

**RESEARCH REPORTS FROM THE PROGRAMME FOR BELIZE  
ARCHAEOLOGICAL PROJECT, VOLUME THREE**

**Edited by:**

**Rissa M. Trachman  
Elon University**

**And**

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

**Contributors**

Grant Aylesworth  
Maia Dedrick  
Robyn Dodge  
Erin E. Gill  
Sharon Hankins  
Brett A. Houk  
David M. Hyde  
Angeliki Kalamara Cavazos  
Laura J. Levi  
Brandon S. Lewis  
Maria Martinez

Antonio E. Padilla  
Madelyn Percy  
Deanna M. Riddick  
Lauri McInnis Martin  
Shannon Smith  
Brent Suttie  
Rissa M. Trachman  
Débora Trein  
Fred Valdez, Jr.  
Estella Weiss-Krejci  
Gregory Zaro



**Occasional Papers, Number 10  
Mesoamerican Archaeological Research Laboratory  
The University of Texas at Austin  
2009**



## Contents

Archaeological Investigations of the Programme for Belize Archaeological Project: An Introduction to Volume Three <i>Fred Valdez, Jr. and Rissa M. Trachman</i> .....	1
Mount Allison University: The 2008 Archaeological Program in Northwest Belize <i>Grant Aylesworth and Brent Suttie</i> .....	7
Excavations (2008) at the Los Pisos Courtyard, La Milpa, Belize <i>Maria Martinez</i> .....	15
Investigations (2008) at La Milpa, Belize: Plaza A, Structure 4 <i>Rissa M. Trachman</i> .....	35
An Overview of Archaeological Investigations at Plaza B, La Milpa: The 2008 Field Season <i>Brett Houk, Débora Trein, and Gregory Zaro</i> .....	41
Excavations at La Milp, Belize: Structure 22 <i>Gregory Zaro</i> .....	61
Overview of the 2008 Excavations at Structures 23 and 27, Plaza B, La Milpa, Belize <i>Antonio Padilla and Shannon M. Smith</i> .....	71
Preliminary Investigations East and West of the Acropolis, La Milpa, Belize: The 2008 Field Season <i>Brandon S. Lewis</i> .....	81
The 2008 Field Season at Group A of the Medicinal Trail Site, Northwestern Belize <i>David M. Hyde</i> .....	85
A Late Preclassic Burial at Medicinal Trail: Excavation and Analysis of Burial 3 <i>Angeliki Kalamara Cavazos</i> .....	97
Group B of the Medicinal Trail Site: Select Excavations at Operation 12 <i>Deanna M. Riddick</i> .....	111
Group B of the Medicinal Trail Site: Operation 12 (Lots A, Q, and R) <i>Lauri McInnis Martin</i> .....	115

Operation 15: Berm Structures and Water Management at Medicinal Trail (RB 62), Belize	
<i>Erin E. Gill</i> .....	121
Medicinal Trail Archaeology: Investigations at Operation 13	
<i>Maia Dedrick</i> .....	127
Excavations at the Medicinal Trail Site (2008): Operation 14	
<i>Madelyn Percy</i> .....	143
RB 70: The 2008 Investigations	
<i>Robyn Dodge</i> .....	145
Excavations at La Milpa Easts and the <i>Aguada Lagunita Elusiva</i> : The 2008 Field Season	
<i>Estella Weiss-Krejci</i> .....	149
Plan for Phase Two Research at Wari Camp (RB 56): Household, Neighborhood, and Ward in the Prehispanic Maya City	
<i>Laura Levi</i> .....	167
Experimental Pottery Studies in Belize	
<i>Sharon Hankins</i> .....	177



**ARCHAEOLOGICAL INVESTIGATIONS OF THE PROGRAMME  
FOR BELIZE ARCHAEOLOGICAL PROJECT:  
AN INTRODUCTION TO VOLUME THREE\***

Fred Valdez, Jr., The University of Texas at Austin  
Rissa M. Trachman, Elon University

**INTRODUCTION**

Most of the papers and reports presented in this volume represent research from the 17<sup>th</sup> (2008) field season of the Programme for Belize Archaeological Project (PfBAP). The property on which the PfBAP operates is located in northwest Belize and is 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 70 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 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. 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 in Belize. All programs also share facilities and data as pertaining to the general objectives of the PfBAP as a regional research endeavor.



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

The reports that make up this volume represent significant efforts from the 2008 field season. Continued excavations at La Milpa are noted by the endeavors by Martinez and Trachman at Plaza A, in addition to the research directed by Lewis, Aylesworth, and Houk. Medicinal Trail studies were overseen by Hyde with contributions by Martin, Riddick, Gill, Dedrick, and Percy. Other settlement studies were conducted by Dodge, Weiss-Krejci, and Levy. A

final paper by Hankins presents the initial work/findings of an experimental archaeology component. The paper by Hankins remains in a very personal tone (almost diary-like) and differs in this style of presentation from the traditional “field report.”

### **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 Programme for Belize 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.

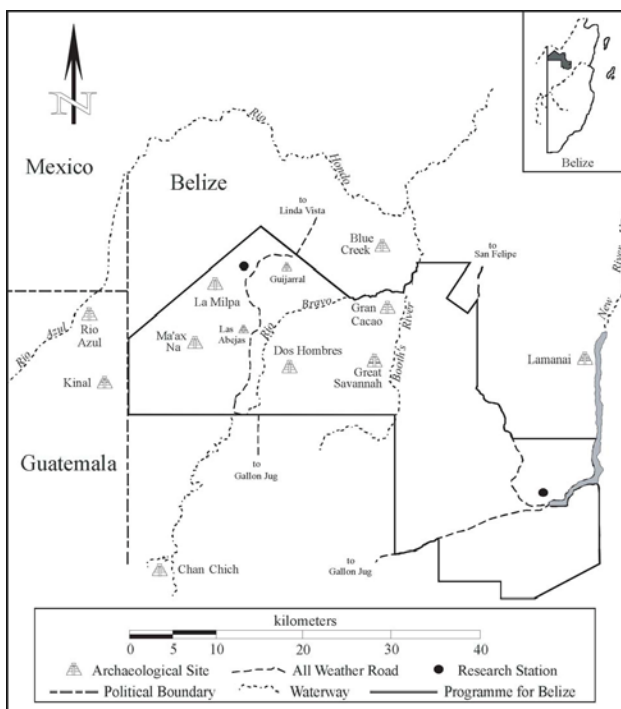


Figure 2. Map of archaeological sites in the PfbAP area.

The relevance of the archaeological work to the Programme for Belize (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 Programme for Belize 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.

### **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 we 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 IoA, Dr. John Morris, Director for Research and Education at 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.

The Programme for Belize continues to provide valuable assistance and cooperation from both the main office in Belize City and the La Milpa Field Station. In Belize City, Mr. Herbert Haylock is always making time to review our interests and directions. At the La Milpa Station, Mr. Ramon Pacheco as Station Manager has always been available to assist and advise on logistics. Among the trained experts and guides, Bladimir Rodriguez

has been particularly helpful and knowledgeable. We greatly appreciate the opportunity to work on the RBMCA with such collaborative land owners.

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 need "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 do so in this format.

\* Most of this "Introduction" had been previously presented with a report to the Institute of Archaeology at Belmopan, Belize. The comments here are only to help contextualize (and introduce) the volume.

#### **REFERENCE CITED**

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.

# **MOUNT ALLISON UNIVERSITY: THE 2008 ARCHAEOLOGICAL PROGRAM IN NORTHWEST BELIZE \***

Grant Aylesworth, Mount Allison University  
Brent Suttie, Archaeological Services, Heritage Branch,  
Province of New Brunswick

## **INTRODUCTION**

During the summer of 2008, a group of students from Mount Allison University (MtA), Sackville, New Brunswick, completed a number of research activities as part of the Programme for Belize Archaeological Project. Activities included lab work (cleaning and cataloguing of artifacts, ceramic restoration, ground stone tool analysis and tool residue collection) and field work (resistivity survey, excavation, reconnaissance, mapping, and underwater survey). Field work was carried out at La Milpa and near Programme for Belize's Hill Bank Field Station.

## **OVERVIEW OF HILL BANK FIELD STATION ACTIVITIES**

The MtA field school spent a week conducting a reconnaissance survey at the southern end of the New River Lagoon. This survey was intended to build a base map showing the bottom of the lagoon which could be used to plan future underwater research and to begin to record any observed cultural material in the vicinity of the lagoon.

When the crew arrived at the Hill Bank Field Station and began the survey we were informed by head ranger Ivan Durant that some subsurface survey work had been done in the lagoon. This survey used a side-scan sonar to search for sunken mahogany logs. Mr. Durant informed us that two dugout canoes had been located on the bottom of the lagoon using this technology and that one had been in excess of 80 feet (24 m) long. With this information, it was decided that rather than repeat the survey using the more rudimentary equipment on hand, the crew would focus their efforts on surveying the edges of the Lagoon and an attempt would be made after the field season to acquire the results of the survey. To date, despite searches in Belize City and Belmopan, copies of this marine survey have not been located. Attempts to contact the company who did the survey are ongoing.

During the week at Hill Bank, the MtA field crew recorded the submerged remains of an early 20<sup>th</sup> century tugboat, the remains of two large iron barges (also 20<sup>th</sup> century) a submerged section of corduroy road and a bridge at the south end of the lagoon and a late 19<sup>th</sup> to early 20<sup>th</sup> century traction engine (Figure 1).



Figure 1. Remains of traction engine at Hill Bank Field Station

The crew was taken to a Maya site by Programme for Belize rangers. The site consisted of several buildings, one of which had an unusually large stone stair. In nearby areas, a possible quarry was noted, as were domestic platforms. The site is located north of Hill Bank on the west side of the lagoon. This site had some temple structures, many of which show evidence of extensive looting. Observations of the profiles of looting trenches showed fragments of conch shell and undecorated ceramics.

While waiting out a heavy rain at the Hill Bank Field Station, the crew found flaked stone debitage and a bipolar core in a secondary deposit of fill outside the dining hall. This fill was mostly gravel and had been used to elevate a small area. The bipolar core was made from flaked metamorphosed limestone and the fill material with which it was found had been brought from the vicinity of San Felipe. The large volume of flaked stone with no discernable ceramics or any other cultural material suggests this material may have come from a lithic quarry of unknown age.



## **LABORATORY ACTIVITIES**

In addition to the day to day processing of lithics and ceramics, the MtA crew spent time with conservator Norma Garcia working on conserving ancient Maya ceramic vessels. Each student spent about 2 days on ceramic conservation. The other main activity of the MtA crew in the lab was an examination of previously excavated collections in an effort to identify ground stone artifacts. The crew collected ground stone tools that had been excavated from contexts throughout the Programme for Belize property and curated in the local lab. The intent of this work was to conduct an overall documentation of ground stone tools and tool fragments and to attempt to collect residue from the ground stone tools. As samples were removed from each artifact, a full description of the artifact was developed including petrographic description, photographs, measurements and any diagnostic ceramic associations.

A total of 191 ground stone artifacts were examined and described by the MtA crew. Of the 191 artifacts examined, 52 were sampled for residue. As the artifacts were being sampled for adhering residue, dilute hydrochloric acid was used to remove the carbonate deposits which had accreted to the outer surface of the ground stone tools. During this process, a number of artifacts were observed to have unmistakable signs of pigment still incorporated into the working surface of the tools. The carbonate deposits had apparently sealed the pigment from groundwater and weathering, preserving the underlying pigment. Further, although the artifacts had been previously washed as they had been collected during the last 10+ years, residues clearly remained on their surfaces under the carbonate deposits. Pigment was observed primarily on manos and metates (Figure 2). Samples of the pigment were collected for analysis. Of the 52 artifacts sampled, 13 (25%) were found to have been used for pigment processing.



Figure 2. Example of pigment observed on a circular mano once carbonates were removed.

Currently, a catalogue of the entire assemblage of recognized ground stone tool types is being developed with a breakdown of lithic types used, the results of pigment/residue analysis, and any associated temporally diagnostic artifacts for each tool type. To provide comparative material for the residues collected from the ground stone tools, the MtA crew collected some pigment samples from ceramic sherds and from natural raw material sources. Thus far, some pigment samples have been subjected to electron microprobe analysis at the University of New Brunswick Microscopy and Microanalysis Facility. Residue samples collected from the acid washes of the ground stone tools will be analyzed for remnant starches and phytoliths, and pigment samples will continue to be analyzed with an electron microprobe. Electron micrographs of the structure of some pigment samples have been produced with preliminary analysis of results ongoing.

### **SUMMARY OF RESISTIVITY SURVEY AND EXCAVATION**

The MtA crew undertook a soil resistivity survey at La Milpa's Plaza A, the largest plaza at the site. The resistivity survey covered an area of 10 x 12 m (Figure 3) and all anomalies encountered were ground-truthed through controlled excavation units. Although a survey of a larger area had initially been planned, equipment malfunctions prevented the survey from continuing. The excavation units proved the merits of this type of remote sensing by revealing the nature of the anomalies to be a pit feature in filled during antiquity, a back-filled 1 x 1 m excavation unit from previous researchers, and perhaps most noteworthy, a previously unrecorded building.

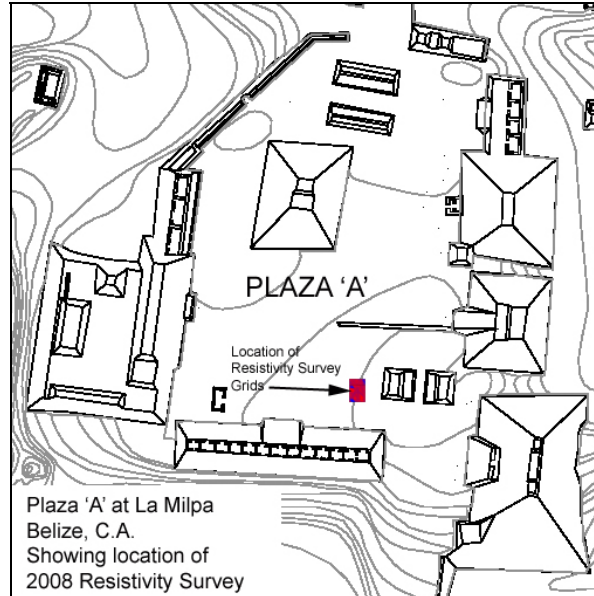


Figure 3. Map of Plaza A, La Milpa showing the location of the 2008 resistivity survey plot.

Nine 1 x 1 m units were excavated within the resistivity test plot in an effort to determine the nature of the anomalies detected during the resistivity survey (Figure 4). An additional 1 m<sup>2</sup> was excavated in the southeastern corner of the resistivity survey plot in an area which showed no anomalies. The purpose of this 1 m<sup>2</sup> was to ascertain the nature of the archaeological deposits in areas which did not appear to have discrete anomalies.

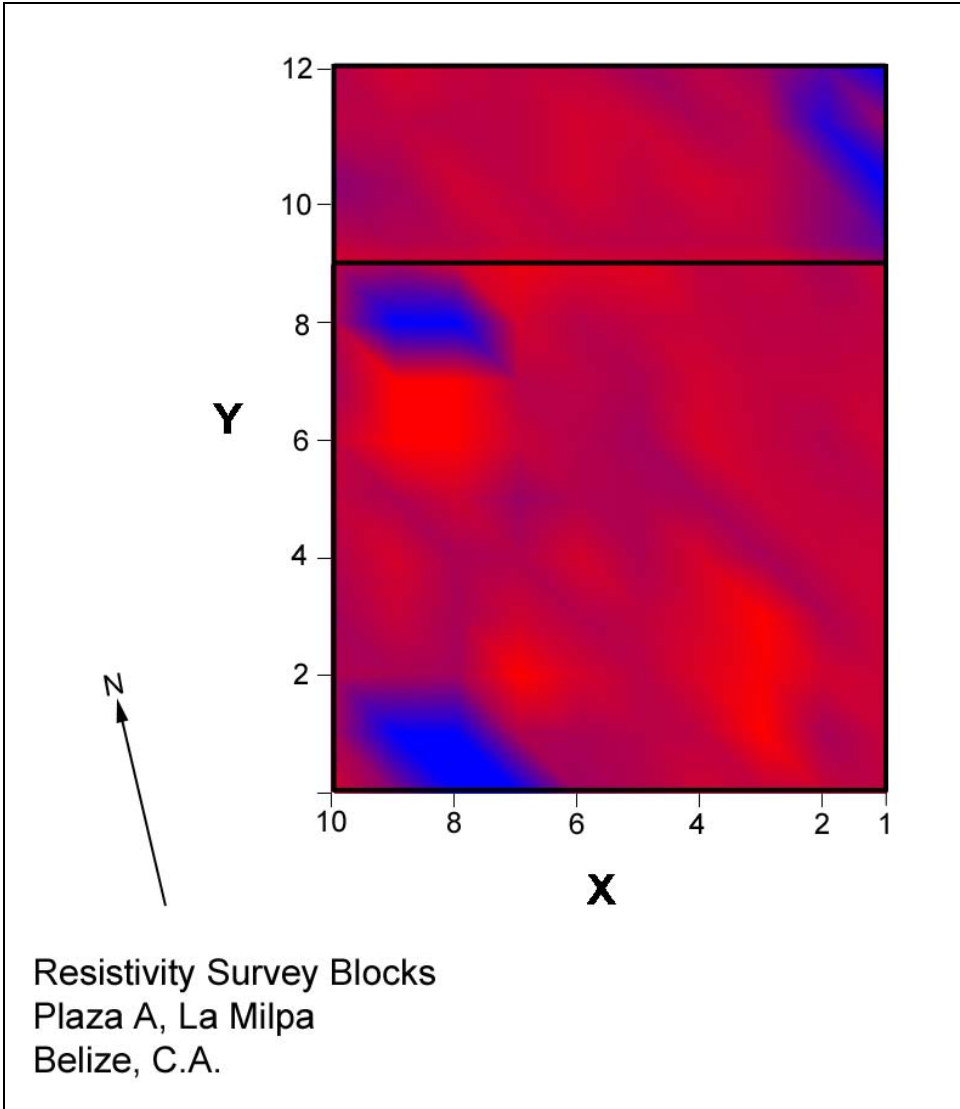


Figure 4 – Uninterpreted results of soil resistivity survey.

Perhaps the most important finding of the resistivity survey was the remains of a previously unknown structure built atop a plaster floor within Plaza A (Figures 5 and 6). The MtA crew excavated a total of three 1 m<sup>2</sup> units along this anomaly. The building was made of large limestone blocks which were finely finished and plastered along the outside surface, parts of the wall were also built from smaller limestone blocks.

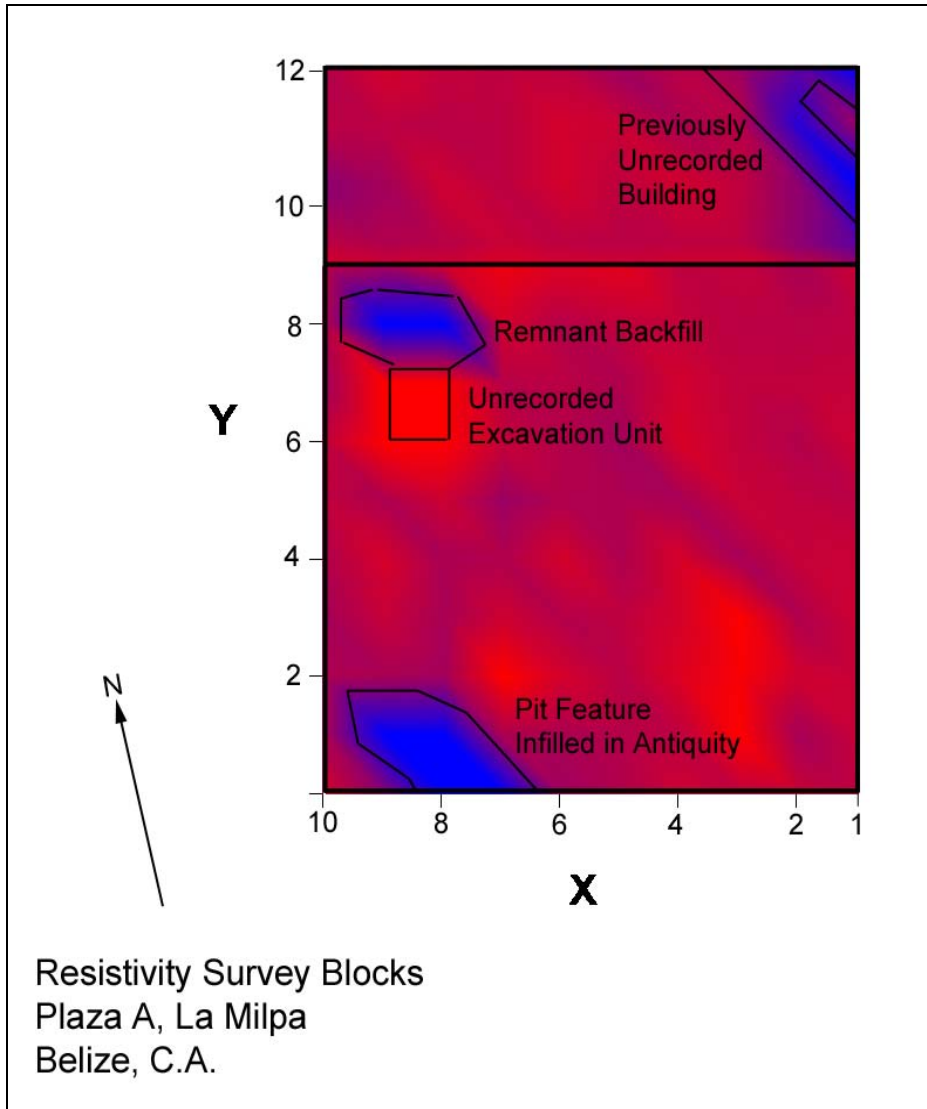


Figure 5 – Results of soil resistivity survey interpreted based on excavation of anomalies.

The primary goal of this research was to test the utility of a resistivity survey on a large Mayan plaza area; it is the opinion of the authors that based on the results reported here, that soil resistivity surveys can yield high-resolution data which can help target archaeological investigations. The identification of buried structures makes it possible to anticipate the layout of plazas without the necessity of disturbing large areas of intact plaster floors, thus preserving the integrity of sites.

One major issue which was encountered during these surveys were the large amounts of shallowly buried rubble which, in some instances made penetration of the resistivity probes problematic. Some of the mottling (Figures 4 and 5) evident in otherwise undifferentiated areas may be attributed to this rubble.



Figure 6. View of previously unknown building identified through resistivity survey.

### **ACKNOWLEDGEMENTS**

The 2008 field season was successful due to the generosity and professionalism of many individuals and institutions. The authors wish to thank: Fred Valdez, Director of the Programme for Belize Archaeological Project and all of his staff and students; the Programme for Belize, including the staff of the Hill Bank Field Station and the PFB rangers; Belize's Institute of Archaeology; Robert Adlam, Head of the Department of Anthropology, Mount Allison University; Heather Patterson, Director of Continuous Learning, Mount Allison University; Robert Summerby-Murray, Dean of Social Science, Mount Allison University; Douglas Hall, Microscopy and Microanalysis Facility,

University of New Brunswick; and Koumari Mitra, Chair of the Department of Anthropology, University of New Brunswick. Lastly, the 2008 MtA crew was a great bunch of students who meaningfully contributed to the research endeavours.

