milpa-Say Ka population.” Indeed, given its proximity to La Milpa, it is safe to say that Say Kah fell within what Tourtellot, Everson, and Clarke (2003) have called the La Milpa suburban or residential area, a zone with a 5-km radius around La Milpa. Originally, LaMAP researchers believed Say Kah was “a prime candidate for a secondary administrative center subject to La Milpa,” but its elusiveness prevented further elaboration of this hypothesis (Tourtellot, Everson, and Clarke 2003:98).

More recently, in their attempt to understand the internal organization of La Milpa, Tourtellot, Estrada Belli, et al. (2003) identified a “vast physical cosmogram” surrounding La Milpa Centre, the main architectural groups of the site. This cosmogram forms “a virtual cross in a circle or square, with its four limbs and corners to the cardinal directions and La Milpa Centre as its focus” with “the cross-axes...marked by outlying special minor centers on hilltops that lie about 3.5 km distant toward each of the four cardinal points” (Tourtellot, Estrada Belli, et al. 2003:48). The minor center on the southern axis is a group called La Milpa South, discovered at the southern end of a survey transect cut from La Milpa Centre. As Tourtellot, Everson, and Clarke (2003:104) observe, however, La Milpa South’s identification as a component of this cosmogram may be fortuitous and somewhat self-fulfilling.” Indeed, the rediscovery of Say Kah will certainly impact this cosmogram model, as the site appears to lie only a few hundred meters from La Milpa South.

SUMMARY OF PREVIOUS INVESTIGATIONS BY SKAP

Shortly after the site was rediscovered, Houk launched SKAP and led a short, self-funded season of research at Say Kah in 2004 (Hageman et al. 2006). Assisted by a handful of students and staff members from PfbAP, Houk’s team spent seven days at the site (between April 18 and April 24), exploring and documenting looters’ trenches in structures in the main plaza at the site (Hageman et al. 2006; Houk et al. 2006). The investigations of the structures on the western side of the Main Plaza confirmed earlier observations made by Guderjan et al. (1991) of multiple construction episodes.

The 2005 season of SKAP marked the second small-scale study of the site (Houk et al. 2006). The limited investigations at Say Kah in 2005 confirmed the 2004 conclusion that the buildings on the western side of the Main Plaza underwent significant modification during the Classic period. Dating the various construction phases, unfortunately, remained problematic given the limited recovery of diagnostic ceramic sherds from sealed contexts. The final phase of Structure A-5 dates to the Tepeu 2 phase of the Late Classic and was a terraced platform, which covered an earlier, partially destroyed building dubbed Rosalita by the excavators. Only the southeastern corner of the Late Classic platform was exposed in 2005. Rosalita, Structure A-5 Sub 1, was covered in a thin layer of red plaster and was characterized by rolling corners and steps. Rosalita covers an even earlier construction phase, named Carmelita, or Structure A-5 Sub 2. This earlier building was only observed in a small section of the excavations and within the looters’ tunnel into the mound, but it contains intact modeled stucco elements near the

top of the preserved portion of the building (Houk et al. 2006). Based on architectural style, it was believed that the Carmelita and Rosalita phases of the building date to the Late Preclassic or Early Classic.

The partial destruction and seeming rejection of the Rosalita structure may be related to a drastic remaking of Say Kah's monumental center, which included an expansion of the Main Plaza's northern end. Given the site's proximity to La Milpa, it is probable that this architectural change is a reflection of political and social reorganization at the site in the Late Classic, presumably because of influence from the expanding center of La Milpa (Hageman et al. 2006; Houk et al. 2006).

In summary, the 2004 and 2005 investigations at Say Kah determined that the site underwent significant expansion during the Late Classic. This expansion accompanied a dramatic transformation of the architecture at the site (Houk et al. 2006). In the case of the western side of the Main Plaza, the earlier structures, then thought to date to the Late Preclassic or Early Classic, were partially destroyed and then entirely buried by the Late Classic buildings, which were remarkably different in terms of architectural style. Along with renovation of the buildings, the Late Classic occupants expanded the Main Plaza to the north, essentially doubled the plaza's size. This event completely transformed the architectural space at the center of the site (Houk et al. 2006).

2006 RESEARCH OBJECTIVES

The short-term goals for the 2006 season were rather basic: to increase our understanding of the nature of Say Kah's chronology, layout, and cultural landscape. Towards this end, Houk (2005) proposed the following objectives for the 2006 season: (1) additional test pitting to clarify the chronology of the Main Plaza; (2) continued exploration of Structure A-5; (3) continued exploration of Structure A-4; (4) initiate other architectural and chronological excavations, time permitting, to gather additional chronological data from sealed deposits, and (5) continued mapping of the area surrounding the Main Plaza to document the structures to the south and the natural topography of the site. These types of data are needed to understand the site's placement, development, and function, which will allow an investigation into the larger issue of Say Kah's relationship to La Milpa by revealing the significance and timing of the architectural transformations of the site.

SUMMARY OF THE 2006 SEASON

The actual investigations performed differed slightly from the proposed research. The 2006 investigations continued under the designation of Operation (Op) 1. The excavations followed the sequence of the previous seasons; the first unit opened in 2006 was Suboperation (Subop) C. In 2006, SKAP assigned 13 suboperation designations (Subops C–O). Subops F and O, however, were not excavation units; the former was the designation given to investigations of looters' trenches and the latter defined the collection of material from looters' backdirt. Several suboperations were just extensions

of other units. Excluding Subops F and O, the units represent seven distinct excavation areas.

In 2006, the project accomplished the following:

1. Plaza test pitting at the base of Structure A-1, the base of the northern and southern faces of Structure A-2, the base of Structure A-5, and the base of Structure A-8.
2. Continued documentation of looters' trenches (under the designation of Subop F) on Structures A-5 and A-9. A previously unknown trench on the western face (back side) of Structure A-5 was discovered, but not profiled.
3. Continued exploration of the final phase of architecture on Structures A-4 and A-5.
4. Mapping of the southern end of Group A and re-mapping of the Main Plaza.
5. Preliminary reconstruction drawings of the Main Plaza.

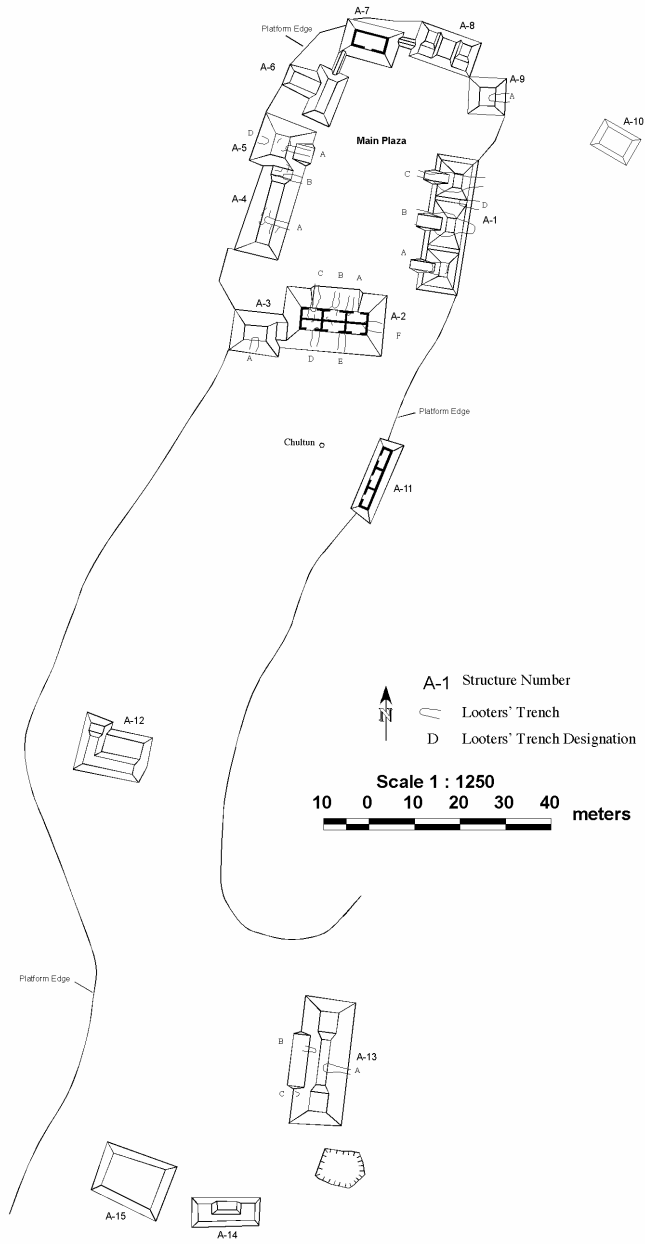
RESULTS OF INVESTIGATIONS

Mapping

The short seasons of investigations in 2004 and 2005 had not allowed for an assessment of the accuracy of the site map for the area south of the Main Plaza. Therefore, in 2006, tape and compass mapping of the southern part of Group A was initiated. Because errors were found in the map of the Main Plaza, structures in the northern part of Group A were re-mapped. Groups B and C, which lie to east of the Main Plaza, were revisited and related spatially to the Main Plaza using tape-and-compass methods. Group C was mapped in 2004, but Group B has not yet been mapped.