\* A version of this paper was previously submitted as part of a report (2008) to the Institute of Archaeology, Belmopan, Belize.

## **EXCAVATIONS (2008) AT THE LOS PISOS COURTYARD, LA MILPA, BELIZE \***

Maria Martinez, The University of Texas at Austin

### **INTRODUCTION**

During the 2008 field season excavations continued at La Milpa (Operation A2), under the auspice of The Programme for Belize Archaeological Project (PfbAP). La Milpa, was a medium size urban center, and lies within the Rio Bravo Conservation and Management Area (Figure 1). Established in 1988, this nature reserve consists of over 250,000 acres. The Rio Bravo Conservation and Management Area, borders with Mexico to the north and with Guatemala to the west. J. E. S. Thompson originally documented La Milpa in 1938; however, it was not until the early 1990s that major archeological excavations and mapping were conducted. Under the direction of Norman Hammond and Gair Tourtellot III. The La Milpa Archaeological Project (LaMAP) conducted excavations at La Milpa, every other year, from 1992 to 2002. Based on the ceramic analysis, La Milpa was occupied as early as the Middle Preclassic, and as late as the Late and Terminal Classic eras (800 B.C. to A.D. 900, Kosakowsky and Sagebiel 1999; Sagebiel 2005). There was a major population explosion during the Late Classic period (AD 750-850, Hammond et al. 1998). Hammond asserts that the population during the Late Classic period may have been as high as 50,000 (Hammond et. al 1996:86).

La Milpa's built environment and monumental structures include two main groups comprised of vaulted range structures, temples and ball courts. In similar fashion to Dos Hombres and other lowland Maya sites, La Milpa is laid out on a north-south axis (Figure 2, Andrews, 1975, 1995; Ashmore 1991; Houk 1998). The northern group consists of the Great Plaza, one of the largest public spaces built by the Maya. Within the northern group lie four of the largest pyramidal structures, two ballcourts, and 16 of the 19 known stelae. The southern group is connected to the northern group via a causeway (sacbe), and consists of two plazas, B and C. Most of the construction at the southern group is considered a later addition to the site core, dating to the Late Classic period (A. D. 750-850, Hammond et al. 1998).

The excavations described below were conducted at the Los Pisos Courtyard (Figure 3). Based on a preliminary ceramic chronology, the Los Pisos Courtyard, formally known as Courtyard 88, had an extensive and continuous occupation, which dates from the Late Preclassic to Late and Terminal Classic eras (300 B.C. to A.D. 900). The Los Pisos Courtyard is located in the northern group of La Milpa, and is situated on the highest point of the site, on a platform four meters above the Great Plaza. The 2008 excavations revealed that the four meter high platform consists of a two-meter natural limestone berm, while the upper two meters consist of an artificially constructed platform—constructed of plaster floors, dry construction fill, and sascab. The central access route

into the courtyard may have been through the large range structure (Str. 9) on the eastern side of the courtyard. To the west of the courtyard is a commanding view of a principal water reservoir, known as the Far West Bajo, and the residences below. To the east, the courtyard overlooks the Great Plaza, the most prominent funerary Temples, 1,2,3, and 10, and two ball courts.

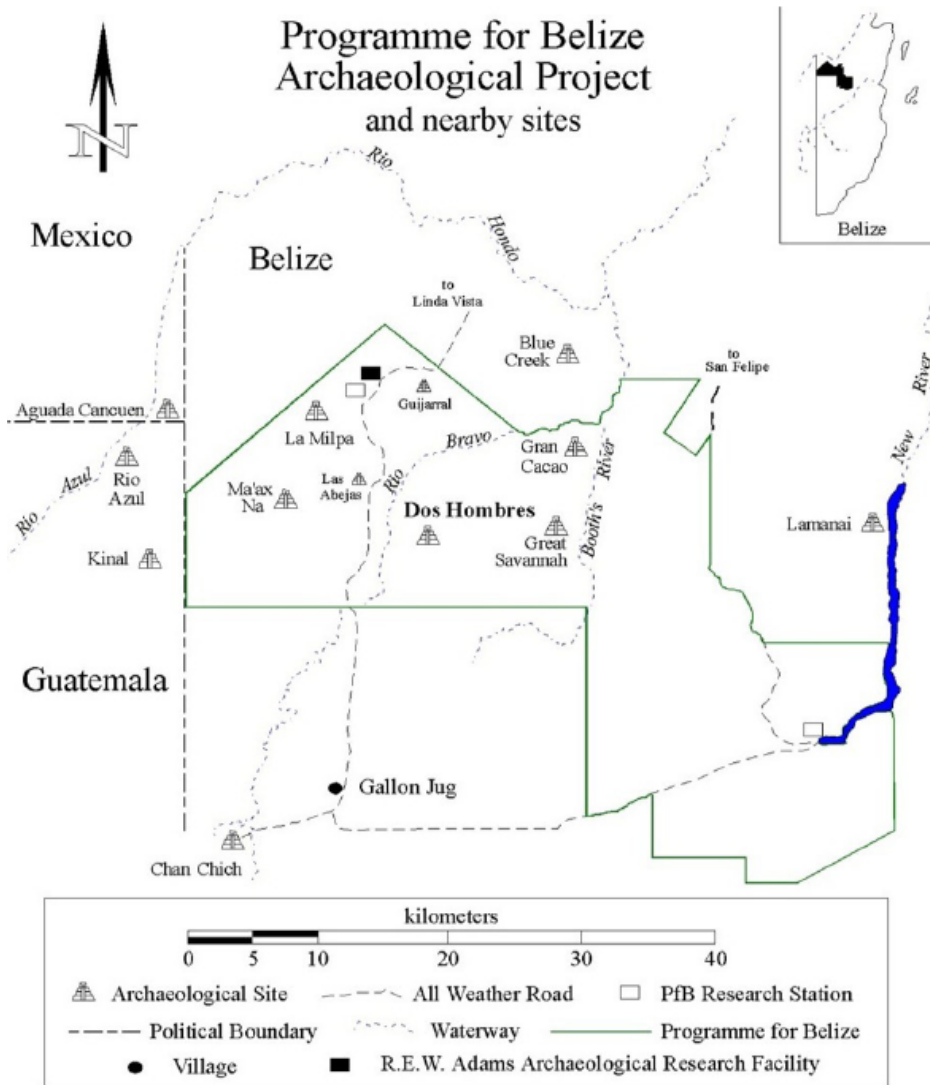


Figure 1. Map of Rio Bravo Conservation and Management Area (by: R.W. E. Adams).





Figure 2. La Milpa, site core (by: G. Tourtellot and H. A. Shelley).

The Los Pisos Courtyard consists of a series of Structures 9, 13, 14, and 15 (Figure 3). Structure 9, a range structure, dominates the eastern side of the acropolis, and measures approximately 30 m in width, and 85 m in length. Its height when viewed from the western façade is 10 m, and when viewed from the eastern façade is approximately 15 m. Structure 15, the second largest, is located on the west end, and is 8 m wide, 25 m in length, and 7.5 m high. Structure 13, located on the south side, is approximately 2.5 m wide, and 20 m long. Structure 14, the smallest structure within the acropolis is located on the north end, and is 15 m long, and approximately 5.5 m in height.

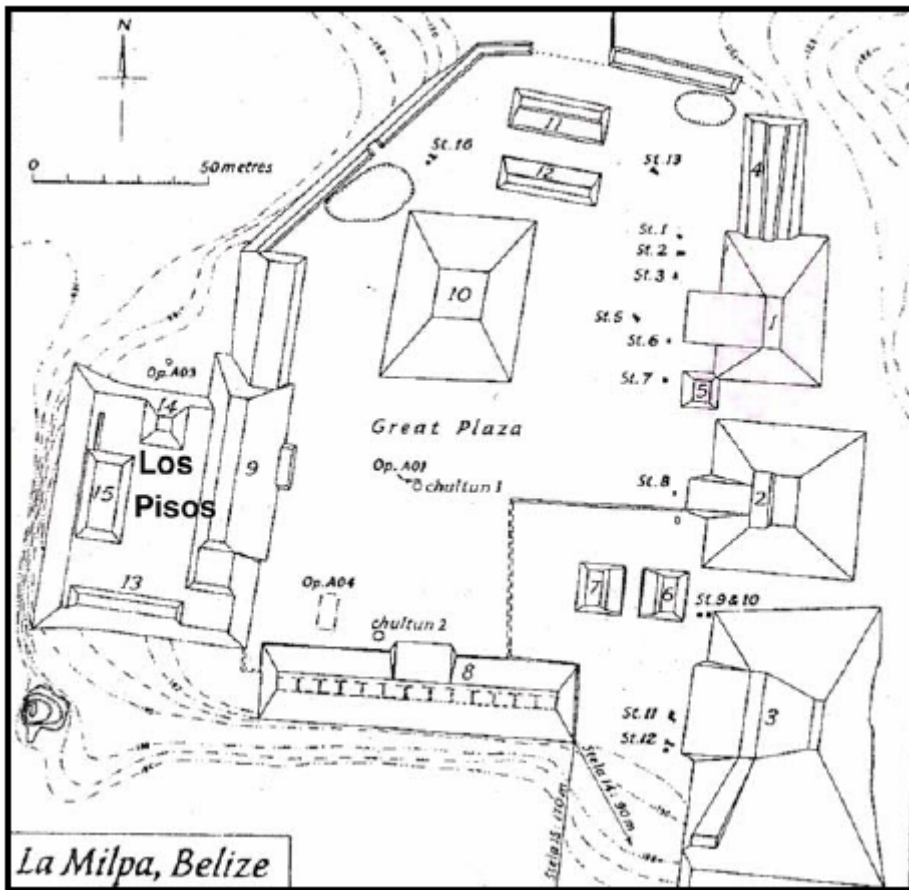


Figure 3. Los Pisos Courtyard (by: H. A. Shelley).

Access and visibility into the courtyard was very restricted during the Late and Terminal Classic times. It appears that a low wall, forming a barrier on the southeast side of the courtyard, connected Structures 13 and 9. A narrow alley, less than a one-meter wide

between Structures 14 and 9, and Structures 14 and 15, suggests a similar pattern of restricted access on the northeast and northwest sides of the courtyard. Additionally, access from the western side seems nearly impossible due to a steep gradient that leads to a drainage system. The wall enclosing the northwest side also suggests that significant effort was made to close the area from the rest of the population. The physical location, attached to the ceremonial precinct, exclusivity, and architectural monumentality supports the idea that this space held great importance, and was an exclusive place reserved for the most politically important elites of the community.

## **EXCAVATIONS**

A total of six weeks of excavations were undertaken during the 2008 season. These excavations were carried out to determine the use and function, and temporal dynamics of the Los Pisos Courtyard, and to determine the association of the courtyard to the Great Plaza, and La Milpa. More specifically, did the structures in this courtyard serve as residential or other special functions (i.e. ritual or administrative), and how does the use and function of this courtyard relate to the social and political environment of La Milpa through time—the Late Preclassic to Late and Terminal Classic periods (300 B.C. to A.D. 850).

Excavations conducted during the 2007 and 2008 field seasons have yielded significant data (Martinez 2007, 2008). Excavations within the plaza have revealed the extensiveness of the occupation in the acropolis—the ceramic assemblages recovered produced a preliminary chronology that illustrates a continuous occupation from the Late Preclassic to the Late and Terminal Classic eras (300 B.C. to A.D. 850). Charcoal collected from various loci was processed in December of 2008 at the AMS laboratory at the University of Arizona, Tucson—calibrated radiocarbon dates will be known by summer, 2009.

### **Courtyard, Suboperations, A, B, I, J, M, and S:**

Significant excavation efforts were conducted in the exterior courtyard area during the 2007 and 2008 seasons. During the 2007 season the corner of a structure in Suboperation A, and a small cavern in Suboperation B were found. Additionally, the 2007 excavations did not reveal whether bedrock was encountered in Suboperation B. It was not known if the sascab encountered in the suboperation was a natural formation or if the sascab was harvested from elsewhere and brought in to build up the platform. Needless to say, there were significant discoveries that required further excavations and investigation of the exterior courtyard area during the 2008 season.

### ***Suboperation A***

During the 2007 season Suboperation A consisted of a total of 14 lots. An additional five lots were excavated during the 2008 season. Additionally, during the 2008 season, Suboperations I, J, and M, (see below) were conjoined to Suboperation A to further expose the structure, which increased the size of Suboperation A from a 2 x 1 m unit into

a 3 x 2.5 m unit (east-west and north-south, Figure 4). Suboperations A, I, J, and M were consolidated in lot 15 of Suboperation A (Figure 4). Lot 15 located below the burned marl, consisted of a layer of rock tumble, presumably belonging to the structure. On the western side the structure's interior plaster floor was exposed (Figure 5). The eastern side of this lot further exposed the terrace that was attached to the main structure (Figure 6). Small quantities of ceramics and lithic debitage were recovered from this lot. The terrace and the interior section of the structure were treated as separate lots. Lots 16 and 17 consisted of the terrace. The cut stones forming the exterior alignment of the terrace were left in place, while the interior section was excavated. The terrace was constructed with dry cobble construction fill above dark organic soil. Ceramics, lithic debitage, a bird bone, charcoal, and two large bifaces, were recovered from Lots 16 and 17. Lot 17 was terminated at bedrock. Lots 18, 19, and 20 consisted of the interior space of the structure. Lot 18 consisted of the plaster floor; a small number of lithic debitage, and ceramic artifacts were embedded in the plaster floor. Lot 19 consisted of dry cobble construction fill; lithic debitage and ceramic sherds were also recovered from this lot. Lot 20 consisted of dark organic soil similar to the soil found in Lot 17. Ceramic sherds and lithic debitage was recovered from this lot as well. Lot 20 was terminated at bedrock. Not all the ceramics from this suboperation have been analyzed, thus the Late Preclassic date remains a preliminary date. Although the full extent of the structure is not known, a posthole near the structure, and the low masonry walls (20 cm high) suggests that it was a composite structure—the low masonry walls supported a pole and thatch structure. A platform/terrace attached to the east side of the structure measured 70 cm in width; however, the length of the platform could not be ascertained. It is presumed that this structure was a residential space, based on the construction, location, and size of the interior space. A ten-centimeter thick layer of burned marl covered this structure. The burned marl contained a small concentration of ceramics and some charcoal. The practice of burning marl on structures has been interpreted as termination ritual activity (Ambrosino 2003).

### ***Suboperation B***

Suboperation B consisted of a 2 x 1 m (east-west and north-south) unit, placed approximately 4 m from the northern façade of Structure 13. During the 2007 season a total of 19 lots were excavated (355 cm), however it was not known if bedrock was encountered, because it was not known if the sascab located approximately two meters below the ground surface was a natural formation, or brought in from elsewhere to build up the platform. During the 2008 season two lots were excavated. The lots lacked artifacts and consisted of sascab and limestone cobbles. There was a significant increase of large limestone cobbles, and a hard limestone surface, most likely bedrock, was encountered in the western end of unit. The bedrock in Suboperation A was encountered at approximately the same depth (~245 cm below datum 1) as the sascab that was encountered in this unit. This suggests that the sascab most likely decomposed in-situ, evidenced by the large limestone cobbles that were encountered prior to hitting bedrock.

However there is still the possibility that that sascab was brought in from elsewhere to level out and stabilized the eroded bedrock, prior to the construction of the platform.



Figure 4. Burned Marl: Suboperations A, I, J, and M.

### ***Suboperation I***

Suboperation I consists of a 1 x 1 m unit placed directly on the northwest side of Suboperation A. This unit was placed to extend Suboperation A. Large quantities of ceramics were recovered in the first lot. Lithic debitage and obsidian bladelets were also recovered from Lot 1. Because there is a well established chronology through the controlled excavations of Suboperation A and B, Lot 2 consisted of all plaster floors, from 66 cm below Datum 1 to 127 cm below Datum 1, a total of 61 cm. Lot 2 was terminated at the gray (burned) marl fill above the feature. Lot 3 consisted of the gray (burned) marl fill.

### ***Suboperation J***

Suboperation J in similar fashion to Suboperation I, a 1 x 1 m, unit was placed directly on the northeast side of Suboperation A. The same excavation method was practiced in this suboperation. The first lot consisted of the humus layer, Lot 2 consisted of all the plaster floors, while Lot 3 consisted of the gray (burned) marl above a thin layer of rock tumble.

Similar artifacts, ceramic sherds, lithic debitage, and obsidian bladelets, were recovered from this suboperation. However, Late Preclassic ceramics were recovered from within the gray marl fill.



Figure 5. Interior Plaster Floor of Structure: Suboperation A.



### ***Suboperation M***

Suboperation M located directly north of Suboperations A, I, and J, was a 3 x 1.3 m unit (east-west and north-south). This suboperation was used to further expose the structure located in Suboperation A. Because the controlled excavations in Suboperations A and B produced a chronology for the courtyard, Suboperation M was excavated in similar fashion to Suboperations I and J. The first lot consisted of the humus layer. Large quantities of ceramics were recovered from this lot. Lithic debitage and obsidian bladelets were also recovered. The second lot consisted of all the plaster floors, prior to the gray (burned) marl covering the structure. As excavations proceeded in Lot 2, a dark ashy lens was encountered. Further excavations revealed a circular feature; the feature was documented as Lot 3. This circular feature measures 65 x 70 cm in diameter and is 15 cm deep (Figure 7 and 8). The feature was located 30 cm above the platform of the pole and thatched structure mentioned above, separated by dry construction fill and a plaster floor. The circular feature appeared to be constructed into the plaster floor, and fashioned out of limestone rocks measuring approximately 20 cm in length. There was a high concentration of ash, charcoal, large ceramic sherds, and some chert flakes within the feature. The various layers of ash, charcoal, and ceramic sherds suggest that it was used on multiple occasions. Two of the largest sherds were from a “mammiform tetrapod” vessel. Mammiform tetrapods are considered a subclass of elite trappings that date to the Proto-Classic period (A.D. 150-250). It is argued that this artifact class served as a currency among the elite circles and was used to reestablish trade and political alliances that collapsed during the Late Preclassic period (Reese-Taylor and Walker 2002). The large amount of ash and charcoal, the various layers of large ceramic sherds, and the types of sherds (mammiform) implies that this feature was a ritual burning pit, used for multiple ritual events. Lot 4 consisted of the burned marl that covered the thin layer of rock tumble and the structure.

### ***Suboperation S***

Suboperation S was placed within the chultun located in Suboperation B. The cavern located in the profile of Suboperation B during the 2007 field season is a chultun that was carved into the bedrock (Figure 9). The chultun measures 1.70 m x 1.90 m, and is located two meters below the ground surface. A primary burial was located in the chultun, possibility dating to the Late Preclassic period (300 B.C. to A.D. 250, Figure 10). The burial was mapped and excavated; however, the cranium and femora were missing. The removal of long bones and the cranium is regarded by many as evidence for the practice of ancestor veneration (McAnany 1998). This form of ancestor veneration has been interpreted as the raising of the status of a deceased ancestor. The remains were beneath approximately 15 cm of dark organic soil that contained pieces of charcoal suggesting post-burial ritual event. What we interpreted as dark organic soil may have been decomposed organic funerary objects (carved wood objects, feathers, or burial mats). The burial lacked non-perishable funerary objects. However, meticulous screening, using 1/16 inch screen, afforded the discovery of a small piece of a carved shell ornament and red chips of ceramic slip, suggesting that at one point non-perishable

funerary objects were present, and perhaps removed when the femora and cranium were removed.



Figure 6. Terrace attached to the east side of structure: Suboperation A.



Figure 7. Circular Feature/Ritual Burning Pit: Suboperation M.





Figure 8. Circular Feature/Ritual Burning Pit: Suboperation M.

**Structures 13 and 15, Suboperations K, O, Q, R, T, U:**

During the 2007 season excavations of Structures 13 and 15 were conducted to define the dimensions and construction phases. During the 2007 season suboperations D, E, and F exposed the axial staircase of Structure 13. Based on the 2007 excavations, and the 2008 cleanup and reassessment, it was determined that Structure 13 was not a vaulted structure. During the 2007 season, Suboperation G was placed on the southern end of the eastern façade of Structure 15 to expose the corner of the building. Unfortunately, the last construction phase of Structure 15 was too badly eroded to define a corner. During the 2008 season, several Suboperations, R, T, and U, were placed on the northern façade of Structure 13 to define the dimensions and form of the structure. Extensive excavations also took place on Structure 15. Suboperations, K, O, and Q, were placed on the presumed mid-line, on the eastern façade to expose the axial staircase, and locate doorjambs.

***Suboperation K***

Suboperation K consisted of a unit measuring 2 x 2 m, placed through the presumed mid-line of Structure 15. The first two lots of this suboperation consisted mostly of rock tumble and humus. The axial stair alignment was exposed, however only two poorly preserved steps were visible. High concentrations of ceramics, dating to the Late and Terminal Classic periods were recovered. The consolidation of Suboperations K, O, and Q, took place within the fourth lot, making Suboperation K a 4.5 x 2 m trench (east-west

and north-south). A fragment of a small incensario, of a human face with appliqué, was found at the base of Lot 4. Four intact obsidian blades, closely associated with one another, were recovered from the southern central region of the unit. These blades may have served as bloodletting instruments. These findings suggest that termination rituals took place prior to the final abandonment of the courtyard. In order to preserve the four



Figure 9. Chultun Cap Stone: Suboperation S.

step alignments, Suboperation K was bisected. The southern half, now a 4.5 x 1 m (east-west and north-south) unit, was converted into Suboperation K, Lot 5. In Lot 5, the fill from the last construction phase was removed, to expose the earlier construction phase. A plaster floor at the base of the structure was followed into the construction fill, however the floor terminated before the earlier construction phase was located. The excavation of the construction fill continued, but an earlier construction phase could not be located. Perhaps the last construction phase of this structure was quite significant, and a large amount of construction fill overlies the earlier construction phase, and further excavations are required.



Figure 10. Primary Chultun Burial: Suboperation S.

### ***Suboperation O***

Suboperation O was a 1 x .50 m unit directly east of Suboperation K, at the base of Structure 15. This suboperation was placed to further expose a plaster floor, and to further expand Suboperation K. Extremely high concentrations of ceramics were recovered from all three lots, however the highest concentrations came from Lot 1. There were also obsidian bladelets and lithic debitage recovered from Lots 2 and 3. The high concentrations of ceramics may represent what has been termed a “special deposit.” These special deposits are thought to represent termination ritual activity. This deposit

may also represent evidence of pilgrimage offerings conducted during Postclassic times (Hammond and Bobo 1994). Ceramic analysis has yet to be conducted, thus the date of the ceramics is not known.

#### ***Suboperation Q***

Suboperation Q was a 2 x 2 m unit set directly west of Suboperation K to further expand and expose the axial staircase. The first lot consisted of the humus layer mixed in with large rock tumble. This structure is very badly damaged due to tree falls and other environmental elements, thus there is significant rock tumble on the structure and at the base of the structure. Very few ceramics and lithics were recovered from the first two lots of the suboperation. There were high quantities of large ceramics sherds, lithic debitage, and an obsidian bladelet found in Lot 3. Two step alignments were exposed in the third lot, however they were not well preserved.