The revised map (Figures 2 and 3) corrects serious errors in earlier versions, particularly in the orientation of the structures at the southern end of Group A. Table 1 presents the heights of mounds in the Main Plaza and the newly mapped structures to the south.

Group A includes 15 mapped structures set on a modified natural ridge that runs north-south, with the Main Plaza occupying the northern end of the ridge. Excavation data and visible surface features reveal that the Maya modified the margins of the ridge and artificially leveled the surface through the addition of boulder- to cobble-sized fill. Nine buildings surround the Main Plaza, with a tenth, Structure A-10, occupying a slightly lower topographic bench or ledge to the east. Access to the Main Plaza in the Late Classic was presumably through the gap between Structures A-1 and A-9 at the northeastern corner of the plaza and through the gap between Structures A-1 and A-2 at the southeastern corner. Structure A-3 blocks what may have been an access point at one time in the southwestern corner.



BAH'07

Figure 2. Map of Group A at Say Kah.

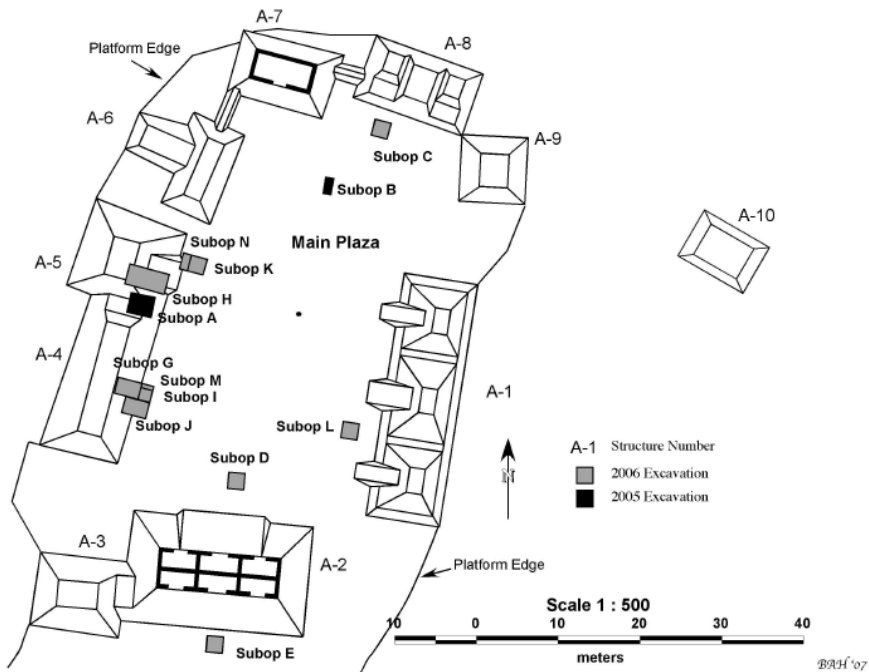


Figure 3. Map of the Main Plaza at Say Kah showing locations of 2005 and 2006 excavation units.

Table 1. Heights of Mounds Above Modern Ground Surface

Structure	Height (m)
A-1	5.56
A-2	7.07
A-3	3.83
A-4	4.23
A-5	5.94
A-6	2.3
A-7	2.5
A-8	2.98
A-9	2.81
A-10	~1.00
A-11	~2.00
A-12	~2.50
A-13	~8.10
A-14	~2.00
A-15	~2.00

The other structures in Group A have not yet been explored. They include a long and low range structure built on the eastern edge of the modified ridge 17 m south of the Main Plaza, a low platform supporting an L-shaped structure approximately 90 m south of the Main Plaza, and a group of three structures approximately 150 m south of the Main Plaza (see Figure 2). The southern group is interesting because it includes the largest mound at the site, Structure A-13, a west-facing range structure of unknown age and function. Structure A-13 is approximately 8.1 m high. It faces an informal courtyard that is bordered by two low (2 m high) mounds, Structures A-14 and A-15, on the south. A two meter deep quarry or cistern is a few meters south of Structure A-13.

The natural ridge continues to the south of the southern group of mounds, gradually diminishing in elevation. Mapping crews observed, but did not document, more small mounds approximately 50 m south of the Structure A-13 group. To the east, beyond the limits of the 2006 investigations, the ridge drops steeply.

Excavation Results

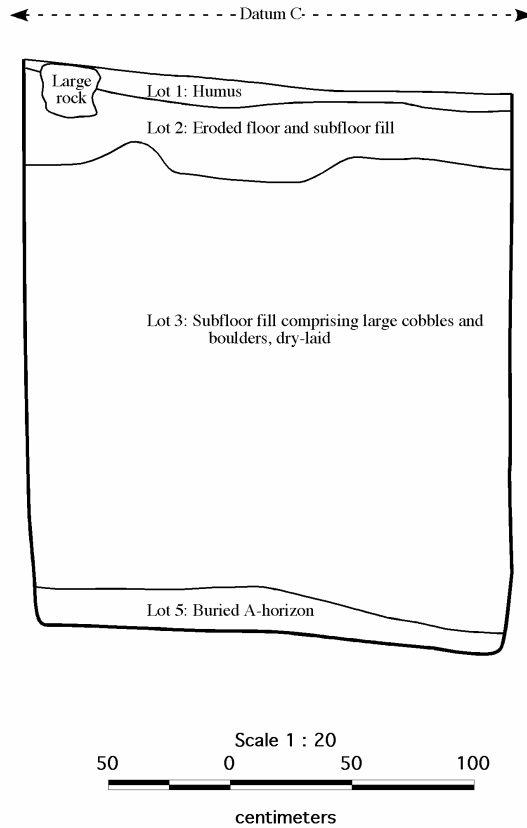
Figure 3 shows the location of the 2005 and 2006 excavation units. To date, efforts have concentrated on defining the construction sequence of the Main Plaza through a series of test pits and an investigation of the architecture of Structures A-4 and A-5. All of the looters' trenches that could be safely entered in the Main Plaza have been profiled.

Test Pitting Results

Houk et al. (2006) hypothesized that the northern half of the Main Plaza was a late addition at the site based on preliminary test pit data from 2005. Because excavations in 2005 documented multiple construction episodes at Structures A-4 and A-5, it was assumed that test pits in the southern half of the Main Plaza would encounter at least two floors but that test pits in the northern half would potentially encounter only one floor, which would be associated with the Late Classic renovation and expansion of the plaza. To test this hypothesis, four 2 x 2 m test pits (Subops C, D, K, and L) were excavated in the Main Plaza. A fifth 2 x 2 m unit (Subop E) was excavated south of Structure A-2 to explore the construction history south of the Main Plaza.

Subop C

Subop C was placed approximately 2 m south of Structure A-8, oriented 20° east of magnetic north, parallel to the long axis of the mound. This unit was excavated to bedrock, which was encountered 2.40 m below surface, making Subop C the deepest unit excavated in 2006 (Figure 4). The unit's excavators defined five lots (Table 2). As was expected, the excavations documented one construction episode represented by a thick layer of dry-laid fill—composed of chert and limestone cobbles and boulders, placed directly on the original ground surface—that was capped by smaller cobbles and a plaza floor. The plaza floor had completely deteriorated and was represented by small limestone pebbles found at the top of Lot 2 and the base of Lot 1.



BAH 07

Figure 4. Northern profile of Subop C.

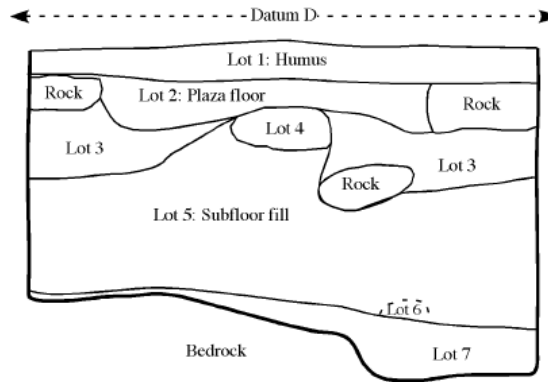
Table 2. Summary of Lots from Subop C

Lot	Excavation Description	Interpretation	Thickness	Ceramic Age
1	Humus layer with small limestone pebbles at base	Humus layer and top of eroded plaza floor	16 cm	Tepeu 2-3
2	Rubble in marly matrix	Remains of eroded plaza floor and top of subfloor fill	19 cm	Tepeu 2
3	Large, irregular limestone and chert cobbles and small boulders with little fine matrix	Dry-laid subfloor fill	157 cm	Tzakol
4	Concentration of sherds found at base of fill; did not appear to be from one vessel or even of same type	Possible midden material included in fill (?)	~1 cm	Tzakol
5	Organic matrix	Buried A-horizon	24 cm	Tepeu 2/Tzakol

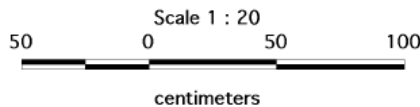
The ceramics in Lot 1 reflect the last occupation of the group during the Tepeu 2-3 phase of the Late Classic (Table 2; Appendix A). The Tepeu 2 ceramics at the base of the unit, as well as in Lot 2, date the construction event to the Late Classic, ca. A.D. 650–850.

Subop D

To examine the southern half of the Main Plaza’s construction sequence, Subop D was excavated approximately five meters north of Structure A-2. Bedrock was encountered approximately 130 cm below surface (Figure 5) in the deepest portion of the unit. The excavators defined seven lots while excavating Subop D (Table 3). These lots appear to represent a single plaza construction event that used a combination of soil/sediment, irregular limestone and chert cobbles and small boulders as subfloor fill. This fill was placed directly on the natural bedrock, which was uneven and irregular and showed no signs of having been modified for use as a floor. The surface of the plaza floor (Lot 2) was preserved in a small portion of the unit and encountered approximately 13 cm below modern ground surface and 87–117 cm above bedrock. The fill included a mix of Tzakol, Tepeu 2, and Tepeu 2-3 ceramics, indicating a Late Classic age for the plaza floor (Lot 2).



- Lot 3: Large, irregular limestone and chert cobbles in loamy matrix
- Lot 4: Concentration of sherds found in north-central part of unit
- Lot 6: Concentration of marine shells in fill (50 cm by 40 cm area)
- Lot 7: Concentration of darker soil near base of fill



BAH'07

Figure 5. Northern profile of Subop D. (Field drawing by A. Martens, K. Jones, and M. McMorran).

Table 3. Summary of Lots from Supob D

Lot	Excavation Description	Interpretation	Thickness	Ceramic Age
1	Humus layer mixed with limestone pebbles	Humus layer and top of eroded plaza floor	13 cm	Tepeu 2-3
2	Piece of preserved plaster floor	Preserved fragment of final plaza floor	8 to 15 cm	No ceramics associated with lot
3	Large, irregular limestone and chert cobbles in loamy matrix	Subfloor fill	35 cm	Tepeu 2/Tzakol
4	Concentration of sherds found in north-central part of unit	Possible midden material included in fill (?)	5 cm	Tzakol
5	Large limestone cobbles and small boulders with dark clay loam matrix	Subfloor fill	60 to 90 cm	Tzakol
6	Concentration of marine shells in fill (50 cm by 40 cm area)	Possible midden material included in fill (?)	5 cm	Tepeu 2-3
7	Concentration of darker soil near base of fill collected for flotation sample	Pocket of darker matrix in fill	2 cm	No ceramic data available

Mixed in with the fill was a concentration of sherds (Lot 4) near the top of fill and a concentration of marine shells (Lot 6) near the base. These may represent midden material collected elsewhere and brought in as fill. The marine shells included specimens from the families Arcidae (n=5) (see Andrews [1969:21–23, plate 13:88–89]) and Veneridae (Venus clams) (n=2) (see Andrews [1969:29, plate 19:100–101]). Several specimens showed evidence of having been modified.

Subop E

Subop E was the only excavation unit placed outside of the Main Plaza. It was located near the base of the southern face of Structure A-2. Surprisingly, this unit encountered only a single stratum of apparently natural clay loam matrix overlying bedrock at approximately 40 cm below surface (Table 4). Bedrock in this area was extremely hard limestone with an irregular surface, showing no signs of modification or leveling. Near the top of the unit, several limestone blocks and cobbles were found intermixed in Lot 1. The ceramics from the unit include primarily Tepeu 2-3 types (Appendix A).

Table 4. Summary of Lots from Supob E

Lot	Excavation Description	Interpretation	Thickness	Ceramic Age
1	Humus layer with a few limestone blocks and pieces of rubble over bedrock	Natural matrix with some structure debris from Structure A-2	40 cm	Tepeu 2-3/Tzakol and Chicanel trace

Subop K

Located at the base of the eastern face of Structure A-5, Subop K served as both a chronological test pit and a means of exploring the architecture on the building. The area was covered in looters' backdirt, which was removed as Lot 1 during excavations. The backdirt, which came from Looters' Trench A on Structure A-5, contained numerous modeled stucco fragments similar to those recovered during the 2004 and 2005 investigations of Looters' Trench B on Structure A-4 (Houk et al. 2006). Bedrock in this unit was approximately 60 cm below modern ground surface, which includes the thick

layer of looters' spoil. Bedrock was only 20 cm below the pre-looting ground surface along the eastern limits of the unit. The bedrock was capped by a 20-cm thick layer of marly matrix that may represent an eroded floor surface. This possible floor meets the lowest of two steps found in the western half of the suboperation. Those steps were explored with the addition of Subop N and are discussed further below.

The few ceramics collected from the unit included Tepeu 2-3 types with Tzakol and Tepeu 1 types in the looters' backdirt (Table 5). The sherds collected from Lot 4, the possible eroded floor, were unidentifiable, leaving the age of the floor unknown.

Table 5. Summary of Lots from Supob K

Lot	Excavation Description	Interpretation	Thickness	Ceramic Age
1	Cobbles limestone blocks mixed with recent organic material; lot included numerous modeled stucco fragments	Looters' backdirt from trench into Structure A-5; stucco fragments from Structure A-5 Sub 1	19 to 50 cm	Tzakol to Tepeu 1
2	Humus with some tumbled limestone blocks	Humus with some collapse debris	44 cm	No ceramics collected from lot
3	Possible steps to Structure A-5 made of cut stone blocks	First step of staircase on eastern face of Structure A-5	n/a	Tepeu 2-3
4	Thin layer of marly matrix over bedrock	Possible eroded plaster floor used to level bedrock (?)	20 cm	Unidentified

Subop L

The final test pit initiated in 2006, Subop L, was unfortunately not completed. The 2 x 2 m unit was located near the base of the western face of Structure A-1 between the southern and central looters' trenches. The only two lots excavated included a humus layer mixed with collapse debris (Lot 1) and the top of an underlying zone of collapse debris (Lot 2) from Structure A-1. Excavations were terminated within Lot 2, approximately 110 cm below surface. The recovered ceramics from the two lots include Tepeu 2-3 types (Table 6).

Table 6. Summary of Lots from Supob L

Lot	Excavation Description	Interpretation	Thickness	Ceramic Age
1	Humus with limestone cobbles; lot included one large cut limestone block measuring 104 x 86 x 21 cm	Topsoil with some collapse debris or tumble from looters' backdirt	90	Tepeu 2-3
2	Marly matrix with limestone cobbles; lot terminated arbitrarily because season ended	Collapse debris	20	Tepeu 2-3

Within Lot 1, excavators recovered a large rectangular block of limestone measuring 104 x 86 x 21 cm. Similar blocks have been observed elsewhere at Say Kah and at other sites in the region, including Guijarral (Houk, personal observation 1995). The other Say Kah

specimens include a 78 x 62 x 24 cm block on the eastern surface of the Structure A-4 mound (exposed in the southern profile of Looters' Trench B), an approximately 60 x 57 x 20 cm block visible in the looters' trench in the western end of Structure A-2, and a badly eroded block near the northern base of Structure A-2, measuring 70 x 54 x 24 cm. These blocks all appear to have tumbled from the nearby buildings.

Summary of Test Pit Results

The test pits in the Main Plaza confirmed that the northern end of the plaza was elevated substantially more than the southern end, but the assumption that multiple plaza floors would be encountered in the southern test units proved to be incorrect. This is a surprising discovery. Structures A-4 and A-5 clearly have two major construction episodes (see below), one during the Early Classic and a second during the Late Classic. Despite this, the test units only discovered evidence for one plaza floor, which was constructed during the Tepeu 2 phase of the Late Classic based on the recovered ceramics. Therefore, either the earlier plaza floor was removed prior to the expansion of the Main Plaza, which seems unlikely, or the Early Classic occupants of the site used largely unmodified bedrock as a plaza surface.

Another possibility that warrants additional testing is that the one Tepeu 2-3 lot (Lot 6) from Subop D, which is providing the Late Classic construction date for the southern part of the plaza, is intrusive. Lot 6 was the concentration of marine shells found within the fill, and the excavators collected less than a dozen sherds in association with this deposit. It is possible the shells were buried as a cache during the Late Classic, possibly during the expansion of the plaza. If this scenario is true, the southern part of the plaza floor was constructed during the Early Classic and it was resurfaced during the Late Classic. This resurfacing would have accompanied the construction of the northern expansion of the plaza. In this case, both the Early and Late Classic building phases would have shared a common plaza floor level in the southern half of the Main Plaza. Possible supporting evidence for this hypothesis comes from the construction fill in the plaza, which differs in composition in the northern and southern test pits. In the northern part of the plaza, the fill comprises dry-laid, large cobbles and boulders with very little fine matrix. In the southern end, the fill is composed of cobbles in a loamy to clay-loam matrix.