#### ***Suboperation R***

Suboperation R consisted of a 2 x 1.5 m (east-west and north-south) unit, placed on the northern façade of Structure 13. This suboperation was placed two meters to the west of the axial staircase exposed during the 2007 season. Suboperation R exposed three steps that align with the steps from the axial staircase (Figure 11). The first lot consisted of the humus layer mixed in with collapsed cut stones, most likely from the top of the structure. Ceramic sherds, lithic debitage, and obsidian bladelets were recovered from this suboperation. Based on the ceramic analysis, this was a Late and Terminal Classic construction phase. This suboperation suggests that an outset staircase runs almost the entire length of Structure 13.

#### ***Suboperation T***

Suboperation T was a 2 x 1 m (north-south and east-west) excavation set in the presumed eastern corner of Structure 13, on northern façade of the structure. The first two lots consisted of the humus layer and rock tumble, with few ceramic artifacts. Lot 3 exposed what is presumed to be the corner of Structure 13. This suboperation revealed the southern and western walls of the building that formed the inner corner of the building, again suggesting that the building has an outset staircase that extends nearly the entire length of the building.

#### ***Suboperation U***

Suboperation U consisted of 3 x 1 m (north-south and east-west) unit set in the presumed western corner of Structure 13, on the northern façade of the structure. This suboperation consisted of one lot that exposed two alignments that match up with the first two steps in Suboperation R, and the axial staircase. A small number of ceramic and lithic artifacts were collected from this suboperation. Ceramic analysis has yet to be conducted, but based on the ceramic analysis from the other two suboperations on this structure, the last construction phase of this structure dates to the Late and Terminal Classic eras.



**Northwest Area of Courtyard, Suboperations L, N, and P:**

Three suboperations were placed in the northwest region of the courtyard to establish the dimensions of a wall that enclosed the northwest side of the courtyard, and to determine when the wall was constructed. The two other suboperations were placed to establish how the area west and east of the wall was used.



Figure 11. Outset Staircase, Northern Façade of Structure 13: Suboperation R.

***Suboperation L***

Suboperation L consisted of a 4 x 2 m (east-west and north-south) unit placed on the southern most section of the wall. Based on the ceramic analysis the wall is a late addition, dating to the Late and Terminal Classic period. The wall measures 1 m wide, 40 cm high, and extends 16 m to the north from Structure 15 and 10 m to east toward Structure 14 (Figure 12). There was significant rock tumble, mostly on the west side due to the slope, which had to be removed before the dimensions of the wall could be determined. The wall must have been much higher than the present day height, based on the amount of rock tumble on the west side. The wall was built upon a plaster floor; however, the floor is better preserved on the western side of the wall, possibly protected by the rock tumble. There were ceramic, lithic, and obsidian artifacts within the two lots of this suboperation. The east side of the wall contained higher concentrations of large ceramic sherds (5-7 cm), and many of the sherds appear to be from thick water storage type vessels. A couple of large bifaces were located on the eastern side of the wall, but only small concentrations of lithic debitage were located on this side of the wall. The west side of the wall had few ceramic sherds, but higher concentrations of lithic debitage. This suggests that different activities were taking place on either side of the wall. The

wall may have functioned as a defensive feature, based on the fact that during the Late and Terminal Classic periods, warfare was prevalent throughout the Maya Lowlands. The wall may have also functioned as a barrier to keep people out, and from viewing the activities taking place in the courtyard.



Figure 12. Defensive Wall, Northwest section of courtyard: Suboperation L.

### ***Suboperation N***

Suboperation N consisted of a 1 x 1 m unit placed two meters from the western façade of Structure 14, and on the eastern side of the wall. The removal of the humus level revealed a cut stoned surface (cobbed surface), across the entire unit. Excavations uncovered a total of four plaster floors (Lots 3,4,5,6). The last two lots consisted of dry construction fill made up of large chert and limestone boulders. Within Lot 6, the boulders were 7 x 10 cm to 24 x 34 cm, the boulders increased in size in Lot 7, and measured 37 x 26 cm. Lithic and ceramic artifacts were collected from all eight lots, however obsidian was only recovered from Lot 2. The ceramics recovered from Lots 4 and 7 date to the Late and Terminal Classic periods (Tepeu 2-3).

### ***Suboperation P***

Suboperation P consisted of a 1 x 1 m unit placed on the western side of the wall. This unit consisted of three lots; the first lot consisted of the humus layer. The last two lots consisted of large construction fill mixed in with dark soil, that becomes more clay like with depth, suggesting that the builders used a combination of sandy and clay soils for the construction of this section of the platform. The construction fill consisted of large chert and limestone boulders measuring between 5 x 8 cm to 40 x 40 cm. The linear arrangement of the boulders suggests the use of construction pens. Typically construction pens are used to contain the construction fill and provide more stability. Ceramics and lithic were recovered from this suboperation, however there were more ceramic artifacts. Obsidian bladelets typically found within the humus layer were absent in this suboperation. The fact that this suboperation lacked plaster floors and consisted of large cobble construction fill suggests that the region on the west side of the wall was not a formalized space.

### **CONCLUSIONS**

The Los Pisos Courtyard may have been established as a sacred space by the Late Preclassic period by an elite population or at the very least an important segment of the population. The first occupation at the Los Pisos Courtyard is evidenced by the dark organic soil found directly above the bedrock. The organic soil may represent a living surface, where domestic activities, such as food preparation, and consumption took place. The chultun burial suggests that an important individual was buried there during the Late Preclassic period. Various analyses will be conducted on this individual to determine his status and life history. Based on in-situ analysis he was a male between 20-30 years old. DNA analysis will be conducted, as well as stable isotope analysis to determine the diet of this individual. Paleopathology will also be conducted to determine any diseases, life stresses, and trauma. It appears that after the burial of this individual, the platform was built up. Perhaps after the burial of this individual, this area was transformed from a residential area to a sacred space used by elites for ancestor veneration.

The structure found in Suboperation A clearly suggests that the courtyard functioned and was configured differently during earlier times (Late Preclassic period). The structure appears to have been a combination of masonry and a pole and thatched construction. Perhaps this was a residential area during the Late Preclassic period. The ritual pit, perhaps dating to the Proto-Classic period (A.D. 150-250) found above the structure suggests that the space was transformed, perhaps to the courtyard configuration seen in the Late and Terminal Classic eras. The burned marl above the structure and the ritual pit indicate that ritual activities were taking place in this locus, from as early as the Later Preclassic and the Proto-Classic periods (300 B.C. to A.D. 250).

The excavations of Structures 13 and 15 provided information about the last construction phase. It appears that Structure 13 had an outset staircase during the Late and Terminal Classic period. Vault stones are lacking in all the excavations conducted on this structure

suggesting that the structures on the summit had beam and daub roof construction. The axial staircase of Structure 15 was located, however the summit was not reached. The construction fill of the last construction phase was very extensive suggesting that the last construction phase was monumental. The large quantities of ceramic sherds at the base of both structures may be an indication that termination rituals were conducted prior to the abandonment of the Los Pisos Courtyard. The complete obsidian blades and incensario fragment also support this interpretation. However, there were large quantities of ceramic sherds from the Late and Terminal Classic eras throughout the plaza, and may also be an indication that the courtyard was already abandoned, and was no longer being maintained. Because excavations of the interior spaces have not been conducted, the use of these structures remains enigmatic.

During the Late and Terminal Classic periods the courtyard was very protected and had very restricted access. This is evidenced by the configuration of the structures in the courtyard, and the wall on the northwest area of the courtyard. The wall appears to be a late addition, dating to the Late and Terminal Classic periods. It is not known if the wall was used for defensive purposes or a barrier. The Late and Terminal Classic periods were politically volatile times and warfare was widespread—a defensive wall around the area where the most politically important individuals reside, or conduct daily business seems logical.

The 2008 excavations have revealed relevant information about the development, the final occupation of the acropolis, ritual activity, and last architectural construction phase. The excavations in the exterior courtyard area revealed the transformations that have taken place in the courtyard from the Late Preclassic to the Late and Terminal Classic periods. It appears that the area, approximately 2 m from the northern façade of Structure 13, was used differently. Additionally the excavations of Structures 13 and 15 have revealed information about the last construction phases of both structures. The excavations in the northwest region of the courtyard illustrated how the area was used for different purposes and how the Los Pisos Courtyard was transformed into a socially and physically restricted space, and perhaps protected during the crisis and turmoil of the Late and Terminal classic periods. The temporal dynamics for use and function of the Los Pisos Courtyard is not fully understood. However, with more excavations, and comparison with other similar sites, a better understanding, and more robust interpretations will be possible.

\* A version of this paper was previously submitted as part of a report (2008) to the Institute of Archaeology, Belmopan, Belize.



**REFERENCES CITED**

- Ambrosino, James N.  
2003 The Function of a Maya Palace at Yaxuna. In *Maya Palaces and Elite Residences*, edited by Jessica Joyce Christie, pp. 253-273. University of Texas Press, Austin.
- Andrews, George F.  
1975 *Maya Cities: Placemaking and Urbanization*. University of Oklahoma Press, Norman.  
1995 *Pyramids and Palaces, Monsters and Masks: The Golden Age of Maya Architecture*. Labyrinthos, Lancaster, CA.
- Ashmore, Wendy  
1991 Site Planning Principles and Concept of Directionality Among Ancient Maya. *Latin American Antiquity* 2(3): 199-126.
- Hammond, Norman and Matthew R. Bobo  
1994 Pilgrimage's Last Mile: Late Maya Monument Veneration at La Milpa, Belize. *World Archaeology* 26(1): 19-34.
- Hammond, Norman, Gair Tourtellot, Sara Donaghey, and Amanda Clarke  
1996 Survey and Excavations at La Milpa, Belize, 1996. *Mexicon* vol. 8:86-91.  
1998 No Slow Dusk: Maya Urban Development and Decline in La Milpa, Belize. *Antiquity* Vol. 72:831-837.
- Hammond, Norman, Gair Tourtellot, Gloria Everson, Kerry Lynn Sagebiel, Ben Thomas, and Marc Wolf  
2000 Survey and Excavation at La Milpa, Belize, 1998. *Mexicon* Vol. 22: 38-45.
- Houk, Brett  
1998 *The Archaeology of Site Planning: An Example from the Maya Site of Dos Hombres, Belize*. Ph.D. Dissertation, Department of Anthropology, University of Texas, Austin.
- Kosakowsky, Laura J. and Kerry Sagebiel  
1996 The Ceramic Sequence at La Milpa, Belize. *Mexicon* Vol. 21:131-136.
- Martinez, Maria  
2007 Excavations at La Milpa, Belize: Operation A2. In *Programme for Belize Archeological Project: Report of Activities from the 2007 Field Season*,

*Martinez*

edited by Fred Valdez Jr., 15-28. Report submitted to the Institute of Archaeology, National Institute of Culture and History, Belmopan, Belize.

2008 Excavations at La Milpa, Belize, Los Pisos Courtyard, Operation A2: Report of the 2007 Season. In *Research Reports from the Programme for Belize Archaeological Project, Vol. 2*, edited by Fred Valdez, Jr., pp. 29-43. Occasional Papers 9, Mesoamerican Archaeological Research Laboratory. The University of Texas at Austin.

McAnany, Patricia A.

1995 *Living with the Ancestors*. University of Texas Press, Austin.

Reese-Taylor, Kathryn, and Debra, Walker S.

2002 The Passage of the Late Preclassic into the Early Classic. In *Ancient Maya Political Economies*, edited by Marilyn A. Masson, David A. Freidel, pp 87-122. Alta Mira Press, Walnut Creek, CA.

Sagebiel, Kerry

2005 *Shifting Allegiances at La Milpa, Belize: A Typological, Chronological, and Formal Analysis of the Ceramics*. Ph.D. Dissertation, Department of Anthropology, University of Arizona.

## **INVESTIGATIONS (2008) AT LA MILPA, BELIZE: PLAZA A, STRUCTURE 4\***

Rissa M. Trachman, Elon University

### **INTRODUCTION**

Investigations at the site of La Milpa, Belize during the 2008 field season included the conclusion of preliminary excavations in Plaza A, Structure 4. The northernmost portion of the site, Plaza A is comprised of four temples, two range structures, two ballcourts, and two smaller structures. Structure A-4 is one of these smaller structures. It is located to the north of Temple 1 (Figure 1).

The proximity of Structure A-4 to Ballcourt 1, approximately 30 m to the east and perpendicular in orientation to its center axis (Figure 1), highlighted the primary investigative pursuit with regards to the structure's function for the 2008 season. Structure A-4's location would have provided it with a direct view of the ballcourt alley and therefore, also the ballgames (and events) that took place there.

### **EXCAVATIONS**

The summer 2008 field season's primary aim was to further delineate the architectural elements on the front of the building, primarily the central staircase. As such we continued working in several of the excavation units that were begun in 2007, specifically Subops C, E, and F (Figure 2). In addition to these two new excavations units were opened, Subops G and H.

Excavations Subops C, E, F, and G were located on the central staircase (Figure 2). The units were oriented cardinally although the terminal phase of architecture as exposed in 2007 was oriented at approximately 12°. What was apparently an earlier phase of construction under the terminal phase was uncovered at the end of the field season last year and designated Structure A-4 Sub 1. The 2008 season program of excavation was primarily concerned with continuing that exposure which was oriented almost cardinal. The least preserved exposure of the substructure (from 2007) was approximately 6°, while new exposures in Subop E, exposed the 2008 season, revealed intact well preserved architecture oriented at 2°.

The central staircase was well defined in these exposures during the 2008 season. Though the mid-section of the staircase was the most dilapidated, much can be said about the form of this architectural feature. The steps on the staircase were very wide and the staircase as a result was not very steep. The overall slope of the stairway was 0.34, based on a total rise of 2.4 m and a total run of 7 m. The exposure of the Structure A-4 Sub 1 staircase revealed short rises on each step and very long runs. At least seven total steps



Figure 1: La Milpa site center (Tourtellot et al 2003).

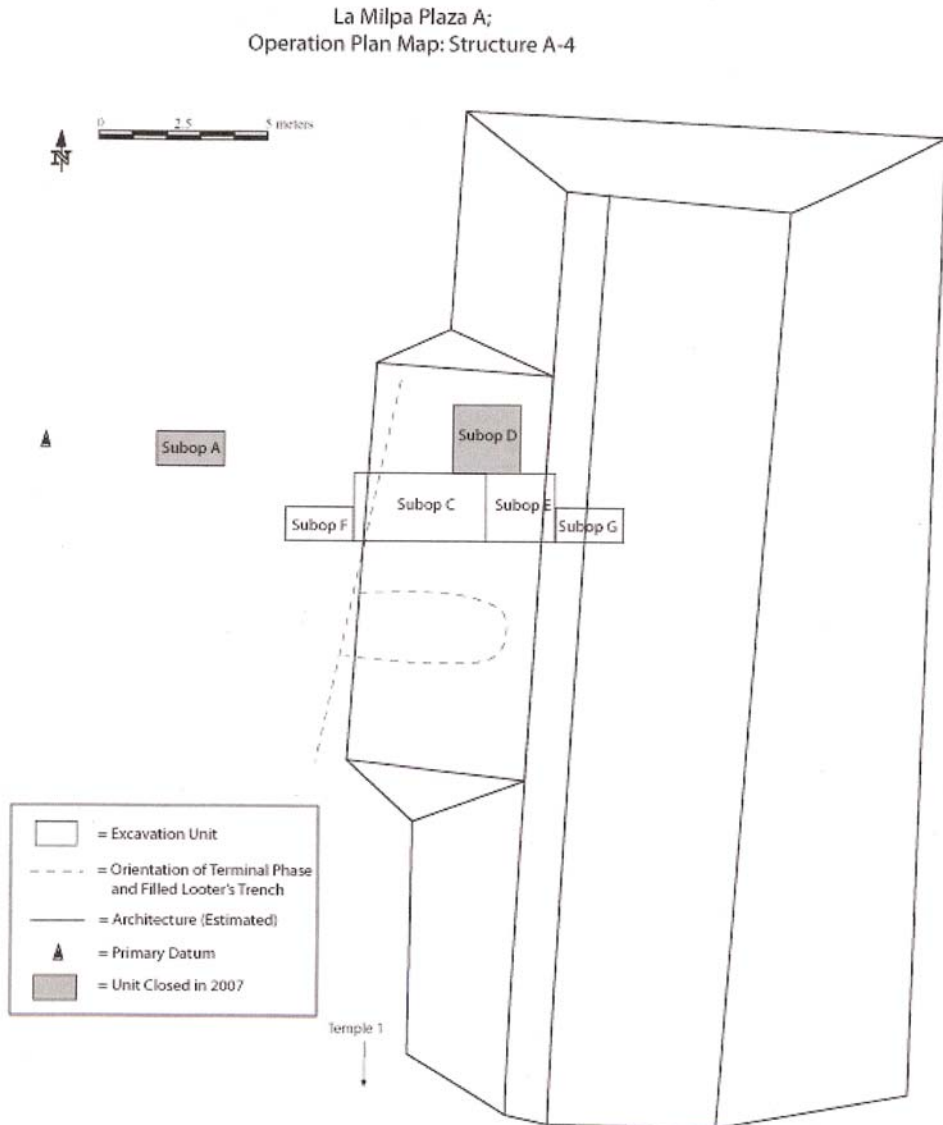


Figure 2: Structure A-4, operation plan map, revised from 2007 (compiled by author).

remained on this central staircase, with an range of 20 cm to 36 cm in rise, an average rise of 25 cm. Five of the seven steps have an actual rise of 24 cm, closely matching the average. The run on each step ranges from 38 cm to 244 cm. The shortest measurement results from two adjacent steps, a rarity in this staircase. The average run of the staircase

is approximately 144 cm. Four of the runs are fully 100 cm or more, the largest of which is 244 cm. The standard slope in stairway construction today is 0.60-0.68, based on a seven inch rise and an 11 inch run (Atkinson 1984).

Subfloor excavations were also conducted by sectioning half of the stairway exposure. The most dilapidated side of the stairway, the northern half, as exposed in Subop C (Figure 2), had no intact architecture at all. It was this half that was removed in order to follow the exposure of a plaster floor at the base of the stairway. The floor existed far underneath the stairway, a distance of at least the entire four meter length of the excavation unit. No other architectural features were noted in Subop C, with one exception. In the profile of the east unit wall of Subop C revealed a possible alignment of stones near the floor. The alignment was crude and inconclusive, but may represent an earlier construction, Structure A-4 Sub 2.

## **CONCLUSIONS**

The hypotheses suggested in the previous report of the 2007 investigations, which guided our investigations for 2008, were that the structure was possibly 1) related to the ballcourt, used as a viewing stand; 2) symbolically associated with Temple 1; or 3) an elite residence. Each hypothetical function suggested cannot be considered mutually exclusive. Time constraints in the 2008 season allowed for the conclusive testing of only one of the hypothesis, that the function of the structure was somehow related to the ballcourt.

The conspicuous construction of the Structure A-4 Sub 1 stairway, with very wide steps, or runs on each step is notable. The building is located a short distance, approximately 30 m, from the ballcourt and is directly perpendicular with the ballcourts central axis. The position of the Structure A-4 Sub 1 central stairway also appears to be directly in line with this central axis (Figure 1). I would suggest that the very wide steps (or long runs) on the central stairway of Structure A-4 Sub 1 would have functioned as a viewing stand for the ballgame. It would have served as an excellent vantage point for those seated there.

As for the other possible functions of the structure, its relationship in both chronology and construction to the adjacent Temple 1, and the function of elite residence, both remain to be investigated fully. Time constraints prohibited investigating properly the upper portion of the building and the intermediate area between it and Temple 1. Future investigations will hopefully concentrate on these two aspects of the building in order to solidify the full function of Structure A-4.

\* A version of this paper was previously submitted as part of a report (2008) to the Institute of Archaeology, Belmopan, Belize.

**REFERENCES CITED**

Atkinson, Scott, editor

1984 *Basic Carpentry Illustrated*, 2<sup>nd</sup> edition. Lane Publishing Company,  
Menlo Park, CA.





## **AN OVERVIEW OF ARCHAEOLOGICAL INVESTIGATIONS AT PLAZA B, LA MILPA: THE 2008 FIELD SEASON**

Brett A. Houk, Texas Tech University  
Débora Trein, The University of Texas At Austin  
Gregory Zaro, University of Maine

### **BACKGROUND**

From May 21 to June 11, 2008, the La Milpa Core Project (LMCP), under the direction of Dr. Brett A. Houk of Texas Tech University, conducted its second season of excavations in the Plaza B area of La Milpa, Belize (Figure 1). The project's schedule was impacted by Tropical Storm Arthur, which rained out four field days. The senior professional staff included Houk, the LMCP Principal Investigator, Dr. Gregory Zaro, Antonio Padilla, and Débora Trein. Shannon Smith (excavations) and Greg Hansen (Total Data Station mapping), both undergraduate students, were junior staff in 2008. The laboratory support staff included Lauren Sullivan (ceramicist), Lauren Whitman (laboratory director), and Norma Alicia García Huerta (conservator). Fourteen students on the Texas Tech University Field School in Maya Archaeology and two Belizean workmen conducted the fieldwork.

Plaza B is the second largest plaza at La Milpa. Range structures define the northern, western, and southern margins of the plaza, and Structure 21, the fifth largest pyramid at La Milpa, is on the eastern side of the plaza. Attached to the southern side of the plaza are two small courtyards: Courtyard D and the Kotanil Courtyard. West of the Kotanil Courtyard is Plaza C, the third largest plaza at La Milpa. The southern side of Plaza C is marked by Structure 32, the entrance to the Acropolis at La Milpa.

During the 2007 season, which was the first for the project, the LMCP conducted excavations in Plaza B and the adjacent Courtyard D (see Figure 1). The goals of the 2007 investigations were to gather initial chronological data from test pitting and characterize the condition and nature of the final construction phases on several buildings. Excavations were conducted on Structures 21, 22, 23, and 27 (Houk 2007). The results of those initial excavations guided the placement of new excavation units in 2008.

### **METHODOLOGY AND 2008 RESEARCH DESIGN**

In 2007, Operations B1 and D1 encompassed all excavation units in Plaza B and Courtyard D, respectively. In 2008, excavations at each structure were assigned their own operation numbers to make it easier to differentiate the new excavations from the old and to allow for consecutive suboperation designation by structure (Figure 2; Table 1). Whether or not this proved to be a wise decision is a matter of debate. In some cases it

was necessary to reopen a unit from 2007, and in those instances the unit retained its original designation.

In 2008, the LMCP addressed two research agendas: determining the function of individual structures at Plaza B and Courtyard D and investigating a possible ritual program of caches incorporated into the plaza plan, and completing the excavations initiated in 2007 on Structure 21. Each agenda is discussed below.