Regardless of the history of the southern half of the plaza, the northern half was clearly constructed in one single episode, raising the floor of the plaza over two meters above the natural bedrock (Figure 6). Tepeu 2 Ceramics from the construction fill in Subop C date this event to ca. A.D. 650–850. Presumably, the structures surrounding the northern half of the plaza (Structures A-6–A-9) were built in one episode as part of the plaza expansion.

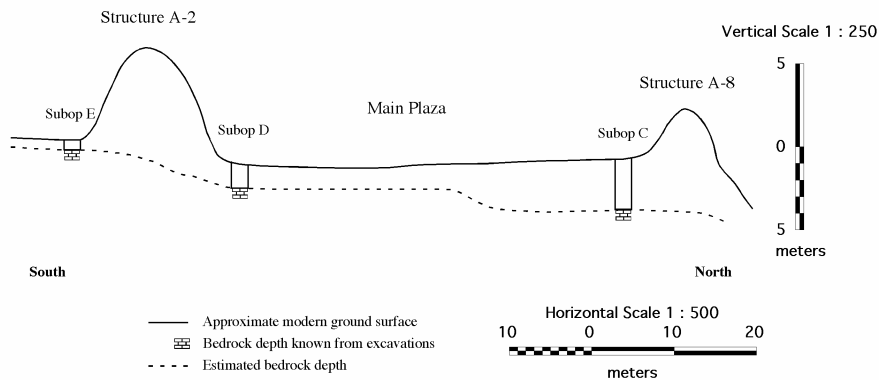


Figure 6. Eastern cross-section of Main Plaza. Vertical exaggeration is two times. BAH'07

Excavations at Structure A-4

Subops G, I, J, and M were located in the eastern face of Structure A-4, straddling Looters' Trench A. The excavations used the exposed profile in the trench as an initial guide. The four units were oriented 15° east of north, parallel to the long axis of the mound. Subop G measured 2 x 3 m, with its long axis parallel to the primary axis of the building. The unit's southern edge bordered the northern edge of the looter's trench. The excavation unit was initially placed on the eastern face of the mound; Subops I and M, measuring 1.5 x 1.5 m and 1.5 x 0.5 m, respectively, were later opened on the eastern side of Subop G to extend the excavations to the base of the mound. These three units formed a 4.5 x 2 m block extending from the base of the mound to about half way up its eastern face. Subop J, another 2 x 3 m unit, was opened south of Subop G. This unit bordered Subop G and included the looters' trench. In all four units, the topsoil was removed, and underlying collapse debris was excavated (Table 7). Excavations halted at intact architecture.

The exposed architecture shows that Structure A-4 was masonry building supported by a low platform. Excavators uncovered the perimeter wall of the platform in Subop J, I, and M. The platform appears to rest on a non-plastered or eroded surface (exposed in Subop I). On top of this platform, the excavations encountered the remains of an entrance, a wall that may have been the southern doorjamb, and a step to enter the building (in Subop J). In Subop G, the northern doorjamb was encountered; it was not as well preserved, but both jambs are at the same elevation. A wide looters' trench divides Subop G from Subop

Table 7. Summary of Lots from Supobs G, I, J, and M

Subop	Lot	Excavation Description	Interpretation	Thickness	Ceramic Age
G	1	Humus layer with some rubble	Humus layer with some collapsed debris	22 cm	Tepcu 2-3
	2	Marly matrix with limestone blocks and rubble over intact architecture	Collapse debris	variable	Tepcu 3
I	1	Looters' backdirt comprising cobbles, blocks, and recent organic material	Looters' backdirt from Structure A-4	16 cm	Tepcu 3
	2	Humus with some cobbles and blocks	Humus with collapse debris	20 cm	Tepcu 2-3
	3	Marly matrix with rubble	Collapse debris	40 cm	No ceramics collected from lot
	4	Marly matrix with limestone pebbles and cobbles	Collapse debris	40 cm	Tepcu 2-3
	5	Marl and limestone pebbles in marly matrix	Eroded plaza floor	n/a	Lot not excavated
	6	Structural wall in western half of unit, 31 to 40 cm high, with Lot 5 at its base	Eastern face of platform of Structure A-4	n/a	Lot not excavated
J	1	Humus at top of lot with marly matrix and rubble at base	Humus and collapse debris removed as one lot	45 cm	Tepcu 2-3
	2	Intact architectural elements defined as door jamb, step, and construction fill	Collapse debris overlying intact architecture, all considered one lot by excavators	97 cm	Tepcu 2-3
	3	Looters' backdirt in base of trench	Looters backdirt and recent debris filling base of trench	19 cm	Tepcu 2-3
M	1	Humus with limestone cobbles	Humus mixed with some collapse debris	15 cm	No ceramics collected from lot
	2	Marly matrix with limestone cobbles	Collapse debris	20 cm	Tepcu 2-3
	3	Marly matrix with limestone cobbles	Collapse debris	15 cm	Tepcu 2-3

J, but it is likely that both jambs defined the access to a room in Structure A-4. The entrance is almost two meters wide. The excavations did not reach the back wall or any corners of the structure, so it would be premature to advance any other interpretation of the building, except that the exposed part is different from the substructures visible in the looters' trench (see Houk and Lyndon 2005). Structure A-4 is a low platform with at least one room in the upper building. The structure is large enough to possibly have had two more rooms, but further excavations would be needed to define its size and shape.

The excavations appeared to show that the entrance to this room was closed with lines of big stones and filled in with a very solid and stable construction fill. This fill was made of irregular stones with mortar that was difficult to excavate. The mortar used looked a bit like plaster and was a strong agglutinant. Therefore, there may have been a later construction phase not recognized during the excavations and extremely poorly preserved. If so, the excavated structure would have been the penultimate phase. Ceramics from the collapse debris covering the structure were Tepcu 2-3 types. Alternatively, it is possible that the fill was actually collapse debris, mortared together by melting/poured plaster. If that were true, then the exposed structure would be the final construction phase.

The 2006 excavations were not able to penetrate the later architecture, but earlier construction episodes are visible in the looters' trench (see Houk and Lyndon 2005). Based on similarities in architectural style, the earlier architecture is presumably of the same age as the Carmelita/Rosalita phases (Early Classic) documented in Trench B at the juncture between Structures A-4 and A-5 (Hageman et al. 2006; Houk et al. 2006).

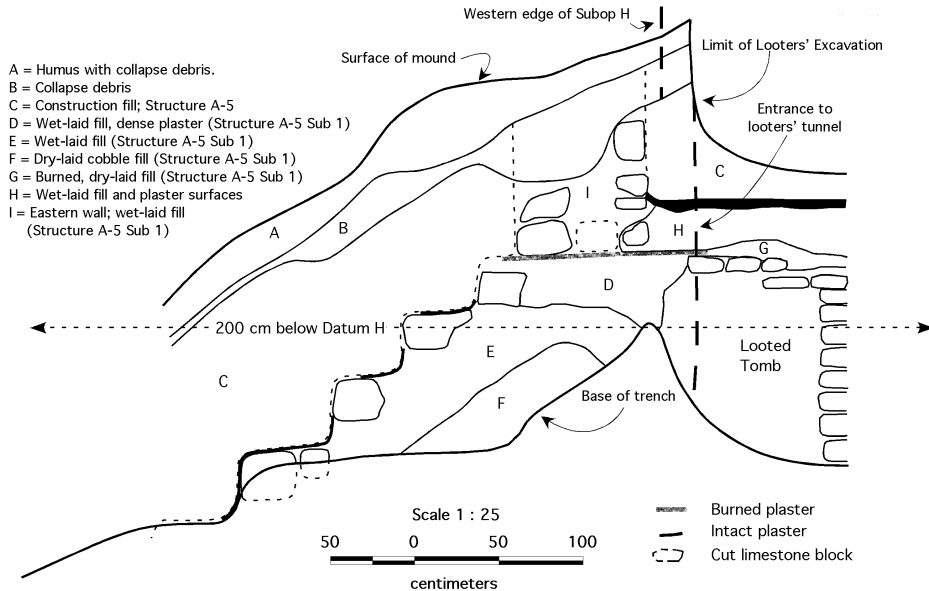
Excavations at Structure A-5

The investigations of Structure A-5 included profiling and documenting Looters' Trench A into the structure and excavating a large unit (Subop H) on the southern side of the trench, approximately 50 cm north of Subop A, which was excavated in 2005 (see Houk et al. 2006). Additional architectural data were gathered from Subops K and N, two contiguous excavation units at the base of the mound.