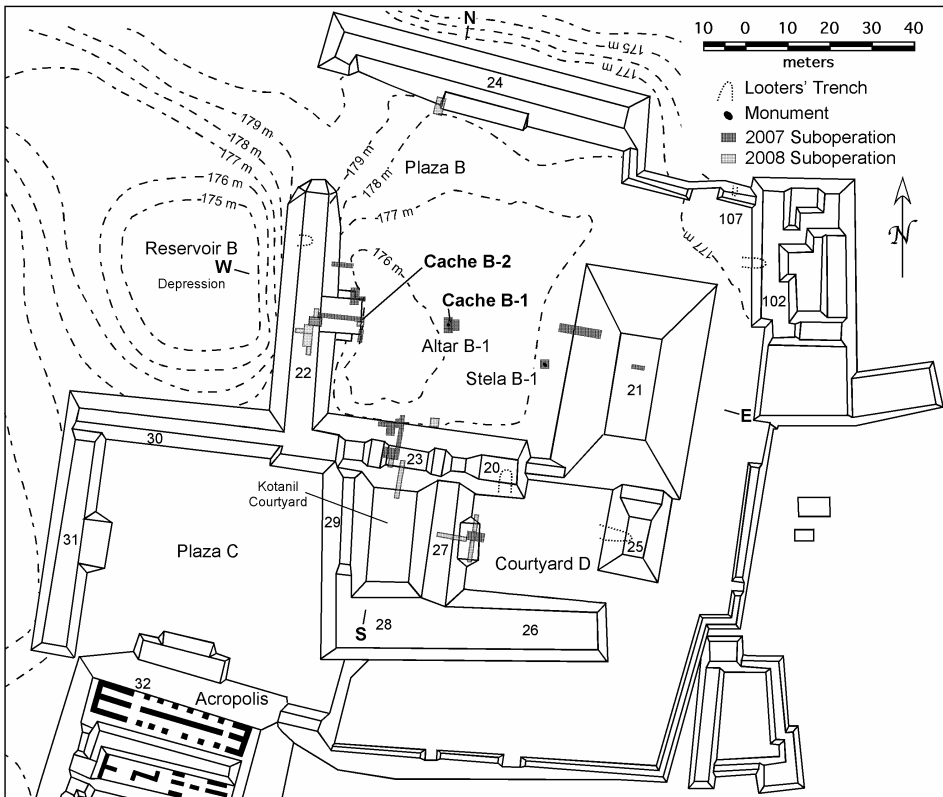


Figure 1. Map of excavations in Plaza B. See Figure 4 for N-S and E-W cross sections.

### Research Agenda 1: Structure Function

In 2007, LMCP archaeologists determined that Structures 22 and 23 were large, stepped platforms supporting rooms on their summits. At Structure 22, excavations defined the corners of a central stair and exposed the final construction phase of the steps ascending the stair to the building's summit. At Structure 23, excavations exposed a portion of the stepped platform, an outer wall, and interior floor of a room on the building. Curiously, the excavations also encountered evidence that the rooms on Structure 23 may have been

intentionally filled and the resulting platform utilized as a living surface late in the history of the plaza. Part of the central stair to Structure 27 was exposed in 2007, as was an earlier, well-preserved plaster floor. The floor was stratigraphically below the Late Classic stairs, but it was not clear with what it was associated.

The 2008 season targeted the summits of Structures 22 and 23 to investigate the nature and condition of the buildings. Excavations were designed to expose the final architectural phase and define the size of rooms on summits of Structures 22 and 23. On Structure 27, excavations attempted to follow the stairs farther up the mound and to remove a portion of the Late Classic stairs to expose the underlying plaster floor. Additionally, new excavations were opened on Structure 24 to expose a corner of the stairs to that range structure and assess the condition of the terminal architecture.

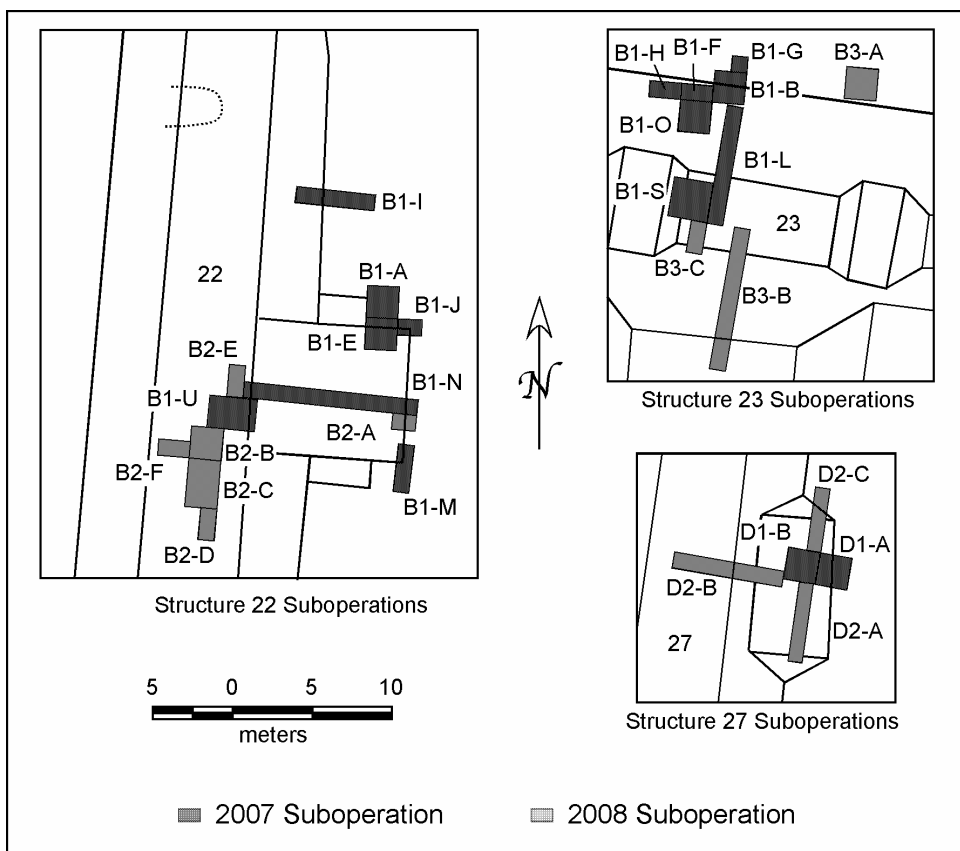


Figure 2. 2007 and 2008 suboperation designations and arrangement on Structures 22, 23, and 27.

Table 1. Suboperations Excavated in 2008, organized by structure.

<b>Str.</b>	<b>Op</b>	<b>Subop</b>	<b>Size (m)</b>	<b>Location</b>	<b>Lots</b>
22	B1	U	2 x 3	Top of central stair, oriented east-west	7
22	B2	A	1 x 1.5	Base of central stair, adjacent to southern edge of the eastern end of Subop B1-N; Cache B-2 expansion	8
22	B2	B	2 x 2	Top of structure, adjacent to southern edge of Subop B1-U, offset 1 m to the west	7
22	B2	C	2 x 3	Top of structure, adjacent to southern edge of Subop B2-B	6
22	B2	D	1 x 2	Top of structure, adjacent to southern edge of Subop B2-C	3
22	B2	E	1 x 2	Top of structure, adjacent to northern edge of Subop B1-U	3
22	B2	F	1 x 2	Top of structure, adjacent to western edge of Subop B2-B	3
23	B1	L	1 x 1	Continuation of portion of 2007 excavation; excavated through damaged portion of floor in Structure 23	7
23	B1	S	2.5 x 2.5	Top of structure, adjacent to western edge of Subop B1-L	11
23	B3	A	2 x 2	Base of mound on Structure 20/23 centerline; abandoned due to trees	3
23	B3	B	1 x 9	Unit from base of mound to summit on centerline, southern side of structure, oriented north-south	12
23	B3	C	1 x 2	Oriented north-south, south of Subop B1-S	2
24	B4	A	2 x 4	Southwest corner of central stair to building, oriented 15° east	
24	D1	B	2 x 2	Western 2 x 2 m unit of two opened in 2007 on approximate centerline of stairs to structure	5
27	D2	A	5 x 0.9	On southern side of stair, adjacent to southern edge of Subop D1-A; exposed steps and southern edge of stair	3
27	D2	B	1 x 7	On stair, oriented east-west, west of Subop D1-B, overlapping with southern 50 cm of Subop D1-B's western edge	7
27	D2	C	4 x 0.9	On northern side of stair, adjacent to northern edge of Subop D1-A; exposed steps and northern edge of stair (heavily disturbed by tree roots)	3

## **Research Agenda 2: Ritual Program of Caches**

In 2007, excavations encountered a plaza cache beneath Altar B-1 (Cache B-1) and a centerline cache at the base of the stair to Structure 22 (Cache B-2). The latter cache was not completely excavated because it extended beyond the 2007 excavation unit. In 2008, the LMCP proposed to test a site-planning hypothesis by targeted the predicted locations of caches.

Ashmore (1991:200–201) commented on “a particular set of site-planning principles involving cardinal directions” among the ancient Maya that was linked to cosmological concepts including a multilayered universe, unified in time via celestial cycles and vertically connected. In this cosmology, the world was divided into four parts, corresponding to the cardinal directions, with a central position (i.e., a quincunx arrangement). Ashmore and Sabloff (2002:202) have argued that “the spatial expressions of Maya cosmology and of Maya politics constituted the most prominent ideational foundations for planning” Maya cities. Chase and Chase (1998:326) similarly state that “the Maya used their architecture to reflect their cosmos,” and “the pervasive nature of this relationship” is seen in the layout of residential buildings and site centers. They also note that caches “may provide physical representations of the Maya worldview” (Chase and Chase 1998:303).

The LMCP’s hypothesis is that “plaza-based” site planning principles were used during the Late Classic at Plaza B that included marking, with caches, the edges of the plaza and its center in a cruciform pattern. Cache B-1 and its overlying altar mark the center of the cruciform. For a variety of reasons, in 2008 the second research agenda was not pursued as much as planned. The only cache investigations that were conducted focused on the excavation and analysis of Cache B-2, which was a continuation of work initiated in 2007.

## **RESULTS**

Including in this report are discussions of the results of new mapping efforts, excavations at Structure 24, and excavations of Cache B-2. The results of investigations at Structure 22 are reported by Zaro (this volume), and Padilla and Smith (this volume) discuss the excavations at Structures 23 and 27.

### **TDS Mapping**

In 2008, Greg Hansen made a Total Data Station (TDS) map of a significant portion of Plaza B. The purpose of the mapping was three-fold: to provide better horizontal and vertical control over excavation unit locations and datums, produce a contour map of the plaza surface to assist with future attempts to locate a drain beneath Structure 22, and produce a contour map of the major structures to refine the rectified map of the plaza. Figure 1 is a new rectified map of the plaza based on the 2008 TDS data, supplemented by Boston University’s site map for areas not resurveyed in 2008. Figure 3 is a three-dimensional surface map, which shows a number of interesting features including the

slope into the plaza and the massive size of Structure 21 in relation to the other buildings. Figure 4 depicts two cross-sections of the plaza (refer to Figure 1 for the location of the cross-sections).

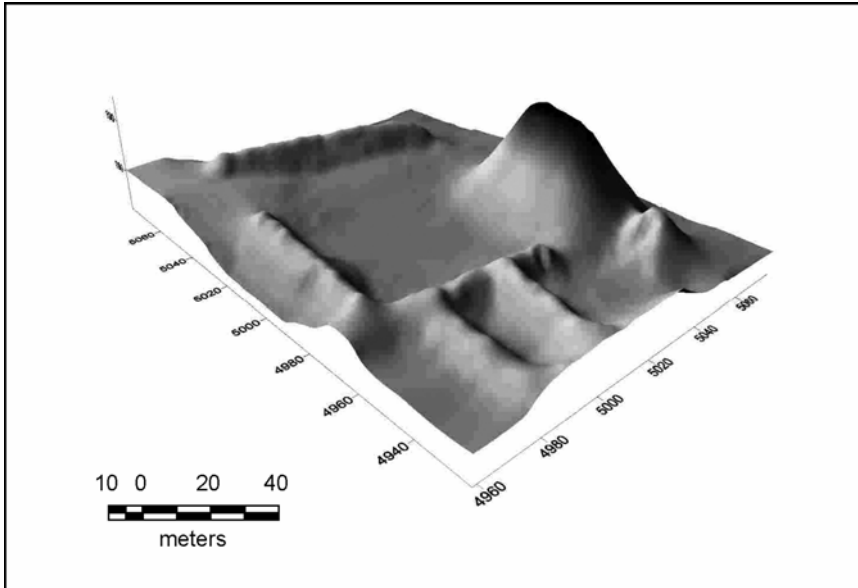


Figure 3. Surface map of Plaza B produced using 2008 TDS data, view from the southwest.

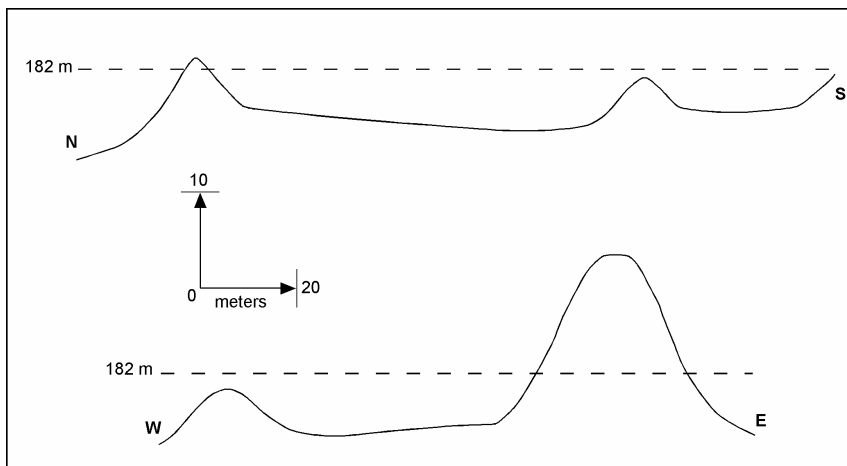


Figure 4. Cross-sections of Plaza B based on 2008 TDS data. See Figure 1 for locations of N-S and E-W cross-sections.

### **Structure 24, Plaza B**

In keeping with the research vein carried out in Plaza B throughout this project, one of the objectives of this excavation season was to explore the nature and character of the other architectural components that are present in Plaza B, in order to hopefully create the basis for a more integrated analysis of the form, functions and meanings associated to this particular area through time. Structure 24 is a relatively large (76 m long, 12 m wide, and 5 m high) mound that forms the northern side of Plaza B. It is oriented approximately 105° east of north. The structure appears to have a 20 m wide central stair (based on surface topography and excavation data). There is a clear central depression on the summit of the mound, suggesting the structure is a platform supporting blocks of rooms on the eastern and western ends, separated by a central landing. There is an apparent spine wall running the length of the mound, broken only in the center where the landing is presumably located. In places, this wall has three courses of stone visible on the surface. Assuming this wall is a central spine, the building presumably was a tandem range structure with rooms on both the northern and southern sides. The northern side of the mound descends steeply into a natural depression, and it is likely that a significant portion of the northern side of the building has fallen away.

The research design for Structure 24 involved two main components: mapping of surface topography and visible architecture with a TDS and excavation. Due to the particularly wet conditions experienced this field season, the volume of work carried out on site was not as high as originally planned, but the data gathered still enable the proposal of some preliminary hypotheses about Structure 24.

#### ***Survey***

Mapping of the structure was carried out with a TDS over the course of three weeks, as part of an effort to map all architectural features in Plaza B. Initial informal surveys of the mound, carried out after clearing surface debris (leaves and other organic matter), identified several probable in situ architectural elements. These consisted of alignments of roughly cut, rectangular limestone slabs throughout the southern façade of the mound as well as on its summit. These alignments corresponded to the general orientation of the structure of 105° east of north.

#### ***Excavation***

Another facet of the research conducted at Structure 24 entailed archaeological excavations, designed to assess the condition of the terminal architecture on the building. Due to complications with weather conditions at the site, only one unit (Operation B4, Suboperation A) was established this season, at the western edge of the possible staircase (see Figure 1). Subop B4-A was a 2 x 4 m unit, aligned 15° east of north, perpendicular to the long axis of the structure, and placed directly over the perceived corner of the central staircase. The stratigraphy of this unit, as far as excavated, proved to be quite straightforward (Table 2).

Table 2. Summary of Lots in Subop B4-A.

<b>Lot Number</b>	<b>Lot Description</b>	<b>Lot Interpretation</b>
B4-A-1	Humus	N/A
B4-A-2	Un-aligned limestone slabs and cobbles	Collapse debris
B4-A-3	Plaster of variable condition	Plaza floor
B4-A-4	Large cobble in dense clay soil matrix	Construction fill for plaza floor
B4-A-5	Architecture	Stairs of Str. 24
B4-A-6	Architecture	Southern façade of Str. 24, possible stairside outset

Once the topsoil (Lot B4-A-1) was removed, surface architectural alignments became more visible and could be easily followed, assuring also the straightforward removal of architectural collapse (Lot B4-A-2). The removal of these two lots allowed for a number of observations to be made on the last construction phase’s architecture. The northeastern side of the unit presented relatively intact stone alignments, running 15° east of north, which were clearly steps (Lot B4-A-5). Five steps were partially exposed in the unit (Figure 5). The northwestern side was characterized by a much steeper set of stone alignments, strongly suggesting the southern façade wall of the structure or perhaps a stairside outset (Lot B4-A-6). The junction between these two features was well preserved. Also present were the remains of a plastered plaza floor (Lot B4-A-3) on the southern half of the unit. The condition of the plaster was variable throughout the unit, with better preservation immediately south of Lot B4-A-6, possibly due to better protection from the elements in the depositional process. These same depositional processes also affected the plaster on the southern-most area of the unit, where it is highly eroded or non-existent. A 1 x 1 m section of the suboperation was excavated through the plaza floor level in the southeastern corner of Suboperation B4-A to examine the stratigraphy below the floor and reach bedrock and/or sterile levels. This corner of the unit was chosen because there were no highly visible traces of plaster, thus restricting the destructive impact of excavations. Directly below the level of plaster, a layer of large cobbles (10+ cm diameter) in a dense clay soil matrix was uncovered (Lot B4-A-4). Due to time restraints, however, we were unable to reach bedrock or sterile levels.

### **Summary**

The limited investigations of Structure 24 suggest that this building was a long tandem range structure with a 20-m wide central stair. Structure 24 stands out from other range structures in Plaza B not only due to its larger size, but also for the remarkable preservation of the last construction phase architecture. The unfortunate weather conditions of the 2008 field season effectively limited the capacity for data gathering at this structure, however the extensive surveying and preliminary excavations have created the basis for a much more focused and target-specific excavation methodology in a future field season.





Figure 5. Photograph of western edge of stair to Structure 24, facing northeast.

## Cache B-2

Excavations at the base of Structure 22 in 2007 (Subop B1-N) partially recovered a cache deposit (Cache B-2) located within the construction fill approximately 0.4 m beneath the plaza surface and centrally positioned with respect to the building's principal staircase. In 2008, the excavation of Subop B2-A recovered the remaining objects and contextual information of Cache B-2. Among other objects, the cache contained two sets of jar/lid ceramic vessels, an obsidian biface, and scatters of marine shell (Tables 3 and 4). Importantly, two of the ceramic vessels are stylistically linked by a unique mat design to Cache B-1, recovered in 2007 from beneath the plaza surface along a centerline between Structures 21 and 22 (Houk et al. 2008). The stylistic similarities of these two cache vessels and their architectural contexts suggest that the construction and elaboration of Plaza B and its architectural components were part of a larger ritual plan that extended beyond the dedication of a single structure.

### *Cache Excavations*

Cache B-2 was initially encountered in 2007 during the excavation of Subop B1-N, a 1 x 11 m unit running up the centerline of the stairs to Structure 22. The cache included obsidian blades, marine shells, coral, one obsidian eccentric biface, one chert eccentric biface, two *Spondylus* shell pendant fragments, shell beads, jade beads, and unidentified spines. The objects may have originally been bundled together in a perishable container (a bag or basket), but were encountered loose in a marly matrix with small cobble construction fill. The cluster had an east-west dimension of 20 cm, extended from the southern wall of the suboperation 25 cm into the unit, and was 4 cm thick. Because it was clear that the cache extended south of the excavated area, the excavations were expanded in 2008 (Figure 6). Subop B2-A, measuring 1.5 x 1 m, was placed directly to the south of the eastern end of Subop B1-N. Three lots were defined within Subop B2-A related to the cache: Lots B2-A-5, 6, and 7. Lot B2-A-5 comprised the medium to large (10cm + diameter) limestone cobbles in loose gray soil matrix surrounding the cache, and Lots B2-A-6 and 7 included two pairs of ceramic jars and lids. Initial efforts focused on the excavation of Lot B2-A-5 and associated artifacts, since Lots B2-A-6 and 7 were quite self-contained. These two lots—two ceramic clusters—although fragmented, were relatively stable, which allowed for their complete removal utilizing a plaster cast technique, which permitted more controlled excavation in the lab (Figure 7). After Lots B2-A-6 and -7 were removed, excavation continued on the remainder of Lot B2-A-5 throughout the unit, to ascertain that the entire cache had been exposed. Once sterile clay was reached, the lot and the cache were closed.

Several artifacts related to the cache were collected during the excavation of Lot B2-A-5. Artifacts in this lot were present mainly on the northern side of the unit, approximately 10–30 cm from the unit boundary. These included 12 greenstone beads, one incised red shell, over 80 shells and shell fragments, and one long bone fragment (Table 3). Encountered elsewhere in the lot also were three lithic flakes and 13 ceramic fragments, apparently not related to the cache itself.

Table 3. Inventory of Cache B-2, by lot.

Lot	#	Artifact/Ecofact Type	Comments
B1-N-8	7	Spine-like objects, unknown material	Possible speleothem fragments, ranging from 0.95 to 3.15 cm long
	2	Coral fragments	Species unknown
	3	Beads	Greenstone, 0.64–0.88 cm in diameter
	2	Shell fragments, incised	Red/orange shell, possibly <i>Spondylus</i>
	1	Shell, cut	Pearlescent, possibly Mother-of-Pearl
	1	Shell pendant fragment	Possibly <i>Spondylus</i>
	3	Shell pendants	
	1	Shell bead	Orange, 0.65 cm in diameter
	1	Eccentric, obsidian	11.25 cm (L) by 2.9 cm (W) by 1.45 cm (Th)
	1	Eccentric, chert	11.82 cm (L) by 3.55 cm (W) by 0.85 cm (Th)
	9	Sherds, miscellaneous	
	2	Lithics	Flakes
	173	Shell and shell fragments	At least 10 species represented
	B2-A-5	12	Beads
1		Incised red shell pendant	Possibly <i>Spondylus</i>
13		Ceramic fragments	Not associated with vessels or lids in Lots B2-A-6 or -7
3		Lithics	One chert fragment and two chert flakes
1		Bone fragment	Long bone, probably non-human, possibly ulna. Broken and polished at distal end
89		Shell and shell fragments	At least seven species represented
B2-A-6	1	Ceramic vessel, fragmented	12.21 cm (Diam) by 0.41 cm (Th) by 8.63 cm (Height)
	1	Ceramic, incised lid, fragmented	12.91 cm (Diam) by 0.5 cm (Th) by 5.12 cm (Height)
	1	Biface, obsidian	11.18 cm (L) by 3.63 cm (W) by 1.28 cm (Th), found inside vessel and lid pair
	1	Greenstone fragment	Un-worked, found inside vessel and lid pair
	20	Shell and shell fragments	Found inside vessel and lid pair
	7	Sherds	Not associated with vessel or lid, but found inside vessel and lid pair
	1	Coral fragment	Species unknown, found inside vessel and lid pair
	n/a	Fragments of mother-of-pearl	Recovered in field during excavation of lot
	8	Sherds	Not associated with vessel or lid, recovered in field during excavation of lot

B2-A-7	2	Possible speleothem fragments	Found inside vessel and lid pair
	9	Greenstone fragments	
	31	Shell and shell fragments	Unidentified
	5	Ceramic fragments	Not associated to vessel or lid, but found inside vessel and lid pair
	1	Ceramic vessel, fragmented	11.68 cm (Diam) by 0.65 cm (Th) by 8.77 cm (Height)
	1	Ceramic, incised lid, fragmented	12.61 cm (Diam) by 0.68 cm (Th) by 5.79 cm (Height)

Table 4. Shells from Cache B-2, by lot.

Lot	#	Identification
B1-N-8	1	Possible <i>Ostrea equestris</i>
	1	Possible <i>Pleuroploca gigante</i>
	3	Possible <i>Anomalocardia cuneimeris</i>
	7	Fragments of possible <i>Vermicularia spirata</i>
	1	Possible <i>Nerita fulgurans</i>
	10	Possible <i>Lunarca ovalis</i>
	3	Possible <i>Tellina lineata</i>
	2	Possible <i>Prunum guttatum</i>
	16	Possible <i>Chione cancellata</i>
	17	Possible <i>Anadara notabilis</i>
	31	Unidentified shells
B2-A-5	84	Unidentified fragments of shells
	1	Fragment of <i>Vermicularia spirata</i>
	3	Possible <i>Anadara notabilis</i>
	6	Possible <i>Chione cancellata</i>
	3	Possible <i>Anomalocardia cuneimeris</i>
	8	Possible <i>Lunarca ovalis</i>
	7	Possible <i>Tellina lineata</i>
	11	Possible <i>Nerita fulgurans</i>
	14	Unidentified shells
36	Unidentified fragments of shells	
B2-A-6	20	Unidentified shells and shell fragments
	n/a	Fragments of mother-of-pearl
B2-A-7	31	Unidentified shells and shell fragments

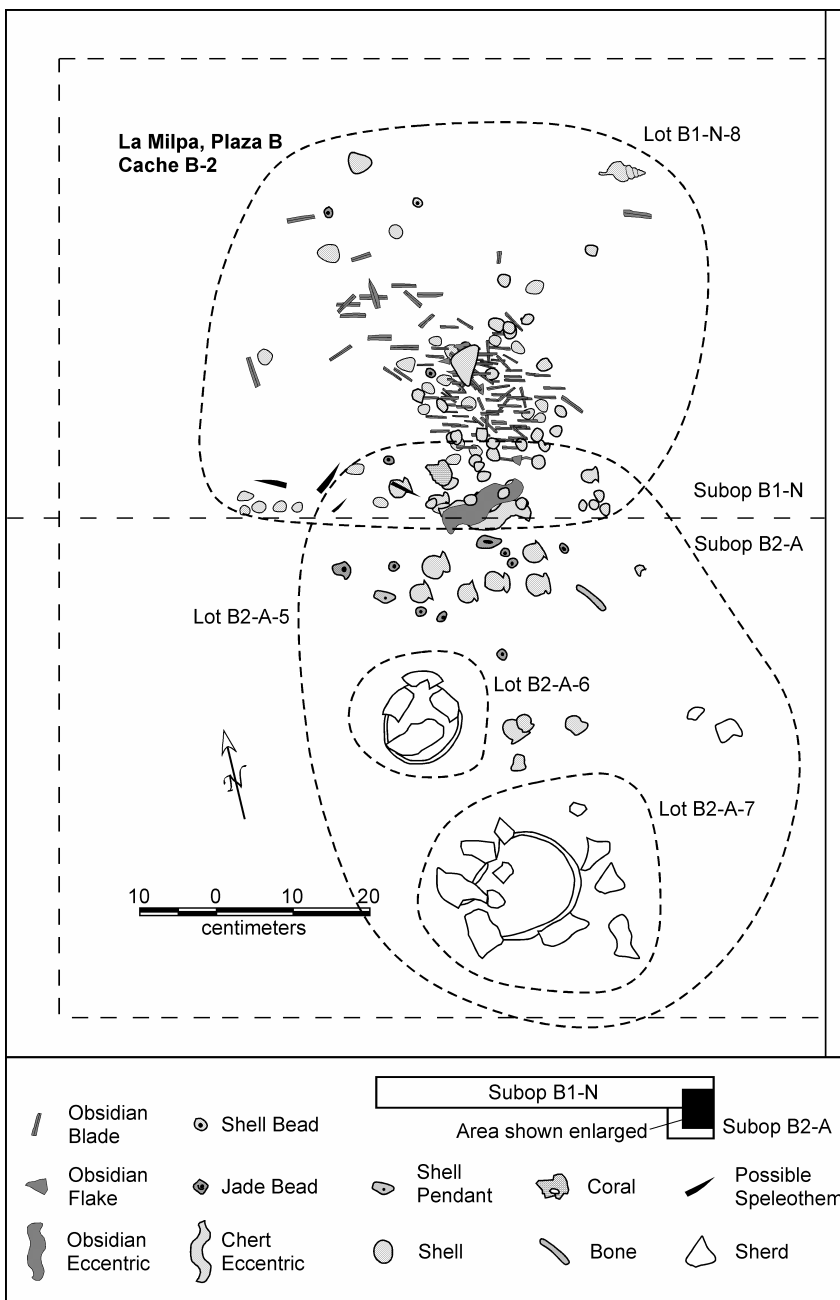


Figure 6. Plan map of Cache B-2 as exposed in 2007 and 2008.



Figure 7. Project staff member Débora Trein preparing Lot B2-A-7 in plaster bandages for removal from the field and eventual excavation in the laboratory.

Lot B2-A-6 was composed of one fragmented ceramic vessel with an incised lid, decorated with the pattern of a mat consisting of three woven strands, and stylistically identical to the lid from Lot B2-A-7 and to the lid from Cache B-1, in the center of the plaza (Figure 8). Found within the vessel were an obsidian biface (with no discernable wear; Figure 9), one un-worked greenstone fragment, 20 shell fragments, one fragment of coral, and two ceramic fragments, unrelated to the vessel or lid. Beneath the ceramic vessel, and part of the lot, were fragments of mother-of-pearl and eight ceramic fragments, unrelated to vessel or lid.

Finally, Lot B2-A-7 consisted of one fragmented ceramic vessel with an incised lid, with the same decoration as the vessel in Lot B2-A-6. Within the vessel were found two possible stalactite fragments, nine un-worked greenstone fragments, 31 shell and shell fragments, and five ceramic fragments not related to the vessel or lid.

### ***Conservation and Restoration***

Conservation and restoration of the cache focused primarily on the pair of ceramic vessels-and-lids, since the other artifacts in the cache were judged to be in good preservation condition. Moreover, the ceramic lid fragments, once cleaned, displayed an incised pattern, which was of the same style as the pattern seen on one of the vessel lids

of Cache B-1, excavated in 2007. Because Lots B2-A-6 and -7 were excavated in the controlled conditions of the lab, there was the greater possibility of having the entire vessels and lids more accurately reconstructed.

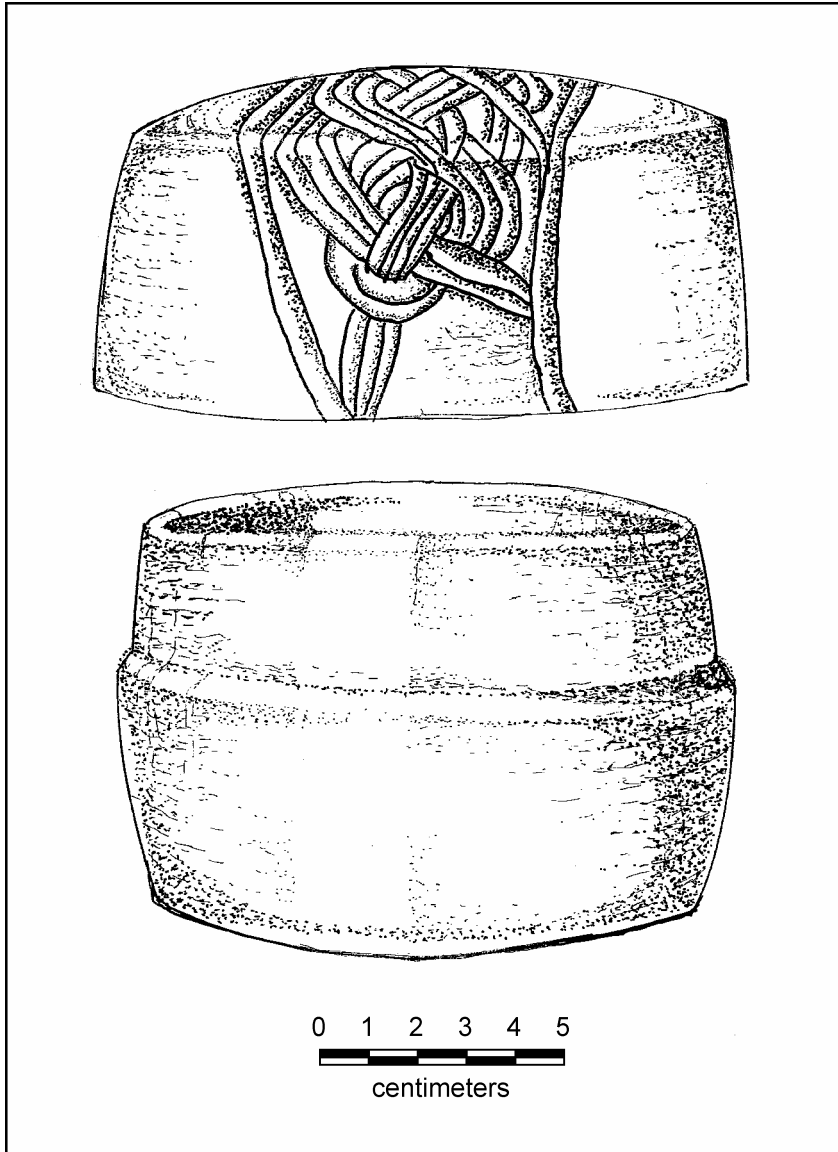


Figure 8. Jar and lid pair from Lot B2-A-6. Illustration by Sandra Shuster.

**Analysis**

Cache B-2 was located under the plaza floor, directly on the centerline of the stairs of Structure 22. There is clearly some significance to the distribution of and patterning of artifacts within it. For example, in the northernmost part of the cache, obsidian debitage and shells were found in abundance, with the obsidian and chert eccentric at the southern edge of this cluster. South of the eccentrics, 12 greenstone beads and an incised shell pendant were encountered; these may represent beads on a necklace. The long bone fragment was placed immediately east of the greenstone arrangement. The southern portion of the cache contained Lots B2-A-6 and 7, the latter placed southeast of the former. Although these two ceramic vessel pairs were similar, their contents were different.



Figure 9. Eccentrics and obsidian biface from Cache B-2. The biface was found inside one of the jar-and-lid ceramic pairs.



Perhaps the most telling aspect of Cache B-2 is its probably contextual association with and clear stylistic relationship to Cache B-1, located in the center of Plaza B, under an altar stone. The ceramics present in both caches show uncanny similarities, in terms of ceramic form, fabric, and perhaps most importantly, design and decoration. The mat motif on the lids of both ceramics in Cache B-2 is also present on the lid of one of the ceramics in Cache B-1. Stylistic analysis of the design shows such similarity that a suggestion may be put forward that they were manufactured contemporaneously, possibly in the same workshop, if not by the same craftsman. This allows for the direct association of the placement of Caches B-1 and B-2, construction of the plaza floor, placement of the altar stone, and inauguration of the initial construction phase of Structure 22 with the same event.

### ***Dating the Caches***

Charcoal was collected from both Cache B-1 and B-2, but most of the samples were too small to run for a radiocarbon date. Three were submitted to Beta Analytic, Inc.; two from Cache B-1, collected in 2007, and one from Cache B-2, collected in 2008. The results of the analysis are presented in Table 5. Two of the samples returned 2-sigma calibrated dates that fall within the Late-to-Terminal Classic period. The third sample returned an Early Classic date, however that sample is considered unreliable. Beta Analytic reported the sample yielded 3.0 mg of a mixture of very sooty charcoal and other charred or dark colored organics. The amount of charred material was too small to separate and date independently. It possible to date the combined fractions, but the sample was too small for a  $^{13}\text{C}/^{12}\text{C}$  ratio measurement. The laboratory measured a ratio including both natural and laboratory effects during the  $^{14}\text{C}$  detection to derive a conventional radiocarbon age, suitable for applicable calendar calibration. In light, however, of the two Late-to-Terminal Classic dates, which support Lauren Sullivan's ceramic analysis of the vessels, we are inclined to treat the Early Classic date as suspect.

Table 5. Results of Radiocarbon Sample Analysis from Caches B-1 and B-2

Cache	Beta	Lot	Measured Radiocarbon Age	$^{13}\text{C}/^{12}\text{C}$ Ratio	Conventional Radiocarbon Age	2 Sigma Calibration
B-1	251676	B1-K-4	1160 ± 40 BP	-26.6 ‰	1130 ± 40 BP	Cal AD 780 to 1000
B-1	251677	B1-K-5	NA	NA	1620 ± 40 BP	Cal AD 350 to 540
B-2	251675	B2-B-5	1240 ± 40 BP	-27.1 ‰	1210 ± 40 BP	Cal AD 690 to 900

### **CONCLUSIONS FROM THE TWO SEASONS OF EXCAVATIONS AT PLAZA B**

Our two seasons of research at Plaza B have clarified several of our initial research questions and provided new directions for research. Importantly, some of our preconceptions about the chronology of the plaza have been proven false. It is now clear that Structures 22, 23, and 27 had all been completed and even remodeled during the Late

Classic, dispelling the hypothesis that the plaza was unfinished at the time the site was abandoned. Structure 22's stair was modified at least once during the Late Classic, and the rooms exposed in 2008 show clear evidence of architectural modifications (see Zaro, this volume). The building appears to have been used during the Late Classic, was abandoned, and subsequently collapsed.

The construction sequence at Structure 23 is surprisingly more complicated. As Padilla and Smith (this volume) report, the Late Classic Structure 23 has evidence of an earlier construction phase—part of a wall was exposed beneath the floor in a room—that is not yet dated. Furthermore, the rooms on the summit of Structure 23 appear to have been at least partially filled on purpose and the new summit of the mound perhaps occupied for a brief period of time. The southern half of the structure appears to be covered in large cobble/small boulder fill, which looks like an expansion project, which was never completed. The fill is similar to that encountered on 2007 excavations on Structure 21. Thus, it appears as if Structure 23 has at least two construction phases, which were completed, an uncompleted expansion of the building, and an apparent short-term occupation on top of the building, which may have taken place after the expansion project was abandoned.

Perhaps most interesting is Structure 27, also reported on by Padilla and Smith (this volume). The stair of that building has been partially excavated, demonstrating two Late Classic construction phases covering a buried Late Preclassic building. The exposed portion of the Late Preclassic structure includes a well-preserved plaster floor and two rounded plaster steps.

Based on the facts that Structure 27 is covering a buried Late Preclassic structure and that all other buildings were apparently finished, we believe the chances are high that Structure 21 was also finished. A hypothesis we will be testing in 2009 is that the structure was finished and was perhaps in the process of being renovated when it was abandoned—the small boulder fill on the southern side of Structure 23 is certainly similar to the material encountered during initial excavations of Structure 21 in 2007. Those excavations were discontinued after approximately 1 m had been removed in a 2 x 10 m trench on the western face of the mound for safety reasons.

The two stylistically related caches suggest that a coherent plan of ritual deposits is incorporated into the Late Classic plaza construction. This hypothesis will be explored further in future seasons.

## REFERENCES CITED

Ashmore, Wendy

- 1991 Site-planning Principles and Concepts of Directionality among the Ancient Maya. *Latin American Antiquity* 2:199–226.

Ashmore, Wendy, and Jeremy A. Sabloff

2002 Spatial Orders in Maya Civic Plans. *Latin American Antiquity* 13:201–216.

Chase, Diane Z., and Arlen F. Chase

1998 The Architectural Context of Caches, Burials, and Other Ritual Activities for the Classic Period Maya (as Reflected at Caracol, Belize). In *Function and Meaning in Classic Maya Architecture*, edited by Stephen D. Houston, pp. 299–332. Dumbarton Oaks, Washington, D.C.

Houk, Brett A.

2007 Summary Report of Archaeological Investigations at Plaza B, La Milpa, Belize (2007). In *Programme for Belize Archaeological Project: Summary Report of the 2007 Investigations*, edited by Fred Valdez, Jr., pp. 62–73. Report submitted to the Institute of Archaeology, National Institute of Culture and History, Belmopan, Belize. Mesoamerican Archaeological Research Laboratory, The University of Texas at Austin.

Houk, Brett A., Debora Trein, and James E. Barrera

2008 *Royalty, Ritual, and Rubbish: Preliminary Analysis of Two Late Classic Caches at La Milpa's Plaza B*. Poster presented at the 73rd Annual Meeting of the Society for American Archaeology, Vancouver, Canada.



# EXCAVATIONS AT LA MILPA, BELIZE: STRUCTURE 22

Gregory Zaro, University of Maine

## INTRODUCTION

The 2008 research objectives of the La Milpa Core Project were to (1) determine the architectural design of individual structures and (2) investigate a possible ritual program of caches that was incorporated into the La Milpa site plan. Horizontal and vertical exposures were also intended to assess the preservation of the archaeological record and to guide future investigations at the site. Excavations at the base and summit areas of Structure 22 were planned to meet each of these larger objectives.

Structure 22 is a range building defining the western edge of Plaza B at La Milpa. It measures approximately 60 m in length, 12 m in width, and 5 m in height, and its southern end joins Structure 23 to define the southwestern corner of Plaza B (see Houk et al., this volume: Figure 1). Surface morphology indicates a number of peaks and troughs along the structure's entire length, likely indicating a number of collapsed rooms. In rare instances, stone alignments are visible on the summit of the structure, pointing to some degree of subsurface architectural integrity.

## ARCHITECTURAL DESIGN AND MODIFICATION AT STRUCTURE 22

Initial investigation into the summit area of Structure 22 began in 2007, which identified the uppermost course of a limestone masonry wall (originally identified in Suboperation B1-U) and a plaster floor surface (originally identified in Suboperation B1-N). Excavations in 2008 continued these preliminary exposures with the completion of Suboperation B1-U, and new Suboperations B2-B, C, D, E, and F (Tables 1 and 2). A single looter's trench identified on the upper, west-facing slope of the northern half of the building was also cleaned and profiled with the intent of obtaining additional architectural information, and particularly the location of the westernmost wall of the summit building. At the summit of the central staircase, excavations exposed a 1.74 m wide doorway opening towards Plaza B, and one additional 1.78 m wide doorway positioned approximately 4.5 m to the south (jamb to jamb), also opening towards Plaza B. Each doorway leads to a separate interior room, which are connected to each other by an interior passage. The discussion here is organized around excavations associated with each of these interior rooms (Figure 1).

Table 1. Structure 22 Operation/Suboperation.

Operation	Subop	Size (m)	Location
B1	U	2 x 3	Top of central staircase, Str. 22
B2	A	1 x 1.5	Base of central staircase, Str. 22
B2	B	2 x 2	Top of Str. 22, adjacent to B1-U
B2	C	2 x 3	Top of Str. 22, adjacent to B2-B
B2	D	1 x 2	Top of Str. 22, adjacent to B2-C
B2	E	1 x 2	Top of Str. 22, adjacent to B1-U
B2	F	1 x 2	Top of Str. 22, adjacent to B2-B

Table 2. Structure 22 Suboperation/Lot Designation.

Operation	Subop	Lot	Definition
B1	U	4	Building collapse (continued from Lot 2, 2007)
B1	U	5	Building collapse, 15cm above plaster floor
B1	U	6	Bench, front face exposed in west wall of subop
B1	U	7	Floor surface with replastering
B2	A	1	Humus
B2	A	2	Building collapse
B2	A	3	Plaster floor (plaza), plus subfloor fill
B2	A	4	Plaster floor with resurfacing, plus construction fill
B2	A	5	Cache matrix surrounding vessels of Cache B2
B2	A	6a	Cache matrix surrounding north vessel
B2	A	6b	Matrix within north vessel (base)
B2	A	6c	Matrix within north vessel (lid)
B2	A	7a	Cache matrix surrounding south vessel
B2	A	7b	Matrix within south vessel
B2	A	8	Clay matrix above bedrock
B2	B	1	Humus
B2	B	2	Limestone wall oriented N/S, first identified in B1-U
B2	B	3	Building collapse
B2	B	4	Bench, same as B1-U-6
B2	B	5	Matrix between bench and B2-B-2
B2	B	6	Matrix near floor surface between Lots 2 and 4
B2	B	7	Plaster floor
B2	C	1	Humus
B2	C	2	Limestone wall oriented N/S, same as B2-B-2
B2	C	3	Building collapse
B2	C	4	Interior limestone wall oriented E/W
B2	C	5	Building collapse north of B2-C-4
B2	C	6	Plaster floor
B2	D	1	Humus
B2	D	2	Limestone wall / door jamb
B2	D	3	Building collapse
B2	E	1	Humus
B2	E	2	Limestone wall / door jamb
B2	E	3	Building collapse
B2	F	1	Humus
B2	F	2	Building collapse
B2	F	3	Plaster floor surface

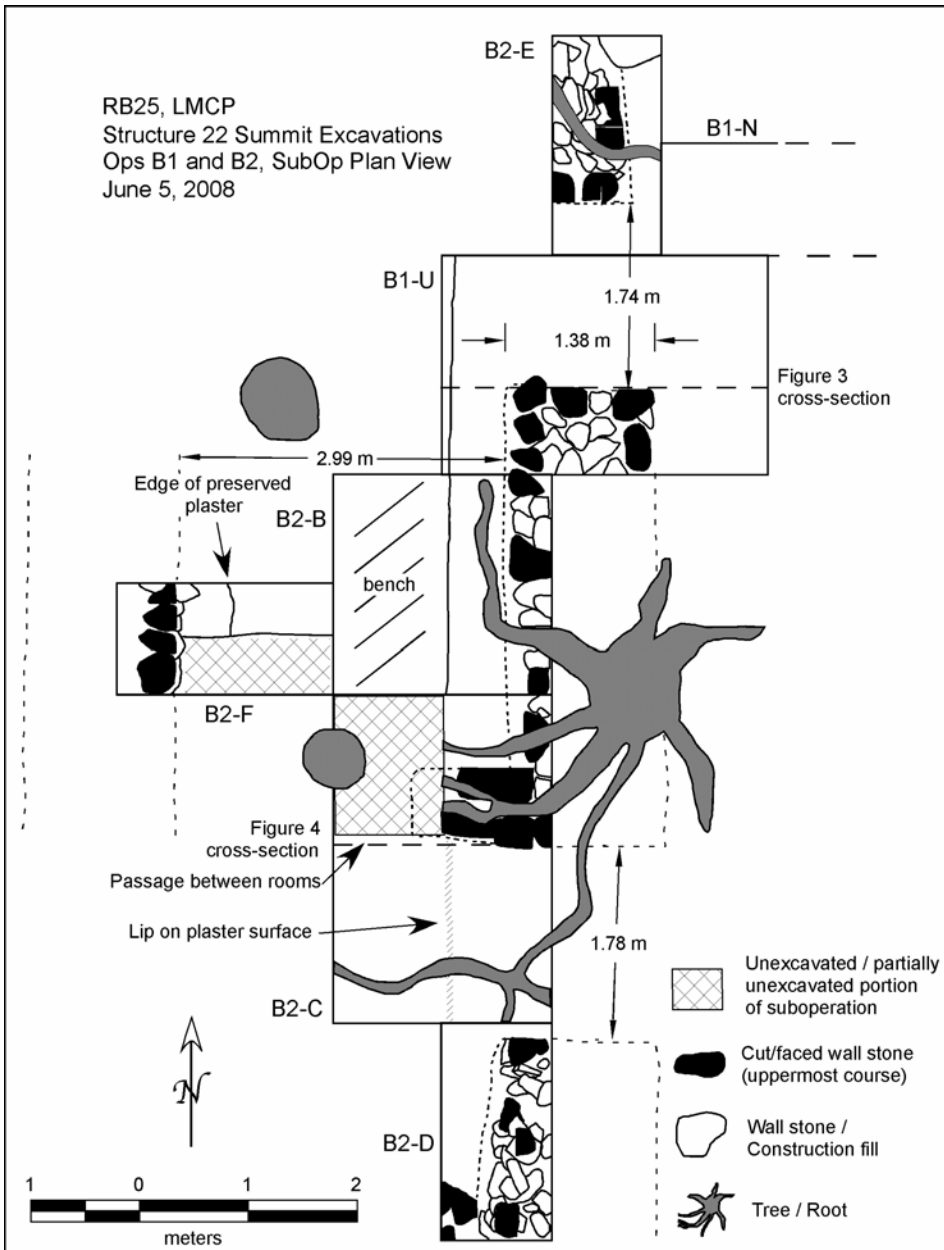


Figure 1. Plan of suboperations on the summit of Structure 22.