Profiling of Looters' Trench A

The profiling of the looters' trench revealed that Structure A-5 Sub 1 is a well-preserved building with plastered steps, characterized by slightly battered risers (Figure 7). The construction phase, presumably part of the Rosalita building defined in 2005, had been chopped and truncated by the final construction phase. Five steps are visible in the southern profile of the trench, climbing to a platform surface, which once supported a masonry building. The risers of the steps have rounded nosings (the top of the riser is a nosing or nose) and a slight batter, giving them a very different look than the later phase of construction. The eastern wall of the building on top of the platform is partially preserved and exposed in the profile. The wall is 80 cm thick, and the preserved portion is 80 cm high. West of the wall, the platform continues and shows evidence of several remodeling phases of the floor within what is presumably a room on top of the building. Structure A-5 Sub 1 was covered in a thick layer of construction fill related to the final phase of the building. The final phase of construction was heavily deteriorated and not apparent in the profile; however, it was documented in Subop H, discussed below.

Another feature exposed in the trench is a chamber that is possibly a looted tomb (or perhaps an in-filled room) on the southern side of the looters' trench, positioned beneath the room associated with Structure A-5 Sub 1. The chamber could not be entered because it is located within the collapsing and unstable looters' tunnel into the mound. From what could be observed from outside of the tunnel, the chamber measures approximately 1 m east-west; the north-south dimensions were not determined because collapsed debris from the looters' trench obscured the feature. The exposed vertical portion of the chamber measures 1 m high, although the floor of the chamber was not exposed. The walls of the chamber are composed of cut limestone blocks with crude stucco mortar, and their surfaces do not appear to have been plastered. The roof of the chamber is composed of large, flat limestone blocks measuring approximately 20–40 cm long. Above these stones is a layer of small (2–4 cm in diameter) burned cobbles within wet-laid plaster fill. Curiously, the plaster surface beneath the exterior wall of the room is also burned,



BAH'07

Figure 7. South profile of Looter's Trench, Structure A-5.

suggesting the entire superstructure of the platform may have been burned at some point. It seems this burning event occurred during the process of constructing Structure A-5 Sub 1, with the surface's burning occurring just prior to the room's construction over it, potentially in the form of an offering over the chamber. Similar burned floors are present in the profiles of trenches in Structure A-2.

Subops H, K, and N

The excavations in Subop H did not penetrate the final construction phase, which was not nearly as well preserved as the visible portions of Structure A-5 Sub 1. The excavations encountered the remains of an inset stair on a two-tiered terrace, which corresponds with the final phase of architecture encountered on the building in 2005 (Houk et al. 2006). Excavators documented seven poorly preserved steps, which climbed a total of 2.4 m (Figures 8 and 9). At the base of the lowest exposed step was a small landing or long step over which portions of a plaster surface were found fairly intact. However, Subop H did not extend past this landing to the base of the mound, which was covered in a thick drape of looters' backdirt. Therefore, it is not currently known how many steps remain unexcavated at the base of the mound. Three basal steps to the building were exposed in Subops K and N, which were two meters west and one meter north of Subop H, but it is not clear if these would have continued to the steps in Subop H or terminated at a landing

near the base of the building. If the stair continued uninterrupted, at least five more steps may be in the unexcavated area between the suboperations.

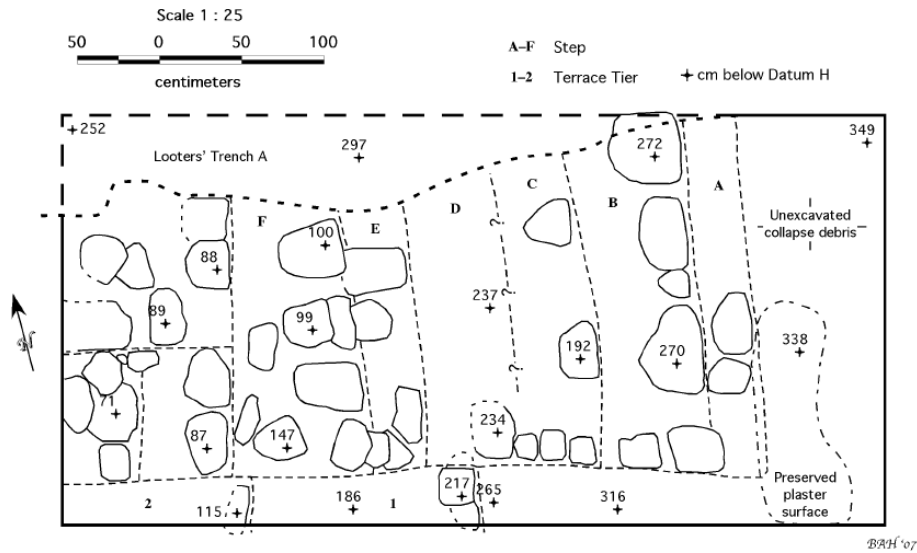


Figure 8. Plan of Structure A-5 in Subop H. (Field drawing by R. Bria, A. Gauvreau, and K. Ellis).

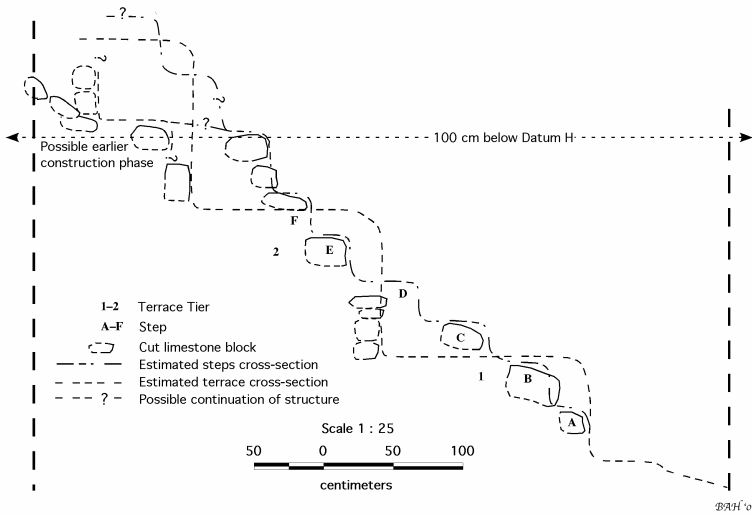


Figure 9. North cross-section of Structure A-5 in Subop H along 105° east of north. (Field drawing by R. Bria and A. Gauvreau).

The terrace tiers on the platform measured approximately 80–100 cm high by 120–140 cm deep. This final phase of construction was badly deteriorated, and no plaster—except for the remnant on the landing—remained on any of the steps or blocks. The top of the building was not preserved at all, but presumably included a third-tier and possibly one or two more steps leading to either a platform surface or building on top (see Figure 9).

The ceramics found in the collapse debris above the final architecture were Tepeu 3 types (Table 8; Appendix). These are presumably related to the final occupation of the structure.