**North Room: Suboperations B1-U, B2-B, B2-E, & B2-F**

Suboperation B1-U is a 2 x 3 m unit initially opened in 2007. The unit is oriented east-west and is situated adjacent to a portion of the south wall of Suboperation B1-N (see Figure 1). After removing the humus layer and uppermost levels of building collapse, excavations in 2007 exposed what appeared to be the north end of a thick (1.38 m) wall oriented north-south (Figures 2 and 3). Only the upper two courses of stones were revealed before the termination of the 2007 field season. In 2008, excavations continued the removal of building collapse, changing lots approximately 15 cm above the plaster floor surface identified in Suboperation B1-N to retain vertical control of artifacts collected during excavation. Building collapse consisted of large limestone chunks and blocks jumbled within a marl matrix. Some roots and rootlets are found throughout the material, along with scattered fragments of ceramics and some burned rock. Based on the angle at which several observed limestone blocks were cut, the building was likely constructed with a corbel vaulted roof. Some burning is indicated closer to the floor surface as well, evidenced by a light scatter of burned rocks and a dark grayish coloring on several areas of the plaster floor, particularly towards the central/western portion of the suboperation. Few ceramic and lithic artifacts were recovered from Suboperation B1-U, and none were found in situ or in contact with the plaster floor, suggesting their presence is part of collapse episodes, perhaps originally deposited as debris within wall fill.



Figure 2. Photograph of Suboperation B1-U facing southwest showing outer wall, door jamb, bench, and plaster floor.

The plaster floor exposed in this unit is differentially preserved, with the western portion of the unit exhibiting the greatest preservation. In the eastern half of the suboperation, the latest floor surface is very eroded (and not easily detected), while an earlier floor surface is fairly detectable but poorly preserved (the smooth plaster surface is eroded away, but the hard gravelly subfloor matrix is still intact, with possible small patches of plaster). This indicates at least one resurfacing event, with the latest floor measuring anywhere from 5–10 cm thick. Differential preservation of the plaster floor is not unexpected, given the eastern portion of the unit extends through the doorway and onto the exterior surface of the mound, which would have been more directly exposed to weathering. The face of a bench was also exposed along the western perimeter of Suboperation B1-U, extending to a height of about 50 cm above the latest plaster floor (see Figure 3). Plaster is not well preserved along the front facing of the bench, though the floor lips upward slightly before eroding away. In one small area, smooth plaster is noted on the face of the bench, with some evidence of red paint. However, across much of the face, only limestone blocks are visible. The bench extends both north and south of Suboperation B1-U, and while recognizable, it appears quite deteriorated with a melding of limestone, marl, and building collapse.

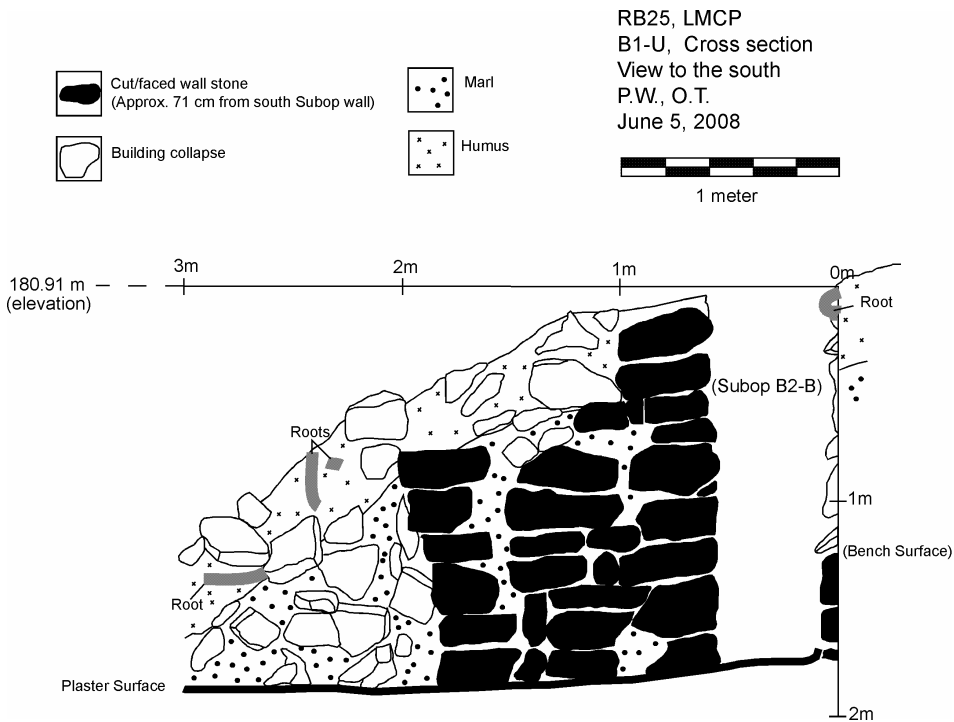


Figure 3. Southern cross-section of Suboperation B1-U.

Suboperation B2-B is a 2 x 2 m unit situated adjacently to the south of Suboperation B1-U (see Figure 1). The unit exposes the interior face of the perimeter wall identified in Suboperation B1-U. Excavations penetrated through the humus layer and building collapse, exposing the room's east wall and bench. Building collapse is composed of a marl matrix mixed with large chunks of limestone—some shaped or cut. Some small fragments of burned rock are scattered throughout the collapse debris, but possibly more so near the surface of the bench (though very small fragments). The bench is a continuation of that originally identified in Suboperation B1-U. It is poorly preserved, with only remnants of plaster remaining in a few areas. Many large stones were exposed immediately on top of the bench and appear part of building collapse. In some cases, stones appear to be projecting slightly into the surface of the bench, though melding of marl, limestone, and plaster make it difficult to discern with certainty. Where plaster is completely eroded, the matrix is a grayish loam/marl mix.

A narrow space about 50 cm wide separates the room's east wall from the face of the bench, where excavations continued to the plaster floor surface extending from Suboperation B1-U. Though likely all building collapse, a distinction was made between material excavated from above and below the level of the bench because of the grayish character of the matrix between the bench and the east wall. Ceramic density increased near the floor surface, and particularly towards the southern end of the lot, but none appear in direct contact with the floor. The reason for the grayish matrix remains unclear, but I hypothesize that it may be a slightly more organic deposit. This space is near the doorway facing Plaza B and may have been in prime position to capture blowing leaves and other debris upon abandonment of the building, but prior to its collapse.

Suboperation B2-E is a 1 x 2 m unit intended to obtain architectural information related to the width of the central doorway facing Plaza B (see Figure 1). It is oriented north-south and located adjacent to the northern and western edges of Suboperations B1-U and B1-N, respectively. Based on surface morphology, its size and orientation was deemed appropriate to expose the opposite doorjamb to that identified in Suboperation B1-U. Excavations penetrated through the humus layer and partially into building collapse to expose the uppermost courses of the doorjamb/wall. Excavations revealed the central doorway facing Plaza B measures 1.74 m wide. Due to time constraints, the suboperation was terminated upon determining the width of the entryway.

Suboperation B2-F is a 1 x 2 m unit intended to locate the western perimeter wall of Structure 22, and consequently determine the width of the summit building (see Figure 1). The unit is oriented east-west and extends from Suboperation B2-B towards the west. Excavations penetrated through the humus layer and partially into building collapse across the entire unit. However, due to time constraints, further excavation into building collapse only persisted along the northern half of the suboperation. Because of the steepness of the structure along its western face and extent of building collapse, architectural preservation was quite poor. However, two features exposed in

Suboperation B2-F help to determine the interior width of the summit building. First, excavations followed the plaster surface of the bench exposed in Suboperation B2-B to its western limit. While the plaster surface terminates about 95 cm from the eastern edge of the suboperation, this may be a factor of poor preservation. The plaster surface erodes away, becoming a matrix of marl and gravel that is characteristic of construction fill. However, a possible stone alignment or potential perimeter wall was exposed about 1.4 m from the eastern edge of the suboperation. It is unclear whether this alignment is a product of archaeological excavation or building construction. It is probable, however, that either the stone alignment or edge of the plaster surface represents the interior extent of the summit building. Should this be the case, then the interior width of the room likely measures between 2.5 m and 3.0 m (see Figure 1).

### **South Room: Suboperations B2-C & B2-D**

Suboperation B2-C is a 2 x 3 m unit oriented north-south and situated adjacent to the south edge of Suboperation B2-B (see Figure 1). The intent of this unit was to further expose the interior face of the eastern perimeter wall of the summit building and reveal any internal architectural features. Large trees precluded excavation of the northwestern quarter of the unit and partially hindered excavations in the northeastern quadrant.

Excavations in this suboperation exposed an interior wall extending 1.10 m westward from the interior face of the perimeter wall (at the doorjamb). The wall measures approximately 60 cm thick and was constructed of cut limestone blocks. The wall does not extend across the entire room but does provide partial separation from the north room. Consequently, an interior doorway permits passage between the two rooms (Figure 4).

Excavations through the humus layer and building collapse also exposed a plaster floor across the entire area of the unit south of the interior wall. The plaster surface is located at the same elevation as the bench identified in the north room, indicating the bench extended along the western half of the structure through both rooms. Excavation of Suboperation B2-C also suggests some architectural modification within the building. First, a small lip (variably 1–3 cm high) was exposed across the plaster floor and in alignment with the face of the bench exposed in Suboperation B2-B. It appears that the bench originally continued into the south room, but was subsequently renovated to include raising the floor surface in the south room to the level of the bench. It is unclear how far into the doorway this renovation occurred, since the raised surface continues out of the suboperation to the east. Furthermore, While limestone blocks of the eastern perimeter wall appear to extend beneath the renovated floor surface, basal stones of the interior wall do not, suggesting that the interior wall was constructed either contemporaneously with or subsequently to this renovation (see Figure 3).

Suboperation B2-D is a 1 x 2 m unit oriented north-south, and it is located adjacent to the southern edge of Suboperation B2-C (see Figure 1). The unit was intended to define the

opposite doorjamb of the southern doorway facing Plaza B. Excavations penetrated the humus layer and partially into building collapse to expose the upper courses of the interior face of the wall and jamb. Due to time constraints, the suboperation was terminated during excavation of building collapse. Exposure of the doorjamb/wall, however, revealed the width of the doorway to be 1.78 meters.

### **Looters' Trench**

A single looters' trench was identified along the northern half of the upper, west-facing slope of Structure 22 (see Houk et al., this volume: Figure 1). The south wall of the trench was cleaned and profiled in attempt to gain additional architectural information about the building, and principally the location of the west wall of the summit building. The profile identifies apparent building collapse and several shaped/cut limestone blocks in vertical alignment (Figure 5). The general position and shape of these stones render it unlikely that they are simply part of building collapse. While no corresponding stones were identified on the opposite wall (though no extensive cleaning was performed), these stones are in the projected alignment with the plaster edge or stone alignment identified in Suboperation B2-F (see above). This information generally corroborates our suggestion that the maximum interior width of the summit architecture was between 2.5 m and 3.0 m.

### **CHRONOLOGY**

Occupational chronology is assessed through both relative and absolute dating measures. Ceramicist Dr. Lauren Sullivan examined ceramics recovered from Structure 22 excavations. While not plentiful, all ceramics from summit excavations are associated with Tepeu 2-3 (A.D. 700–850), though all come from the context of building collapse. One absolute date was obtained from charred material in Cache B-2, centrally located at the base of Structure 22 below the earliest plaza surface (see Houk et al., this volume, for details regarding Cache B-2). The material returned a measured radiocarbon age of 1240 ± 40 radiocarbon years BP (Beta-251675), with a 2-sigma age range of A.D. 690–900. Within the summit architecture, an attempt was made to radiocarbon date a soil matrix recovered near the plaster floor surface of Suboperation B2-B, but organic material in the sample was not sufficient to retrieve a date.

### **SUMMARY**

Excavations near the summit of Structure 22 exposed a number of architectural features that include multiple exterior doorways, benches, and architectural renovations. When coupled with surface morphology, the spacing of doorways and their associated rooms suggests there are likely a series of five to seven primary rooms and/or entryways across the entire length of the mound. Steepness of the west side of the structure (and the presence of a possible reservoir on the west side) may indicate that the entire building faced plaza B.

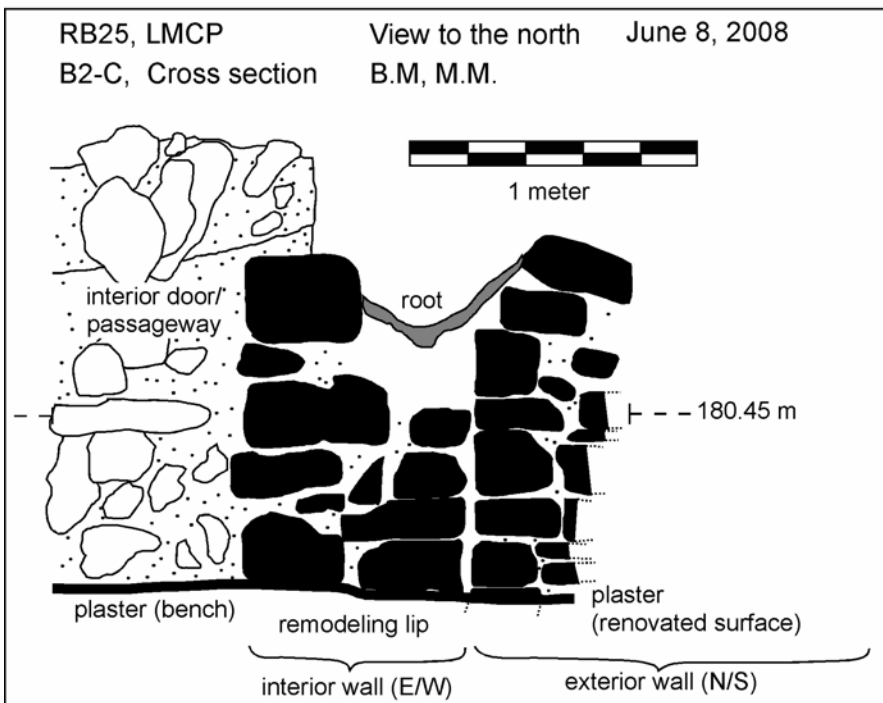


Figure 4. Photograph and northern cross-section of Suboperation B2-C. (See Figure 3 for key).

RB25, LMCP  
Plaza B Looter's Trench, Structure 22  
South Wall Profile  
Orientation of Looter's Trench = 94 degrees E of N  
June 5, 2008  
P.W., K.B.

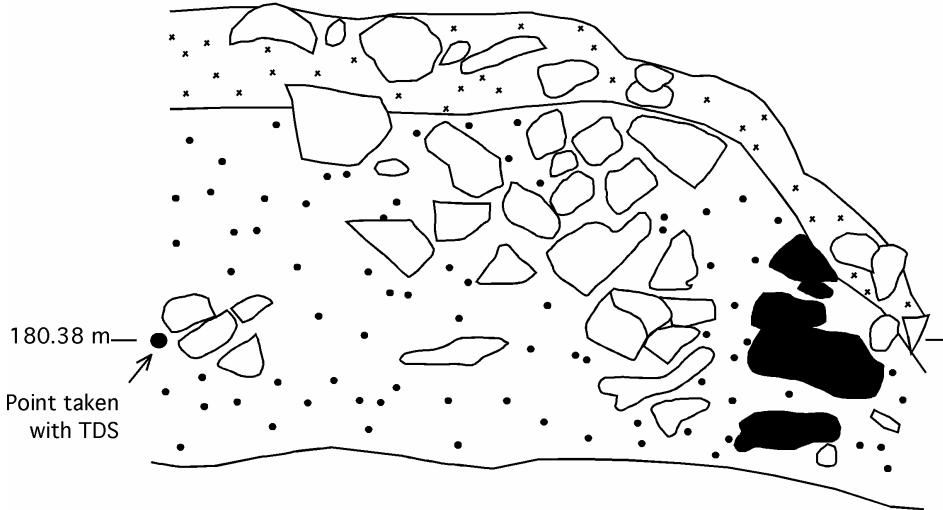


Figure 5. Southern profile of looter's trench on Structure 22. (See Figure 3 for key).

Exterior walls of the structure are robust, evidenced by the 1.38 m thick wall facing Plaza B and constructed of cut/shaped limestone blocks with an interior cobble fill. Due to time constraints and extensive building collapse, the western exterior wall of the structure could not be definitively determined, though the continuation of a plaster surface along with several potential wall segments identified in both excavation and the looter's trench profile tentatively suggest the interior width of the structure measured 2.5–3.0 m wide. In addition, cut stones consistent with vaulted roof stones were identified in collapse debris, suggesting the building was constructed with a corbel vaulted roof. The probable width of the building would have required thick, sturdy walls to support the weight of a vaulted roof.

## OVERVIEW OF THE 2008 EXCAVATIONS AT STRUCTURES 23 AND 27, PLAZA B, LA MILPA, BELIZE

Antonio E. Padilla, Texas Tech University  
Shannon M. Smith, Texas Tech University

During the summer of 2008, students of the Texas Tech Field School in Maya Archaeology conducted excavations at various locations within Plazas B and D. The following is a description of the excavations conducted at Structure 23 in Plaza B, and Structure 27 in Plaza D.

### STRUCTURE 23

Structure 23 is a range building located along the southern edge of Plaza B, oriented slightly off a true east-west axis at about  $285^{\circ}$ , and measures 45 m long and 5 m high. At its western end, Structure 23 joins Structure 22 to enclose the southwestern corner of Plaza B. As mapped by Boston University, Structures 23 and 20 share a common platform, forming the southern side of the plaza. Structure 23/20 measures approximately 45 m long and up to 5–7 m high. The southern side of Structure 23 faces the Kotanil Courtyard (see Houk et al., this volume: Figure 1).

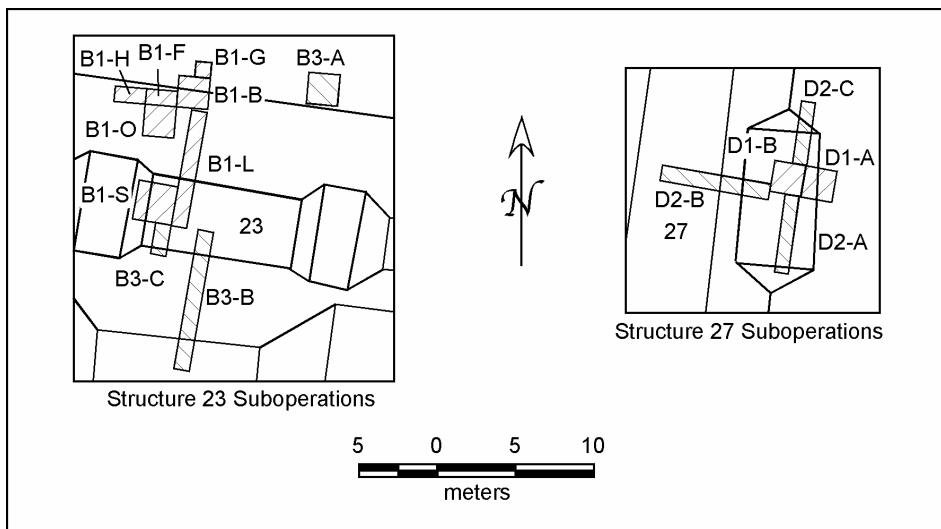


Figure 1. Arrangement of excavation units on Structures 23 and 27.

Original investigation of the structure began during the 2007 field season. Due to previous work conducted at the site, the operation number of new units to be excavated was changed to B3, however the operation number of units previously excavated continued to be recorded with the original operation number, B1. Excavations at



Structure 23 consisted of five Suboperations (B3-A, B3-B, B3-C, B1-L, and B1-S), two of which were excavated during the 2007 field season (B1-L and B1-S). All excavations consisted of both vertical penetration to record construction histories and horizontal exposures to pursue architectural alignments.

A total of five excavation units was placed in various locations along the surface of the structure (Figure 1). Of the five units excavated, a single 2 x 2 m unit, denoted as Suboperation B3-A, was placed on the northern face, at the center of the structure along the base; the remaining four units were placed along the top and the back of the structure. The unit on the back of the structure, Suboperation B3-B, measures 1 x 9 m. Suboperations B1-L, B1-S, and B3-C are located on the top of the structure. Suboperations B1-L and B1-S were originally excavated during the 2007 field season and were re-opened during the 2008 field season.

B3-A, at the base, on the north side of the structure, and Suboperation B3-B, along the back side of the structure, extending from the base of the structure in the Kotanil courtyard to its summit. The research design also proposed the re-opening of two previously excavated units located at the top of the structure (Suboperations B1-L and B1-S), these units were to be excavated to further understand features found during the 2007 field season. In addition to these four units, a new unit.

#### **Suboperations B1-L, B1-S, B3-A, B3-B, and B3-C**

In accordance to the proposed research design, two units were placed along the center line of Structure 23, Suboperation was established (Suboperation B3-C) to further examine a feature seen in Suboperation B1-S. The new unit extended from the southeast corner of Suboperation BS-1 and that unit.