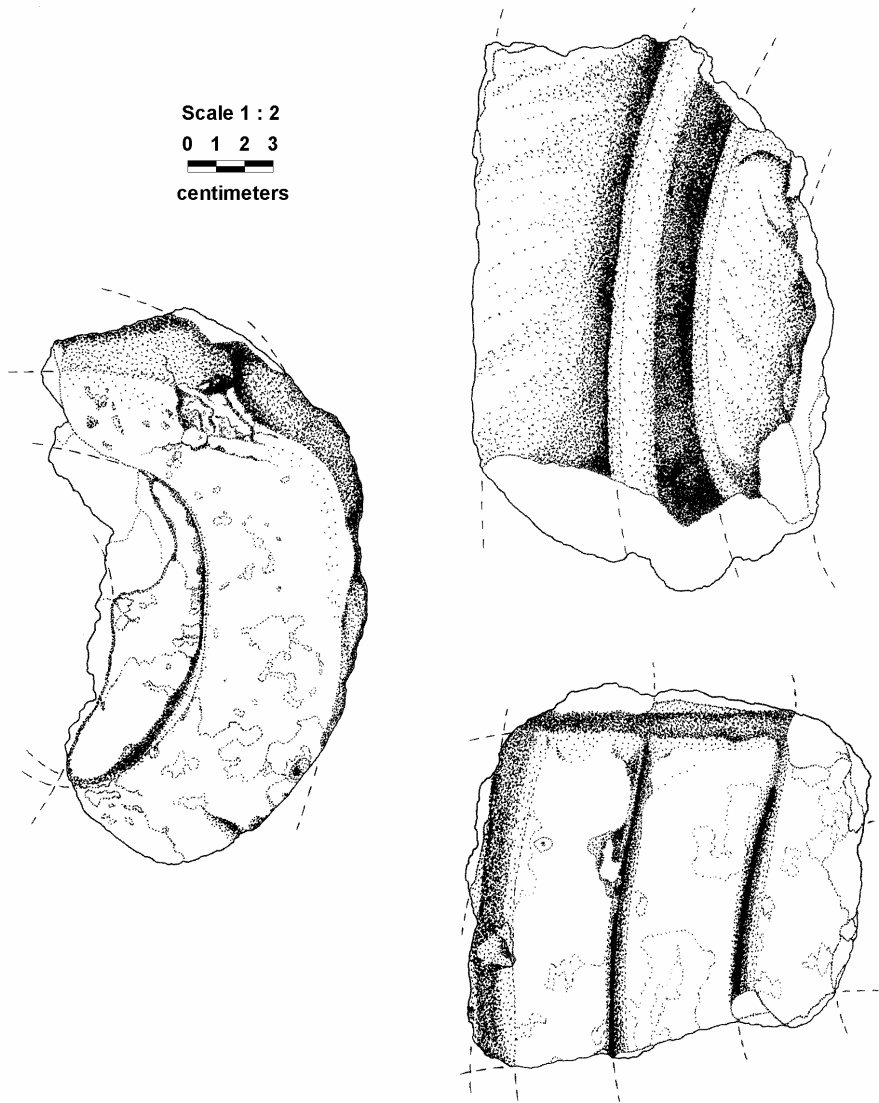
Table 8. Summary of Lots from Supob H

Lot	Excavation Description	Interpretation	Thickness	Ceramic Age
1	Humus layer and collapse debris over intact architecture	Humus layer with some collapsed debris, removed as one lot	96 cm	Tepeu 3

Discussion of Structures A-4 and A-5

As has been known since the 2004 documentation of looters' trenches at the site (see Houk and Lyndon 2005), Structures A-4 and A-5 include Late Classic buildings covering earlier, more elaborate structures. The 2006 excavation data suggest that these earlier structures are Early Classic in age, not Late Preclassic as once expected. This finding confirms Guderjan et al.'s (1991) preliminary data, which also indicated the earlier structures contained Tzakol ceramics. Although the 2006 season did not expose any more of the earlier buildings, the work did include an examination of the profile of Trench A in Structure A-5, which has exposed the plaster stair of Structure A-5 Sub 1, (Rosalita). Unfortunately, it is still not possible to reconstruct what this earlier building may have looked like because too little of it has been exposed in excavation.

Structure A-4 Sub 1 is still only known from the two looters' trenches into the mound, and it is not clear what this earlier building looked like or how it articulated with Structure A-5 Sub 1. What is clear, however, is that one or both of the buildings included an elaborate modeled stucco panel, mask, or façade. During the removal of looters' backdirt from the eastern face of Structures A-4 and A-5, additional pieces of modeled stucco were recovered (Figure 10). Some fragments include incisions, while others are simply modeled. The fragments are primarily red, although a few have two different shades of red. Fragments recovered in 2005 included specimens with black pigment as well, suggesting the original façade was a bichrome or polychrome design. One fragment from 2004 included two layers of stucco, demonstrating that at least part of the design was repaired or resurfaced at least once. A small bit of charcoal was collected from that specimen in 2004, but it proved to be insufficient for a radiocarbon date.



BAH'07

Figure 10. Stucco fragments collected in 2006. (Illustrations by Mariëka Brouwer).

Some fragments resemble elements on Copan's Early Classic Rosalila structure (see Agurcia and Fash 1991:100–101). These designs include some scroll-like fragments and others that resemble parts of feathers, curved designs, and small circular elements. Early Classic modeled stucco designs are known from a handful of sites in the Three Rivers

Region, including several examples from the Rio Azul area. There is a modeled stucco decoration, enhanced with polychrome paint, on the roof comb of a “very Early Classic” building at El Pedernal, near Rio Azul. At Rio Azul itself, the roof comb of Structure A-2 has modeled stucco designs, including glyphs, while Structure A-2 Sub has a polychrome façade or roof comb, which is visible in a looters’ trench (Adams 1999). The only other reported decorations in the region are from Blue Creek, where Guderjan (2004) documented a set of Early Classic stucco panels adorning a stair-side outset on Str. 9.

CONCLUDING REMARKS

The 2006 season of investigations accomplished a great deal at the site and advanced our understanding of the chronology and nature of Say Kah along several fronts. Some of the more important results are the corrections to and expansion of the map of Group A, the documentation of the final architecture at Structures A-4 and A-5, and the extensive plaza test pitting, which expanded our understanding of the architectural evolution of the Main Plaza. The ceramic data suggest that the first major occupation at the site took place in the Early Classic, and the second occurred in the Late Classic. The site appears to have been occupied from the Early Classic (based on Tzakol lots) through the Terminal Classic (based on Tepeu 3 lots).

During the Early Classic, the southern half of the Main Plaza was built. This probably included early versions of Structures A-1, A-2, A-4, and A-5. The plaza would have been open to the north. The western buildings may have been the most elaborate, sporting a modeled stucco design, possibly high on the buildings. Early Classic tombs may have been constructed in Structures A-2 and A-5 at this time (see Houk and Lyndon [2005] for a discussion of the possibility of a tomb being in Structure A-2). These Early Classic buildings may have had either an earthen plaza floor or a partially modified bedrock floor.

During the Late Classic, the Main Plaza was expanded to the north, and the Early Classic structures were extensively remodeled. Structures A-4 and A-5 were chopped and the destroyed portions of the buildings used as fill for the Late Classic buildings. The plaza floor was possibly elevated in the south by approximately one meter, and over two meters of fill – much of it boulder-sized rocks—was brought in to create the northern extension of the Main Plaza. At this time, Structures A-6, A-7, A-8, and A-9 were presumably built. It is also likely that Structure A-3 was added to the western end of Structure A-2 at this time. This expansion, therefore, enclosed the once rather open Main Plaza. Whereas access had been possible from the north, the southeast, and the southwest during the Early Classic, the Late Classic remodeling limited access to the southeastern corner and possibly the northeastern corner of the Main Plaza.

ACKNOWLEDGEMENTS

The authors thank the other three members of the professional staff, Norma Garcia, Marieka Brouwer, and Erin Gill, who all did fantastic jobs on the project. Merieka

illustrated the stucco fragments in this report. Thanks also go to Lauren Sullivan, the project ceramicist. She quickly analyzed our ceramics and helped us interpret the results. We also thank Fred Valdez, Jr. for allowing SKAP to operate under his permit and utilize the R.E.W. Adams research camp for three straight years. Without his assistance, none of this research would have occurred. Special thanks are extended to Dr. John Morris and Mr. Paul Francisco of the Institute of Archaeology (IoA) for visiting us this season. Additional thanks go to the IoA for approving our research design. Finally, we extend our thanks to the UNB students (Sarah Durham, Katie Ellis, Craig Evans, Alisha Gauvreau, Kate Jones, Sarah Little, Jacqueline Lovett, Jessica MacLean, Katie MacLean, Adam Martens, William McGrath, Christopher McIlveen, Morgan McMorrان, Stephanie Peters, Allison Ritcey, Kristine Roesler, Jackie Sadowski, and Samantha Wentzell) and workers (Sergio Murillo and Carlos Quetzal); they moved all the dirt and made the trip truly enjoyable.

REFERENCES CITED

- Adams, Richard E. W.
1999 *Río Azul: An Ancient Maya City*. University of Oklahoma Press, Norman.
- Agurcia Fasquelle, Ricardo, and William L. Fash
1991 Maya Artistry Unearthed. *National Geographic* 180(3): 94–105.
- Andrews IV, E. Wyllys
1969 *The Archaeological Use and Distribution of Mollusca in the Maya Lowlands*. Publication 34. Middle American Research Institute, Tulane University, New Orleans.
- Guderjan, Thomas H.
2004 Public Architecture, Ritual, and Temporal Dynamics at the Maya Center of Blue Creek, Belize. *Ancient Mesoamerica* 15:235–250.
- Guderjan, Thomas H., Michael Lindeman, Ellen Ruble, Froyla Salam, and Jason Yaeger
1991 Archaeological Sites in the Rio Bravo Area. In *Maya Settlement in Northwestern Belize*, by Thomas H. Guderjan, pp. 55–88. Maya Research Program and Labyrinthos, Culver City, California.
- Hageman, Jon B., Brett A. Houk, and Rebecca E. Bria
2006 The Rediscovery of and Initial Excavations at Say Ka, Belize. Paper presented at the 71st Annual Meeting of the Society for American Archaeology, San Juan, Puerto Rico.

Houk, Brett A.

2005 Proposed 2006 Investigations at Say Kay. Manuscript on file with Programme for Belize Archaeological Project, Mesoamerican Archaeological Research Laboratory, The University of Texas, Austin.

Houk, Brett A., and Michael G. Lyndon

2005 The 2004 Investigations of at Say Kah: A Pilot Project. In *Programme for Belize Archaeological Project: Report of Activities from the 2004 Field Season*, edited by Fred Valdez, Jr., pp. 45–61. Occasional Papers, Number 4. Mesoamerican Archaeological Research Laboratory, The University of Texas at Austin.

Houk, Brett A., Rebecca E. Bria, and Michael G. Lyndon

2006 Salvaging Say Kah. *Mono y Conejo* 4:21–28.

Tourtellot, Gair, Francisco Estrada Belli, John J. Rose, and Norman Hammond

2003 Late Classic Maya Heterarchy, Hierarchy, and Landscape at La Milpa, Belize. In *Heterarchy, Political Economy, and the Ancient Maya: The Three Rivers Region of the East-Central Yucatán Peninsula*, edited by Vernon L. Scarborough, Fred Valdez, Jr., and Nicholas Dunning, pp. 37–51. The University of Arizona Press, Tucson.

Tourtellot, Gair, Gloria Everson, and Norman Hammond

2003 Suburban Organization: Minor Centers at La Milpa, Belize. In *Perspectives on Ancient Maya Rural Complexity*, edited by Gyles Iannone and Samuel V. Connell, pp. 95–107. Monograph 49. Cotsen Institute of Archaeology, UCLA.

Tourtellot, Gair, Francisco Estrada Belli, John J. Rose, and Norman Hammond

2003 Late Classic Maya Heterarchy, Hierarchy, and Landscape at La Milpa, Belize. In *Heterarchy, Political Economy, and the Ancient Maya: The Three Rivers Region of the East-Central Yucatán Peninsula*, edited by Vernon L. Scarborough, Fred Valdez, Jr., and Nicholas Dunning, pp. 37–51. The University of Arizona Press, Tucson.

Appendix A: 2006 Say Kah Ceramic Data

Op 1		Time Period	Type: Variety	Forms					Counts			
Subop	Lot			Plate	Bowl	Jar	Cylinder	Other	Rim	Body	Base	Total
C	1	Tepeu 2-3	Achote Black						46		46	
C	1	Tepeu 2-3	Buff Slipped						4		4	
C	1	Tepeu 2-3	Cayo Unslipped			7			7	2	9	
C	1	Tepeu 2-3	Garbutt Creek Red		1				1		1	
C	1	Tepeu 2-3	Red Slipped						12		12	
C	1	Tepeu 2-3	Striated						57		57	
C	1	Tepeu 2-3	Subin Red		2				2		2	
C	1	Tepeu 2-3	Tinaja Red						75		75	
C	1	Tepeu 2-3	Unidentified			2			2	10	12	
C	2	Tepeu 2	Alexanders Unslipped			1			1		1	
C	2	Tepeu 2	Cayo Unslipped			2			2		2	
C	2	Tepeu 2	Striated						8		8	
C	2	Tepeu 2	Tinaja Red						1		1	
C	2	Tepeu 2	Unidentified		1						1	
C	2	Tepeu 2	Unidentified						3		3	
C	3	Tzakol	Quintal Unslipped			1			1		1	
C	3	Tzakol	Red Slipped						5		5	
C	3	Tzakol	Striated						2		2	
C	3	Tzakol	Unidentified		1				1		1	
C	3	Tzakol	Unidentified						1		1	
C	3	Tzakol	Unidentified						3		3	
C	4	Tzakol	Aguila Orange		2				1	2	3	
C	4	Tzakol	Striated						1		1	
C	5	Tepeu 2/Tzakol	Aguila Orange						5		5	
C	5	Tepeu 2/Tzakol	Balanza Black						3		3	
C	5	Tepeu 2/Tzakol	Black Slipped						15		15	
C	5	Tepeu 2/Tzakol	Palmar Orange-polychrome	1					1		1	
C	5	Tepeu 2/Tzakol	Sierra Red						4		4	
C	5	Tepeu 2/Tzakol	Striated						21		21	
C	5	Tepeu 2/Tzakol	Unidentified						2		2	
C	5	Tepeu 2/Tzakol	Unslipped						10		10	
D	1	Tepeu 3	Belize Red?						3		3	
D	1	Tepeu 3	Black Slipped						10		10	
D	1	Tepeu 3	Cayo Unslipped			3			2	21	23	
D	1	Tepeu 3	Cubeta Incised?						1		1	
D	1	Tepeu 3	Red Slipped						21		21	
D	1	Tepeu 3	Striated						20		20	
D	1	Tepeu 3	Subin Red		2				2		2	
D	1	Tepeu 3	Tinaja Red						9		9	
D	1	Tepeu 3	Unidentified	2						2	2	
D	1	Tepeu 3	Unidentified						31		31	

Appendix A: 2006 Say Kah Ceramic Data

Op 1		Time Period	Type: Variety	Forms					Counts			
Subop	Lot			Plate	Bowl	Jar	Cylinder	Other	Rim	Body	Base	Total
D	1	Tepeu 3	Unidentified		2				2		2	
D	1	Tepeu 3	Unslipped			1			1		1	
D	3	Tepeu 2/Tzakol	Achote Black						23		23	
D	3	Tepeu 2/Tzakol	Aguila Orange		3				3	4	7	
D	3	Tepeu 2/Tzakol	Balanza Black						2		2	
D	3	Tepeu 2/Tzakol	Black Slipped	2					2		2	
D	3	Tepeu 2/Tzakol	Buff Slipped						7		7	
D	3	Tepeu 2/Tzakol	Cayo Unslipped			1			1	20	21	
D	3	Tepeu 2/Tzakol	Gunshot						25		25	
D	3	Tepeu 2/Tzakol	Red Slipped						8		8	
D	3	Tepeu 2/Tzakol	Striated						22		22	
D	3	Tepeu 2/Tzakol	Subin Red		4				4		4	
D	3	Tepeu 2/Tzakol	Tinaja Red						15		15	
D	3	Tepeu 2/Tzakol	Unidentified				1 lid		1		1	
D	3	Tepeu 2/Tzakol	Unidentified			3			3	6	9	
D	3	Tepeu 2/Tzakol	Unidentified			1			1	1	2	
D	3	Tepeu 2/Tzakol	Unidentified						16		16	
D	4	Tepeu 2-3	Achote Black		1				1	43	43	
D	4	Tepeu 2-3	Brown Slipped						1		1	
D	4	Tepeu 2-3	Cayo Unslipped			3			3	3	6	
D	4	Tepeu 2-3	Red Slipped	5					5		5	
D	4	Tepeu 2-3	Striated						73		73	
D	4	Tepeu 2-3	Tinaja Red						40		40	
D	4	Tepeu 2-3	Tunich Red-on-orange		1				1		1	
D	4	Tepeu 2-3	Unidentified			1			1	1	2	
D	4	Tepeu 2-3	Unidentified							1	1	
D	4	Tepeu 2-3	Unidentified						21		21	
D	4	Tepeu 2-3	Yalbac Smudged-brown		1				1		1	
D	5	Tzakol	not ceramic - stucco					1			1	
D	5	Tzakol	Orange-polychrome						1		1	
D	5	Tzakol	Rio Bravo Red		1				1	1	1	
D	5	Tzakol	Sierra Red		2				1	12	14	
D	5	Tzakol	Striated						12		12	
D	5	Tzakol	Unidentified						1		1	
D	5	Tzakol	Unidentified				1 lid		1		1	
D	5	Tzakol	Unslipped			3			3		3	
D	6	Tepeu 2-3	Achote Black		1				1	1	2	
D	6	Tepeu 2-3	Roaring Creek Red	2					2		2	
D	6	Tepeu 2-3	Striated						4		4	
D	6	Tepeu 2-3	Tinaja Red						5		5	
D	*	Tepeu 2/Tzakol	Achote Black						28		28	

Appendix A: 2006 Say Kah Ceramic Data

Op 1		Time Period	Type: Variety	Forms					Counts			
Subop	Lot			Plate	Bowl	Jar	Cylinder	Other	Rim	Body	Base	Total
D	*	Tepeu 2/Tzakol trace	Gunshot						75		75	
D	*	Tepeu 2/Tzakol trace	Striated						23		23	
D	*	Tepeu 2/Tzakol trace	Subin Red		2			2			2	
D	*	Tepeu 2/Tzakol trace	Tinaja Red?					34			34	
D	*	Tepeu 2/Tzakol trace	Unidentified		1					1	1	
D	*	Tepeu 2/Tzakol trace	Unidentified				lid?	1			1	
E	1	Tepeu 2-3/Tzakol and Chicanel trace	Achote Black					10			10	
E	1	Tepeu 2-3/Tzakol and Chicanel trace	Achote Black?					33			33	
E	1	Tepeu 2-3/Tzakol and Chicanel trace	Buff Slipped					10			10	
E	1	Tepeu 2-3/Tzakol and Chicanel trace	Cayo Unslipped			1		1	23		24	
E	1	Tepeu 2-3/Tzakol and Chicanel trace	Dolphin Head Red		1			1			1	
E	1	Tepeu 2-3/Tzakol and Chicanel trace	Rio Bravo Red					2			2	
E	1	Tepeu 2-3/Tzakol and Chicanel trace	Sierra Red?		1			1			1	
E	1	Tepeu 2-3/Tzakol and Chicanel trace	Striated					55			55	
E	1	Tepeu 2-3/Tzakol and Chicanel trace	Subin Red		3			3			3	
E	1	Tepeu 2-3/Tzakol and Chicanel trace	Tinaja Red					10			10	
E	1	Tepeu 2-3/Tzakol and Chicanel trace	Tinaja Red?					38			38	
E	1	Tepeu 2-3/Tzakol and Chicanel trace	Unidentified		1			1		1	2	
E	1	Tepeu 2-3/Tzakol and Chicanel trace	Unidentified			1		1			1	
E	1	Tepeu 2-3/Tzakol and Chicanel trace	Unidentified				foot				1	
E	1	Tepeu 2-3/Tzakol and Chicanel trace	Unidentified					21			21	