#### ***Suboperation B3-A***

Suboperation B3-A, a 2 x 2 unit, is located at the center of the north face of Structure 23, draped from the base of the structure onto the plaza floor. The purpose of the unit was to look for a cache at the base of the structure in hopes of tying in the caches discovered at the center of Plaza B and at the base of Structure 22 originally discovered during the 2007 field season. Excavations of the unit revealed that the majority of the structure exposed in the unit had been severely damaged by large roots. All the limestone blocks used during the construction of the structure were heavily fractured and poorly preserved. Due to the enormous amount of root activity seen in the unit and the lack of cultural material, excavations were stopped after the humus had been removed.

#### ***Suboperation B3-B***

During the original excavations of Structure 23, a series of units was excavated along the northern face of the structure, exposing the last construction phase. These excavations revealed that Structure 23 was a stepped platform supporting a masonry building on its summit. Due to the exposure of the last phase of construction of the northern face and the

nature of Maya architecture, it was thought that by excavating along the southern face of the structure a similar pattern would be seen. Therefore, exposure of the last phase of construction on the southern face began with the excavation of a 1 x 9 m unit extending from the base of the structure to the summit.

At first glance, prior to excavation, a series of stone alignments was observed, giving the appearance of a series of steps leading to the summit. However, excavations revealed that the surface had been poorly preserved with no intact alignments. Further excavations showed that the humus layer was underlain by a large cobble fill and collapse. It was difficult to discern if this was part of the last phase or that construction of the southern face was incomplete. Despite the large amount of collapse debris mixed with fill, alignments and plaster surfaces were eventually found.

During excavation of the collapse debris/construction fill, a plaster surface resting on a step was found at the base of the structure. Excavations continued to follow the floor, which eventually lead to the backside of the structure. After complete excavation of unit, excavators were able to discern the southern face of the structure (Figure 2).

#### ***Suboperations B1-S, B1-L, and B3-C***

Original excavations of Suboperation B1-L consisted of a 1 x 7.5 m unit that extended up the face of Structure 23 to its summit. Excavations of the subop revealed that much of the northern face of the structure had collapsed outward. Nevertheless, the profile revealed a series of four steps leading to a five-course wall of cut limestone blocks. This five-course wall was identified as being the northern wall of the structure. Excavations south of the five-course (northern) wall revealed a plaster floor at the base of the wall extending 1.5 m to another wall identified as the spine wall. Due to the discovery of these features in Suboperation B1-L, a new unit measuring 2.5 x 2.5 m was extended off the southwestern corner and was recorded as Suboperation B1-S. The purpose of the unit was to determine if the southern (spine wall) continued across the top of the structure and whether the wall divided a room. However, excavations of Suboperation B1-S failed to answer these questions. Excavations of Suboperation B1-S were slow going and consisted of a large amount of collapse debris. In addition to the large amounts of collapse debris a suspected living surface was encountered, therefore excavations of Suboperation B1-S were suspended until the 2008 field season. As outlined in the research design for the 2008 field season, continued excavation of Suboperation B1-S was warranted to further understand what was found during the 2007 field season, therefore Suboperation B1-S was reopened and excavations of the unit continued.

Continued excavation of Suboperation B1-S revealed that a living surface had been encountered. The soil change seen during the 2007 excavations represented a compact dirt floor in which a surface had been created. Stratigraphically, the surface overlays a thin layer of collapse debris/construction fill just above the top of the northern wall found in Suboperation B1-L. Below this thin layer of collapse debris/construction fill, larger

rocks began to appear. It is believed that these larger limestone cobbles represent a construction episode consisting of a filling stage in preparation for the modification of the structure; however, at some point the modification ceased and residents at the site instead created a surface on which they conducted their daily activities.



Figure 2. Photograph of exposed architecture in Suboperation B3-B, facing south.

Further excavations of the construction fill consisted of removing the fill to determine if the floor found at that base of Suboperation B1-L continued. Excavations revealed that the floor continued, and the wall first discovered in Suboperation B1-L during the 2007 field season, extend easterly towards an alignment seen during the original excavations of Suboperation B1-S. The alignment of stones observed during the excavation of Suboperation B1-O consisted of large cut stones that appeared to be the edge of a wall. The alignment was believed to be the edge of the center mound seen on the structure. Our excavations show a sharp edge at that point. This edge corresponds to another edge that is seen at the south end of the unit. The southern edge was believed to be the spine wall, suggesting that we were in a room on top of the structure. Due to the placement of the unit during the 2007 field season the southern wall of the unit did not fully extend south, and did not catch the back side of the spine wall, therefore a new unit, measuring 1 x 2 m, was established. This unit, Suboperation B3-C, was extended off the southeastern corner of the unit and was oriented north-south. Excavations did catch the edge of the spine wall and the back wall of the southern face of the structure. The southern wall corresponded to what is seen at the top of the structure in Suboperation B3-B. We had exposed a narrow room on top of the structure that was divided by a spine wall (Figure 3).



Figure 3. Photograph of exposed northern room in Structure 23, Suboperations B1-L and B1-S, facing east.

After exposing the room and spine wall in Suboperations B3-B, B3-C, and B1-S, excavation of Suboperation B1-L began. During last season's excavations, a plaster floor was exposed. This plaster floor seen in Suboperation B1-S and B3-B shows the floor of the room. However, during the excavation, the plaster floor was accidentally cut through. Due to the lack of ceramics recovered from the excavation of the construction fill of Suboperations B1-L and B1-S, we decided to excavate the rest of the plaster floor found in Suboperation L in order to establish a chronology of construction phases. Excavations were limited to a 1 x 1- m portion of Suboperation L. Excavations revealed that the floor was approximately 18 cm thick and underlain by a powdery matrix of crushed limestone. After removing the limestone powder an alignment of stone was discovered. Further excavation of the unit revealed a wall that appeared to be an earlier construction event (Figure 4). Excavations were terminated once the wall was fully defined.

### ***Summary of Architecture***

Based on what was exposed on the northern face of the structure during the 2007 field season, the southern face of the structure appeared to be very different (Figure 5). The southern side of the building was a tiered platform facing into the Kotanil Courtyard. Excavations encountered a plaster floor that extended 2.75 m north from the Kotanil Courtyard to an eight-course cut limestone platform face measuring 1.6 m tall. The platform was topped by a plaster surface that extended north for 2.6 m, where a three-course cut limestone step was encountered. The top of the step contained a plaster surface that extended 43 cm north to a final step consisting of three courses of cut limestone blocks. The final step of the structure contained a poorly preserved plaster surface that was only observed directly on top of the limestone step. It is believed that this final step led to a doorway of a room at the top of the structure. Evidence of this was seen in the profile of the excavation unit, a seven-course wall was observed directly above a plaster floor with a depth that corresponds to that of the plaster surface of the step.

The final phase of construction is not well understood, and may not have been completed. On the southern side of the building, the tiered platform was covered in large, irregular limestone boulders. Occasional lines of stones on the surface of the mound suggested loose alignments, but none were encountered during excavation of the boulder matrix except for one at the very base of the mound. A line of cut stones resting on the plaster floor of the courtyard may mark the limits of a planned, but never completed, construction event.

The summit of the mound was even more difficult to interpret. Just beneath the topsoil, evidence of an occupation surface marked by a scatter of ceramics and obsidian blades was documented in 2007 and 2008 over much of the excavation area. What is not clear, however, is whether or not the rooms of the building were intentionally filled or if they collapsed prior to the creation of this surface. The portion of the northern room that was excavated contained an extremely compact matrix of marl and small limestone cobbles that is very different from both the fill below the floor and the fill covering the southern

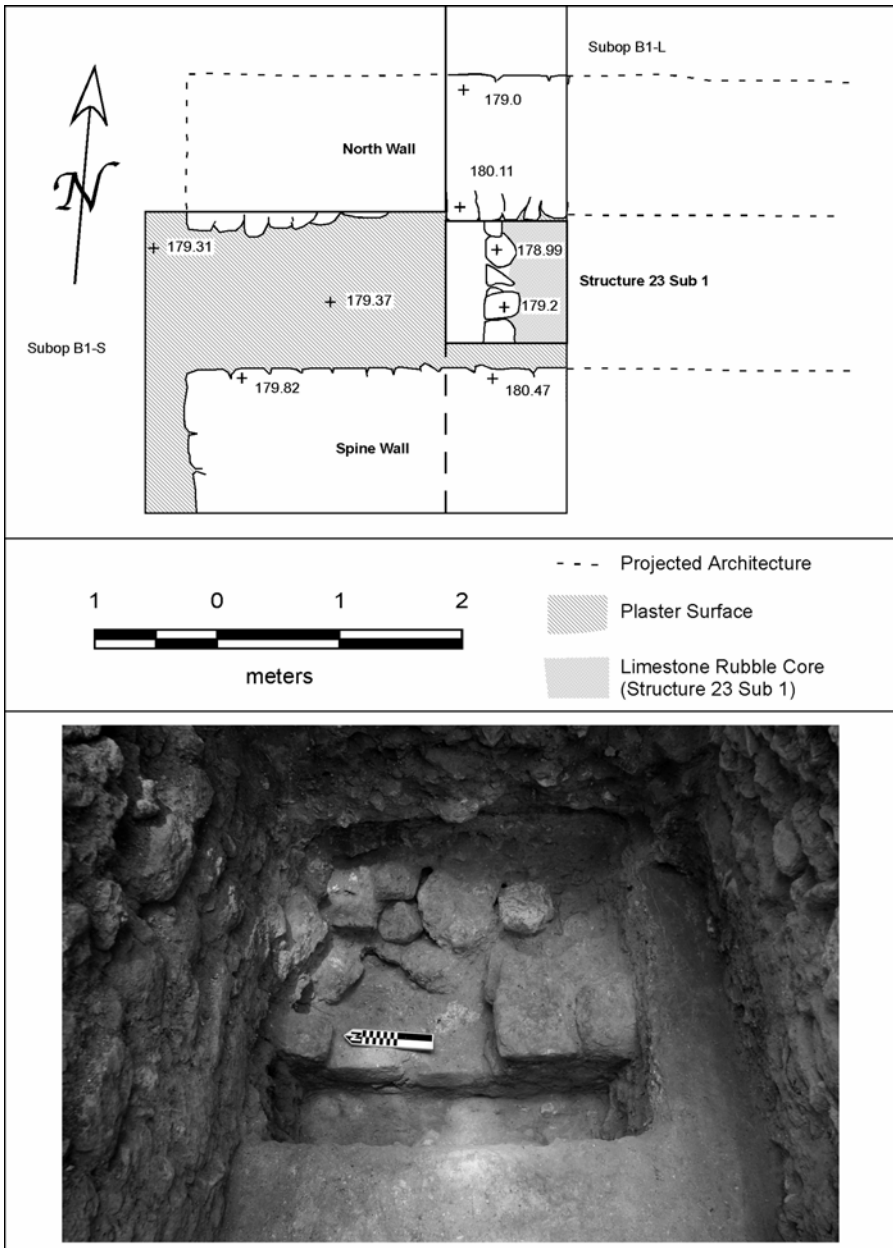


Figure 4. Photograph (facing east) and plan map showing partially exposed wall beneath floor in Suboperation B1-L.

face of the building. It is also different—more compact and lacking large vault stones—from the obvious collapse debris found on Structure 22. West of the room, however, in line with the apparent access from Plaza B to the Kotanil Courtyard, collapse debris, marked by a line of vertically oriented flat stones, was evident in the western profile of the excavation unit. It appears then that some portion of the structure collapsed, while other portions may have been intentionally filled.

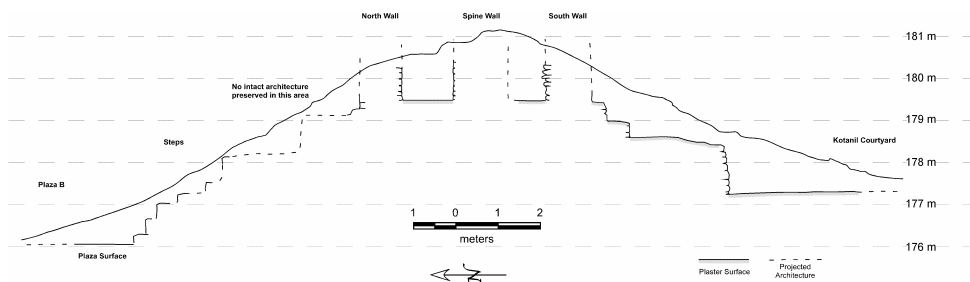


Figure 5. Eastern cross-section of Structure 23 based on excavations in 2007 and 2008 showing Late Classic structure.

### **STRUCTURE 27**

Structure 27 is range structure located in Courtyard D, just southeast of Plaza B. The building measures 20 m in length and is about 4–5 m tall. Structure 27 is oriented north-south and includes a stair located on the central axis of the mound rising from Courtyard D. The northern end of Structure 27 meets the southern side of Structure 23, and the southern end meets the yet-to-be-investigated Structure 28 (See Houk et al., this volume: Figure 1).

Original investigations of Structure 27 occurred during the 2007 field season. All units excavated during the 2008 field season stem from these original units. Continued excavation of the 2007 units also took place. Therefore two operations were used in recording the units, Operations D1 (units opened in 2007 and continued in 2008) and D2 (units opened in 2008).

#### ***Suboperations D2-A and D2-C***

Suboperation D2-A, a 5 x 0.90 m unit, was open adjacent to Suboperations D1-A and D1-B along one of the steps found in the original units in 2007 (see Figure 1). The purpose of this unit was to locate the southern edge of the steps of Structure 27. In doing so, the 5-x-0.9-m unit revealed the extent of the edge of the step to the south. The excavations exposed portions of two steps associated with the last construction phase of the structure. Suboperation D2-C, a 4 x 0.9-m unit, was opened north of Suboperation D1-A to find the northern edge of the stairs. Suboperation D2-B revealed the latest construction phase of the steps, although the northern edge had been severely damaged by the roots of a massive ramón tree. Based

on these two units, we estimate that the stairs to Structure 27 are approximately 10 m wide, at least in association with the last phase of construction.

### ***Suboperation D2-B***

Suboperation B was a 1 x 7 m unit west of Suboperations D1-A and D1-B. The unit extended one meter south of the southwestern corner of Suboperation D1-B and ran west to the summit of the structure. The purpose of this unit was to expose the remaining steps on the stair and investigate the nature of the architecture on top of the platform. Although stone alignments were found along with heavily eroded plaster surfaces, due to time constraints, excavations were not completed in this unit. Therefore, we do not yet have a clear understanding of the architectural form of Structure 27 other than the stairs.

### ***Suboperation D1-B***

In 2007, excavations in Suboperation D1-A encountered a well-preserved plaster floor beneath the final two Late Classic phases of the stair. To further expose the floor and understand its architectural context, backfill was removed from Suboperation D1-A, and Suboperation D1-B was reopened in 2008. During excavations of Suboperation D1-B, 21 cut limestone blocks used for the construction of the Late Classic steps were number and removed. After removing the Late Classic steps and the underlying construction fill, excavators followed the floor back and discovered a rounded plaster step oriented north-south, stretching the width of the 2 m unit. The step is clearly Late Preclassic in style. It is approximately 56 cm high, and has what appeared to be a damaged lip, approximately 10 cm above the floor, at the base of the step (Figure 6). The floor does not extend beneath the plaster step, and, presumably, the floor originally rolled up to the lip at the bottom of the step. The interface between floor and step, however, were either removed intentionally or destroyed as a result of the later expansion of the building. A small portion of a second step was exposed in the western profile of the unit. The first step is 42 cm deep and rolls up onto the second step. After the floor and step had been exposed and documented within the 2 x 2 m unit, Suboperation D1-B was backfilled.

### ***Conclusion***

Excavations during the 2007 and 2008 seasons reveal that Structure 27 is a range building, which consists of at least three phases of construction. The series of steps encountered in 2007 and 2008 represent two phases of construction during the Late/Terminal Classic Period. Evidence of this is predominately based on Tepeu 2-3 type ceramics found in the construction fill associated with these construction phases. Further excavations reveal that the Late/Terminal Classic steps overlay an earlier construction phase that dates to the Late Preclassic Period (Figure 7). This Late Preclassic construction phase is represented by a rounded stucco step that appears to be associated with the well-preserved plaster floor found during the 2007 excavations.



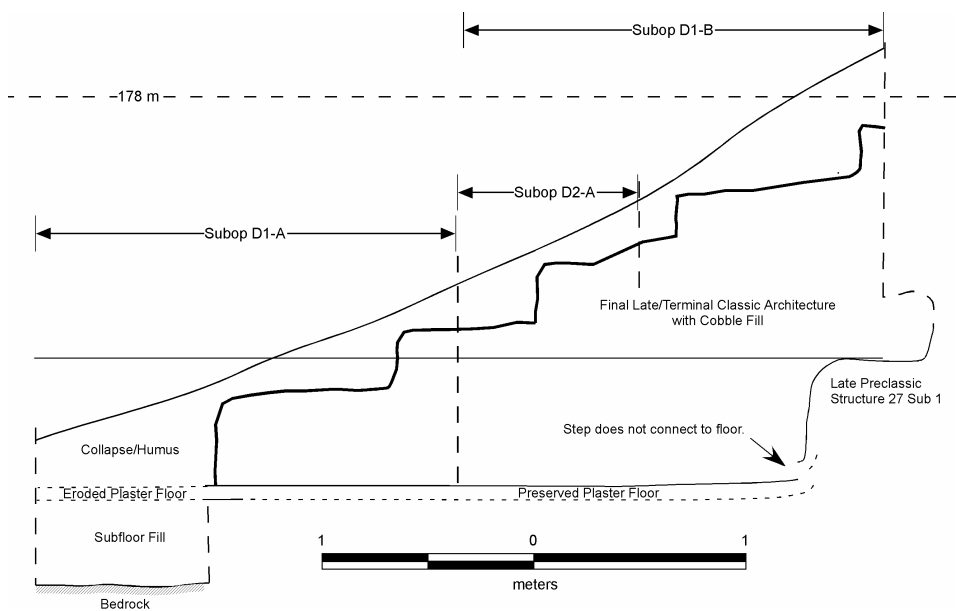


Figure 6. Southern profile of Suboperations D1-A and D1-B.



Figure 7. Photograph of Late Preclassic architecture exposed in Suboperations D1-A and D1-B, facing southwest.

# **PRELIMINARY INVESTIGATIONS EAST AND WEST OF THE ACROPOLIS, LA MILPA, BELIZE: THE 2008 FIELD SEASON**

Brandon S. Lewis, Santa Monica College

## **INTRODUCTION**

The Three Rivers Archaeological Project represents a regional research program aimed at elucidating the nature of Maya political, social, and economic integration. Toward this end, extensive research is being undertaken at the primary center of La Milpa. The project's research goals include 1) examining the role of La Milpa in the overarching context of ancient Maya society, 2) identifying the manner in which systems of economy, ideology, and politics articulate at this center, and 3) investigating the variable roles of residential compounds within the La Milpa polity.

As part of a multi-institutional investigation of the ancient Maya site of La Milpa, Santa Monica College is examining the role of mid- to upper-level residential courtyards within the site core. The 2008 field season saw the continued excavation of Courtyard 149 along with new excavations at Courtyards 151 and 68. Upon completion of our findings, we will conduct a comparative study between these courtyards. Our goal will be to identify the manner in which residential compounds of varying status differ in regard to involvement within the overarching political economy.

## **COURTYARD 149**

Courtyard 149 is located approximately  $\frac{1}{4}$  kilometer southwest of the site's epicenter. It is situated atop an artificially modified ridge slope approximately five meters in height. The dimensions of the raised slope generally measure 12 meters east/west by 25 meters north/south. This locus appears to include a combination of domestic and religious structures. Formalized platforms were constructed on the northern, eastern, and western flanks to support the residential structures, while a three-meter temple is situated to the south.

This plaza appears to be functionally and socially integrated with two additional courtyards lying immediately to the south. Although little-to-no research has been conducted on the above-mentioned courtyards, a cursory comparison of size, form, and composition indicate that Courtyard 149 likely housed the ranking individuals of this extended grouping. Courtyard 149 is the largest of the three loci, contains the most formalized architecture, exhibits restricted access and tight nucleation, and contains the sole temple structure. When compared to other residential compounds within the site core, this grouping likely represents a mid-level elite lineage.

## **2008 EXCAVATION OF COURTYARD 149**

### Northeastern Structure

Although limited excavation was conducted during the 2007 field season, an interesting and somewhat amorphous pattern of surface alignments were identified. The irregularity of this pattern combined with our need to ascertain structure function necessitated continued examination. Consequently, our goals for the 2008 field season were 1) to define and interpret the variable surface features exposed during the previous field season, 2) to identify structure function, 3) to ascertain whether multi-construction phases exist, and 3) to examine the nature of structure/plaza articulation.

Intensive excavation of this locus shed light on many of the above-mentioned issues. A combination of horizontal and vertical excavation strategies were able to identify structure function and dimension. Both architectural layout and artifact inventory suggested a residential function. Although the exact location of the rear (east) wall was difficult to determine, lateral clearance indicated that the most recent plaster floor extended at least three meters east to west. The north/south dimension is estimated to be slightly greater than three meters in extent. Subsequent excavation identified an earlier, exquisitely preserved, specular hematite floor at a depth of over two meters. The southern profile indicated that this floor lipped up approximately 30 centimeters to an elevated surface or bench. In addition, architectural data reflected multiple building phases and structural modifications.

Examination of the surface alignments immediately to the north appeared to suggest a retaining wall that extended from the northeastern structure to the platform supporting the northern building.

### Southeastern Structure

While our 2007 efforts were able to expose a section of the western wall (i.e., that portion facing the plaza), the actual dimensions of the inner room remained unknown. Consequently, we focused our attention on extending the previous year's unit north in hopes of identifying the northern boundary of the structure.

Although the northern wall was not located, the termination of the western wall mentioned above appears to indicate a formal entrance way. Upon inspection of the entire eastern alignment, it is possible that this entrance was one of three that would have extended along the north/south axis. Multiple cut-stone entrances provide further evidence of the elevated status of these occupants. In addition, nearly a dozen bi-chrome plaster fragments were recovered in the sub-floor fill. These appear to represent wall fragments and indicate that the interior surfaces were painted with a variety of color schemes (e.g., orange with yellow and red with pink).

#### Comment on Courtyard 149

Preliminary archaeological data from the 2007 field season seemed to suggest that Courtyard 149 grew quite rapidly. This interpretation was based, in part, on the single-phased construction of the temple structure located to the south. The multiple building phases of the residential structures, as identified during the 2008 project, appear to indicate a more active and potentially longer period of occupation. In light of this information, it is proposed that the associated temple may represent a single construction effort initiated toward the end of the courtyard's developmental trajectory.

#### **COURTYARDS 151 AND 68**

Courtyards 151 and 68 lie approximately 1/4 kilometer to the north/northwest of Courtyard 149. Initial investigation of this extended grouping was conducted under the directorship of Dr. Norman Hammond and Dr. Gair Tourtellot in the mid-1990s. This location consists of at least two connected, formalized courtyards with ancillary structures to the south. Prior examination appears to have focused on the larger of the two courtyards which includes an elevated C-shaped grouping. Hammond proposes that the subterranean chamber located at the rear of the C-shaped structure would have represented a royal throne. This, along with the discovery of a carved monument, argues for upper-level elite status.