Appendix A: 2006 Say Kah Ceramic Data

Op 1		Time Period	Type: Variety	Forms					Counts			
Subop	Lot			Plate	Bowl	Jar	Cylinder	Other	Rim	Body	Base	Total
E	1	Tepeu 2-3/Tzakol and Chicanel trace	Unidentified							5	6	11
F	2	Tepeu 2-3	Striated							1		1
F	2	Tepeu 2-3	Tinaja Red							4		4
F	2	Tepeu 2-3	Unidentified							3		3
G	1	Tepeu 2-3	Achote Black							7		7
G	1	Tepeu 2-3	Meditation Black							1		1
G	1	Tepeu 2-3	Slipped?							4		4
G	1	Tepeu 2-3	Striated							3		3
G	1	Tepeu 2-3	Tinaja Red							3		3
G	1	Tepeu 2-3	Unidentified				lid		1			1
G	1	Tepeu 2-3	Unidentified			1			1	7		8
G	2	Tepeu 3	Achote Black		1				1	33		34
G	2	Tepeu 3	Belize Red?							4		4
G	2	Tepeu 3	Cayo Unslipped							19		19
G	2	Tepeu 3	Cayo Unslipped			1			1			1
G	2	Tepeu 3	Gunshot							30		30
G	2	Tepeu 3	Imitation Slate							1		1
G	2	Tepeu 3	Roaring Creek Red							1		1
G	2	Tepeu 3	Striated							8		8
G	2	Tepeu 3	Tinaja Red							4		4
G	2	Tepeu 3	Tinaja Red?							28		28
G	2	Tepeu 3	Unidentified		1				1			1
H	1	Tepeu 3	Buff Slipped							6		6
H	1	Tepeu 3	Cayo Unslipped			5				5	9	14
H	1	Tepeu 3	Imitation Slate			1				1		1
H	1	Tepeu 3	Meditation Black							8		8
H	1	Tepeu 3	Roaring Creek Red	1						1		1
H	1	Tepeu 3	Striated							28		28
H	1	Tepeu 3	Subin Red		1					1	15	16
H	1	Tepeu 3	Tinaja Red?							13		13
H	1	Tepeu 3	Unidentified		1						1	1
H	1	Tepeu 3	Unidentified			1					1	1
H	1	Tepeu 3	Unidentified							17		17
H	1	Tepeu 3	Unslipped			1				1		1
I	1	Tepeu 3	Achote Black							2		2
I	1	Tepeu 3	Cayo Unslipped: Variety Unspecified (Red-slipped)			1				1		1
I	1	Tepeu 3	Striated							1		1
I	1	Tepeu 3	Unidentified							4		4

Appendix A: 2006 Say Kah Ceramic Data

Op 1		Time Period	Type: Variety	Forms					Counts			
Subop	Lot			Plate	Bowl	Jar	Cylinder	Other	Rim	Body	Base	Total
I	2	Tepeu 2-3	Cayo Unslipped			1			1		1	
I	2	Tepeu 2-3	Unidentified						20		20	
I	2	Tepeu 2-3	Unslipped						6		6	
I	4	Tepeu 2-3	Achote Black						3		3	
I	4	Tepeu 2-3	Red Slipped						4		4	
I	4	Tepeu 2-3	Striated						6		6	
I	4	Tepeu 2-3	Tinaja Red						5		5	
I	4	Tepeu 2-3	Unidentified						3		3	
J	1	Tepeu 2-3	Achote Black						1		1	
J	1	Tepeu 2-3	Unidentified						3		3	
J	2	Tepeu 2-3	Cayo Unslipped						4		4	
J	2	Tepeu 2-3	Gunshot						10		10	
J	2	Tepeu 2-3	Striated						3		3	
J	2	Tepeu 2-3	Tinaja Red						8		8	
J	2	Tepeu 2-3	Unidentified			1	1 foot		7	1	8	
J	2	Tepeu 2-3	Unidentified						1		1	
J	3	Tepeu 2-3	Subin Red						1		1	
J	3	Tepeu 2-3	Tinaja Red						1		1	
J	3	Tepeu 2-3	Unidentified						2		2	
K	1	Tzakol to Tepeu 1	Balanza Black		1				1		1	
K	1	Tzakol to Tepeu 1	Fowler Orange-red			1			1		1	
K	1	Tzakol to Tepeu 1	not ceramic - stucco					2			2	
K	1	Tzakol to Tepeu 1	Rio Bravo Red		2				2		2	
K	1	Tzakol to Tepeu 1	Unidentified				1		1		1	
K	1	Tzakol to Tepeu 1	Unslipped						2		2	
K	3	Tepeu 2-3	Achote Black						3		3	
K	3	Tepeu 2-3	Roaring Creek Red	1					1		1	
K	3	Tepeu 2-3	Tinaja Red			1			1		1	
K	3	Tepeu 2-3	Unidentified						8		8	
K	3	Tepeu 2-3	Unslipped Comal				comal	1			1	
K	4	?	Unidentified						3		3	
L	1	Tepeu 2-3	Cream Slipped?						2		2	
L	1	Tepeu 2-3	Dolphin Head Red		1				1		1	
L	1	Tepeu 2-3	Garbutt Creek Red		1				1		1	
L	1	Tepeu 2-3	Gunshot						8		8	
L	1	Tepeu 2-3	Striated						2		2	
L	1	Tepeu 2-3	Tinaja Red						12		12	
L	1	Tepeu 2-3	Unidentified						6		6	
L	2	Tepeu 2-3	Cayo Unslipped						8		8	
L	2	Tepeu 2-3	Striated						3		3	
L	2	Tepeu 2-3	Subin Red		5				5		5	
L	2	Tepeu 2-3	Subin Red		3				3	4	7	

Appendix A: 2006 Say Kah Ceramic Data

Op 1		Time Period	Type: Variety	Forms					Counts			
Subop	Lot			Plate	Bowl	Jar	Cylinder	Other	Rim	Body	Base	Total
L	2	Tepeu 2-3	Tinaja Red			1			1	12		13
L	2	Tepeu 2-3	Unidentified							5		5
L	2	Tepeu 2-3	Unidentified		1				1			1
M	2	Tepeu 2-3	Cayo Unslipped			1			1			1
M	2	Tepeu 2-3	Tinaja Red							1		1
M	2	Tepeu 2-3	Unidentified							3		3
M	3	Tepeu 2-3	Belize Red?		1				1			1
M	3	Tepeu 2-3	Cayo Unslipped							2		2
M	3	Tepeu 2-3	Meditation Black							1		1
N	2	Tepeu 2-3	Alexanders Unslipped			1				1		1
N	2	Tepeu 2-3	Cayo Unslipped							1		1
N	2	Tepeu 2-3	Meditation Black							1		1
N	2	Tepeu 2-3	Striated							3		3
N	2	Tepeu 2-3	Unidentified		1				1	7		8
O	1	Tepeu 2-3	Achote Black							6		6
O	1	Tepeu 2-3	Alexanders Unslipped			1			1			1
O	1	Tepeu 2-3	Cayo Unslipped			1				7		7
O	1	Tepeu 2-3	Chilar Fluted							1		1
O	1	Tepeu 2-3	Gunshot							8		8
O	1	Tepeu 2-3	Meditation Black							2		2
O	1	Tepeu 2-3	Roaring Creek Red	1					1			1
O	1	Tepeu 2-3	Slipped							4		4
O	1	Tepeu 2-3	Striated							6		6
O	1	Tepeu 2-3	Subin Red		3				3			3
O	1	Tepeu 2-3	Tinaja Red							2		2
O	1	Tepeu 2-3	Tinaja Red?							13		13
O	1	Tepeu 2-3	Unidentified		2				2	4		6
O	1	Tepeu 2-3	Unidentified		1				1			1
O	1	Tepeu 2-3	Unidentified			1			1			1