While Hammond's et al. excavations appear to have centered on the archaeological markers of political power, our efforts were directed toward identifying site chronology and recovering associated midden. Toward this end, a total of eight units were placed within courtyard surfaces and behind associated structures. (In addition, an apparent looter's trench located in Courtyard 68 was mapped and photographed.)

#### Courtyard 151 (the larger of the two)

Only two excavation units were conducted in Courtyard 151. A 1 x 2 meter test pit was placed within the plaza (approximately five meters from the carved monument) to identify duration of occupation and any evidence of surface re-plastering. While nearly one meter of rich loam was encountered, no indication of an earlier plaza floor was found. The consistent recovery of artifacts throughout the unit, albeit in low quantity, suggests a more extended occupation of this courtyard.

The remaining excavation unit was located behind the northernmost structure of the western alignment. This unit produced large quantities of household-related goods along with small numbers of obsidian blades. Of note is the open flat terrain to the west that may have served as a formal gathering place.

#### Courtyard 68 (the smaller one)

A total of six excavation units were situated throughout Courtyard 68. Two units were placed atop the plaza surface, while four units were located to the south of the southern alignment (see below). The plaza units were located in the courtyard center and in the

southwest corner. Upon reaching bedrock, both units provided possible evidence of bedrock modification. The depth and general orientation of these depressions suggests the possibility of drainage function. Consistent with this interpretation is the fact that the terrain gently slopes in a southwesterly direction.

Approximately 30 meters to the south of Courtyard 68 lie a series of surface features that appear to represent both quarrying and drainage activities. A total of two units were situated herein to clarify the function of this locality. Both units generated considerable cultural remains. The 1x1 meter unit located down slope and to the west appears to have cross-sectioned a chultun. An arytoid shaped, bedrock cavity produced an extremely high quantity of artifacts. Among those items recovered were ceramic fragments, chert flakes, obsidian, and a granite mano. These units confirmed that this open space was indeed used and critical to the functioning of the courtyard residents. Although these two units did not identify evidence of water management features, the apparent cut bedrock outcrops and depressed alignments suggest that such activity.

Finally, two midden units were placed directly behind the southern courtyard structure. Although soil accumulation was minimal in comparison to Courtyard 68 (bedrock was reached within 30-40 centimeters), artifact frequency was noticeably higher. Significant quantities of chert, ceramics, and obsidian attest to household related activities. It is assumed that these remains were in direct association with the adjacent structure. Such data suggest a much more intensive, yet shorter period of occupation for this courtyard.

## THE 2008 FIELD SEASON AT GROUP A OF THE MEDICINAL TRAIL SITE, NORTHWESTERN BELIZE

David M. Hyde, The University of Texas at Austin

The Medicinal Trail Site is located in the La Lucha Uplands east of the major site of La Milpa on the Rio Bravo Conservation and Management Area which is owned and operated by the Programme for Belize (Figure 1). The goals for 2008 season at the Medicinal Trail Site's Group A were focused on Structures A-Sub-2, a small T-shaped Late Preclassic platform, and A-4, the largest structure at Group A and believed to be a temple/shrine.

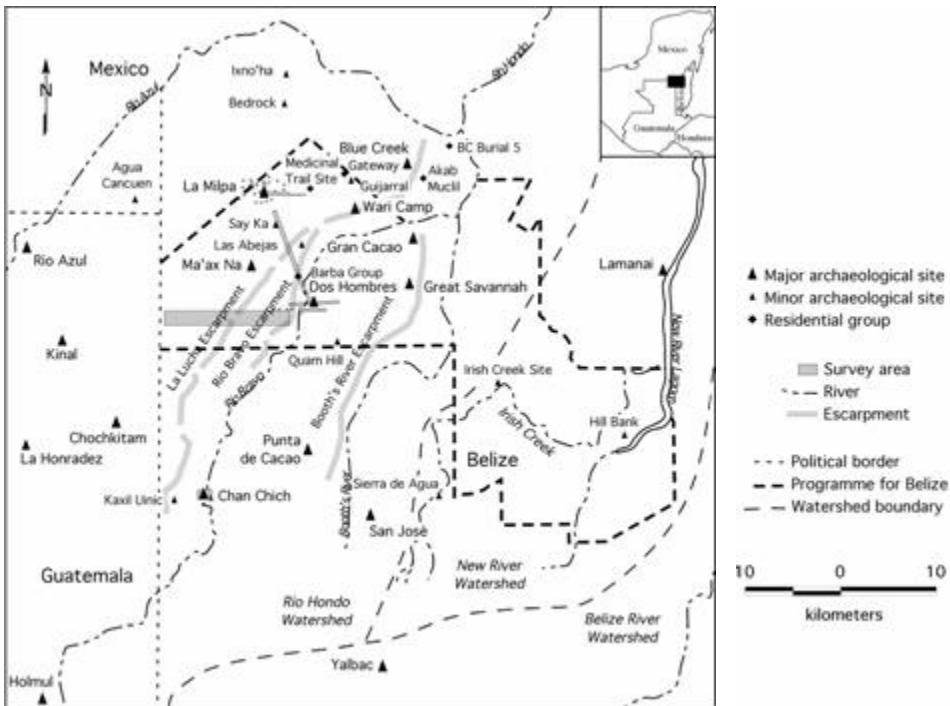


Figure 1. Map of the Three Rivers Region. (Courtesy of the PfbAP).

The Medicinal Trail Site is a dispersed hinterland community of a few formal courtyard groups, numerous informal clusters of mounds and multiple landscape modifications such as terraces, depressions, and linear features. Extensive survey and excavation data from the eastern periphery of La Milpa indicate considerable variability in settlement size and occupation history throughout the community (Everson 2003; Farnand 2002; Ferries

2002; Hughbanks 2005; Hyde and Valdez 2007; Jespersen-Tovar 1996; Lewis 1995; Muñoz 1997; Robichaux 2007; Weiss-Krejci 2008).

Group A is the largest formal courtyard group so far identified within the community. It is situated on top of a ridge and consists of six mounds distributed around three contiguous courtyards aligned on a north-south axis and one additional mound to the north, and is flanked by two depressions each on the east and west sides (Figure 2).

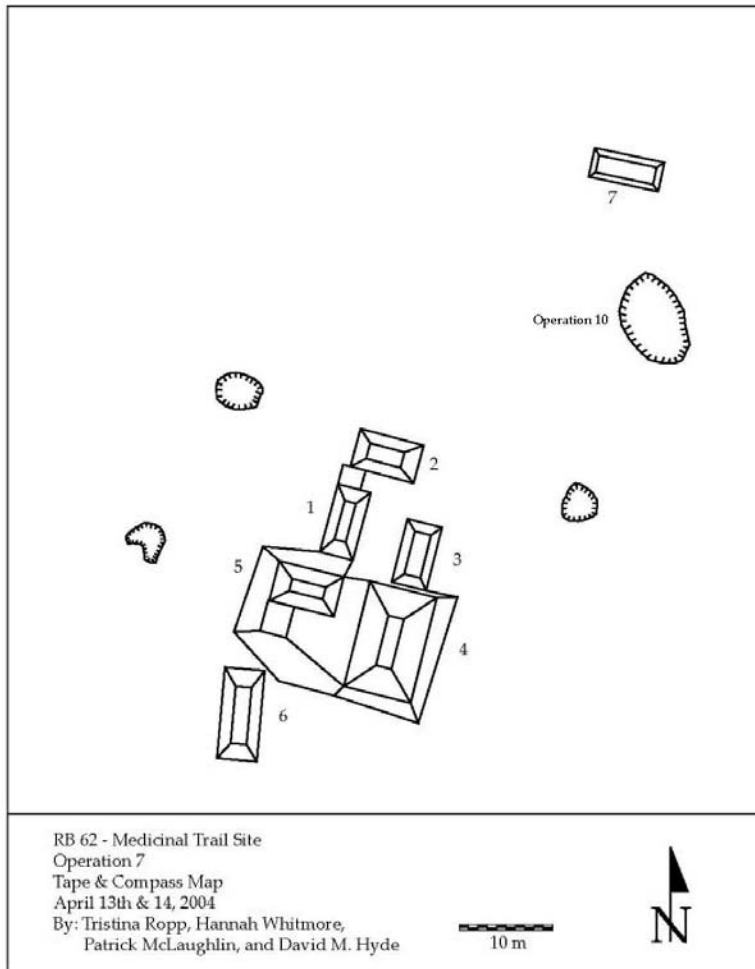


Figure 2. Map of Group A of the Medicinal Trail Site.

### **STRUCTURE A-SUB-2**

Structure A-Sub-2 is located in the center of the Northern Courtyard of Group A and was first uncovered in the 2004 season (Figure 3). It is a Late Preclassic subsurface platform, believed to have been built in at least two phases. The eastern and western halves were constructed differently and the platform is approximately 30 cm longer north-south on the eastern half, giving the platform a “T-Shape.” The stones for the western half consist of cut limestone blocks on average 15 x 10 x 10 cm. The eastern half of the feature consists of stones that are considerably larger in size, on average 25 x 15 x 15 cm. Due to this it is believed to have been constructed first as a rectangular, represented by the western half, and then at a later date the eastern half was added to it.



Figure 3. Photo of A-Sub-2

Associated with A-Sub-2 are a ceremonial structure and numerous features and special deposits (Figure 4). A ceremonial round structure (A-Sub-1) is located 50 cm to the north in which was uncovered a burial (Burial 1) placed on the bedrock with at least two associated ceramic vessels (Grazioso Sierra 2007). To the east of A-Sub-2 there was a flexed burial (Burial 2) in which the skull of the individual was placed between two ceramic vessels (Wren and Cavazos 2008). To the west of A-Sub-2, off the southwest corner, were three lip-to-lip caches (Caches 2-4), and southwest of these was another burial (Burial 3) (Cavazos and Wren 2008; Hyde and Atwood 2007). The entire feature is resting on a plaster floor and in some places the plaster floor rolls up partially over the base of A-Sub-2, where remnants of red pigment were preserved.



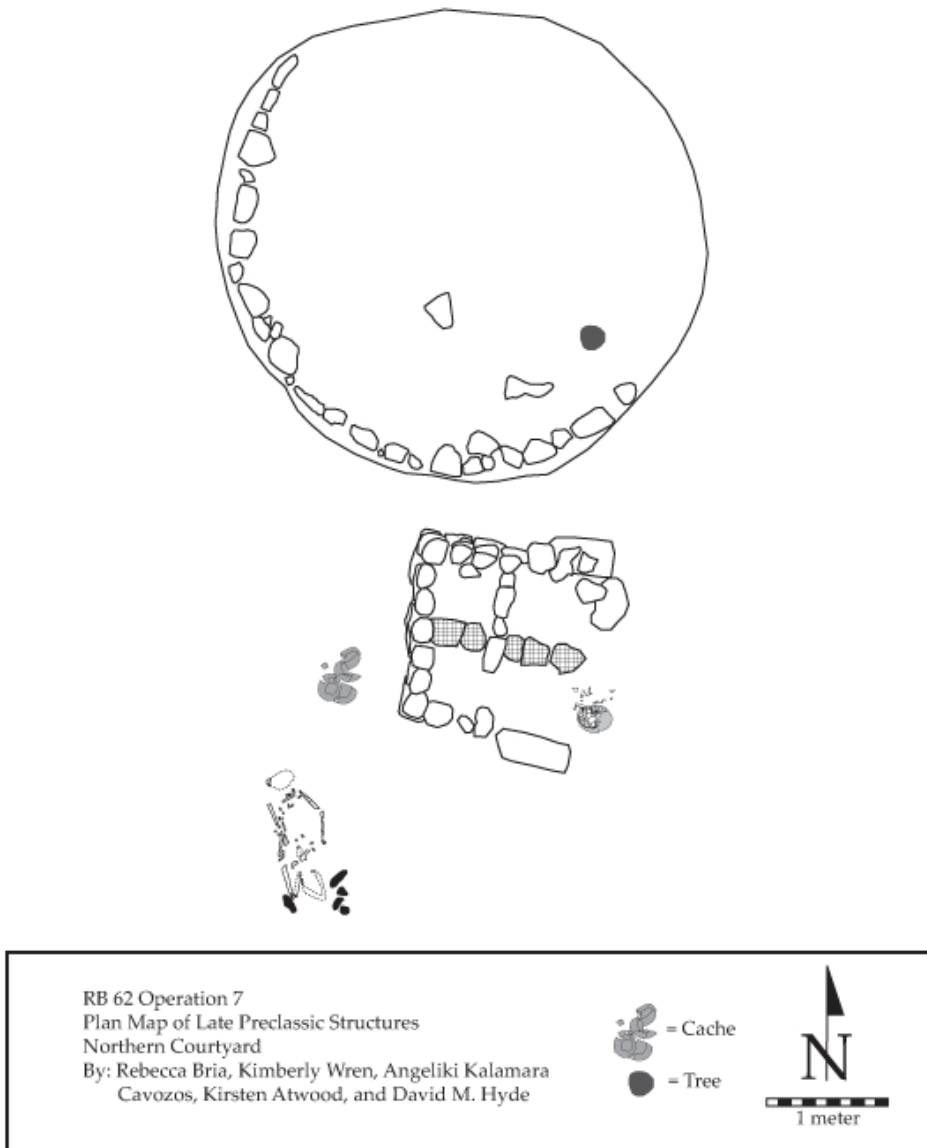


Figure 4. Structure A-Sub-4 with associated burials and caches.

All of these features had been covered over and sealed in the Late Preclassic. Later in the Late Preclassic, two intrusions were made into this floor, inside each of which was placed a cache. Cache 1, a set of nested vessels, was placed over the northwest corner of A-Sub-2. The other cache, Cache 5, consisted of two vessels placed lip-to-lip, and was placed at

the center point of the southern edge of the platform, at the “T.” If the western half was constructed first, this would correspond with southeast corner of that platform.

The 2008 goals for Structure A-Sub-2 were focused on excavation of the inside of this platform for two primary purposes:

1. To reconstruct its construction sequence to confirm if it had been built in two phases.
2. Based on the association of the ceremonial round structure, the two burials, and the multiple caches, determine if there were any intentionally placed deposits inside the platform.

Investigations in the 2004 season uncovered A-Sub-2 and part of the eastern half of the platform was excavated at that time (Hyde 2005). In 2008, excavations began on the western half, the half thought to be the initial construction.

The plaster surface was removed first, revealing the cut stone blocks that made up the wall of the platform. This plaster surface was 8 cm thick and extended to the edges of the wall. Based on the fact that the plaster floor the platform was built on rolls up onto the base of the platform, it is likely that the entire exterior of the platform was covered in plaster. Additionally, the remnants of red pigment on some of the plaster indicate that A-Sub-2 was painted. Removal of the plaster exposed a rectangular wall of similar construction, confirming that the western half of the platform was constructed separate from the eastern half (Figure 5).

Below the plaster surface was a construction fill matrix that consisted of dirt and rocks up to 8 cm in diameter. After a depth of approximately 10 cm, a second plaster surface was encountered, although it was not present in the middle of the excavation area. Although none was found, this “hole” is believed to be intentional since the overlying plaster surface was so well preserved. There is no indication of the platform having been intruded into, culturally or otherwise.

The second plaster surface was approximately 5.5 cm thick, followed by 12.5 cm of construction fill. Once below this second internal plaster surface, excavations uncovered an alignment of stones running east-west through the center of the rectangular platform, just above a third plaster surface. This plaster surface was only a few centimeters thick on average. Below the third plaster floor was bedrock. It must be pointed out that neither of the plaster surfaces encountered inside the platform matches the plaster surface outside on which it is resting.

In 2004, excavations were made into part of the eastern half of the platform (Hyde 2005). The eastern wall was poorly preserved and unknowingly removed at that time, as part of Burial 1. The plaster surface and underlying construction fill was removed in the northern half of the eastern side of the platform, terminating at a plaster floor. This plaster floor is

the Late Preclassic plaza floor that Structure A-Sub-2 is resting on. A large cut stone block, 25 x 15 x 15 cm, made up the northern wall of this side of the platform. The construction of this half is different the western half. As mentioned previously, the plaster plaza floor was not found to continue inside the western half as it does to the east.



Figure 5. Internal wall of Structure A-Sub-2.

The 2009 investigations of the eastern half of Structure A-Sub-2 consisted first of removing the plaster and construction that remained in the southern half from the 2004 excavations, leveling it off down to the plaza floor. This revealed a large cut stone block at the southern end of the platform of similar size and configuration as the northern end. The plaster plaza floor inside the eastern half was removed along with the fill below down to another plaster floor, which matched with the second internal floor found in the western half. After this was removed, the alignment of stones from the western half continued across. Like the western half, these too were resting on a plaster surface right

above bedrock. Much of the fill north and south of this alignment was rich in artifactual material, the analysis of which is ongoing.

Excavations inside A-Sub-2 during the 2008 season confirm that the T-shaped platform was originally constructed as a single rectangular platform. The western half of the platform consists of a complete rectangular platform, constructed of uniformly shaped cut stone blocks. The plaster plaza floor that abuts it does not continue under this half of A-Sub-2. Conversely, the eastern half was constructed as an add-on, built on the plaza floor, and made of cut stone blocks that are significantly larger than the western side, and is 30 cm longer north-south.

The function of A-Sub-2 is unknown although I believe it was important to the inhabitants of Group A, and possible others in the community. Structure A-Sub-2's association with the round ceremonial structure and the placement of the burials and caches around it point to some ritual function. That the original location of the initially constructed western half was not forgotten after being plastered over, as evidenced by the Caches 1 and 5, is also indicative of A-Sub-2's significance. That being said however, excavations inside this platform resulted in the recovery of no burials, caches, or other offerings in either side of the feature. It is possible, of course, that offerings of perishable materials were made but did not survive.

#### **STRUCTURE A-4**

Structure A-4 is the largest structure at Group A and one of two mounds on an artificially elevated plaza in the Middle Courtyard (Figure 2). The structure is located on the east side of the courtyard with the front of the structure facing west, is approximately 20 m long north-south at the platform base, approximately 4-5 m tall from the level of the courtyard, and oriented 10° east of magnetic north. Structure A-4 is. Although not pyramidal in shape, it is presumed to be ceremonial in function due its contextual location within in the group.

Excavations began on Structure A-4 in the 2007 season in which stairs leading up the platform to the superstructure were exposed and defined (Hyde and Atwood 2008). Four poorly preserved steps were uncovered leading from the courtyard up to a landing. The steps varied in height (due to the preservation of the stones) ranging from 10 to 25 cm, and generally 50-60 cm in length. These stones are made from limestone and are more or less uniform rectangular blocks. After the fourth step there is a landing (Landing 1) that extends back approximately 65 cm, at which point there is a 20 cm step up to a second landing (Landing 2). The stones used for this step are made from flat unshaped chert cobbles. This landing also extends back approximately 65 cm, terminating at the wall of the superstructure. Both landings are plastered, with the best preservation occurring closest to the wall.

The goals of the 2008 season for Structure A-4 were focused on defining various aspects of the final construction phase of the structure:

1. Further define the staircase of the platform leading up to superstructure.
2. Define the entrance to the superstructure located on top of the platform, and determine its internal layout.
3. Locate and define the edge of the staircase.

Excavation of the staircase continued in the 2008 season to determine its width and configuration. It appears the staircase extends across the entire front of the platform. Due to time constraints the corners were not located. However, a special deposit was uncovered on Landing 1.

Located on Landing 1 was a deposit of four obsidian blades, labeled as Cache 6 (Figure 6). These blades are lined up side by side, and are oriented east-west. The two at the northern end of the deposit are intact and measure 4-5 cm. Next to these are two fragments that appear to fit together and likely broke in place. These two fragments together also measure 4-5 cm. At the southern end of the deposit are two small fragments, approximately 1-2 cm each. They are not lined up like the others, appearing instead to be perpendicular to each other. Due east from Cache 6, up on Landing 2, a single obsidian blade was found, also oriented east-west. It is uncertain if they are all from the same core, although it is likely that at least those in Cache 6 were.



Figure 6. Photo of the Cache 6.

Following Landing 2 towards the superstructure led to the identification of the front wall and entrance. The wall is made of two components. The foundation stones at the base of the structure are of cut limestone blocks 20 x 10 x 10 cm. These “header” stones extend roughly 10 cm from upper wall (Figure 7). Above the headers, the walls of the structure consist of large, square, cut stone limestone blocks, on average 40 x 40 cm on the face, with a depth of approximately 20 cm. Much of the wall is very poorly eroded, and most of the stone above the first course are missing, presumably from collapse. Structure A-4 appears to contain a single entrance by way of a centrally located doorway approximately a meter wide.



Figure 7. Landing 2 of Structure A-2 platform and base of superstructure.

Very limited excavations occurred inside Structure A-4, so little can be said about the internal configuration of the structure. Following the doorway in on the northern side, a number of large cut limestone blocks were encountered, although whether they were in place or disturbed was not clear. It is possible they are part of an interior wall that extends



into the building towards the back wall. It is also possible that they may be collapsed roof stones, or from upper courses of the wall. Alternatively, it could be neither of these and instead something not yet considered. Future excavations will be needed to understand the interior layout of this building.

The third goal for Structure A-4 was to define the corners of the platform staircase. Continuing from the previous season's investigations, new excavations extended southward on the steps. An additional 4 m were excavated to the south, following the steps without finding the edge of the staircase. Due to time constraints and a tree, we could not go further in 2008. However, it does appear as though the staircase extends across the entire face of the platform although additional excavations will be needed to verify this hypothesis.

## CONCLUSION

Excavations in the 2008 season resolved some questions, left others unanswered, and led to some new questions. A-Sub-2 was clearly constructed in separate phases, with the western half being earlier than the eastern portion. Its association with the burials, caches, and A-Sub-1, as well as the veneration suggested by the later caches (Caches 1 and 5) indicate this feature was likely ceremonial and an important location to the inhabitants of Group A.

Structure A-4 consists of a large platform, with a wide staircase that likely extends across its entire front face. Four steps lead up to a landing, followed by a second landing, and then a superstructure with a centrally located 1 m wide doorway. Given its large size, location on the east side of the Middle Courtyard with its restricted access, and placement of a cache of obsidian blades, Structure A-4 likely functioned as a temple or shrine.

Investigations for the 2009 season will include working to better define and understand the interior space of Structure A-4; look for additional entrances, define the front corners of the platform and at least one of the superstructure; and possibly to determine how Structure A-4 articulates with the Northern Courtyard.

## REFERENCES CITED

Everson, Gloria

2003 *Terminal Classic Maya Settlement Patterns at La Milpa, Belize*. Ph.D. Dissertation, Department of Anthropology, Tulane University.

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.

Hughbanks, Paul

2005 *Landscape Management at Guijarral, Northwestern Belize*. Ph.D. dissertation, Department of Anthropology, Tulane University.

Hyde, David M.

2005 Report of 2004 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., pp. 7-13. Occasional Papers, Number 4. Mesoamerican Archaeological Research Laboratory. University of Texas at Austin.

Hyde, David M. and Kirsten Atwood

2007 Report on Investigations of the Preclassic Settlement at Group A of the Medicinal Trail Site. In *Research Reports from the Programme for Belize Archaeological Project*, edited by Fred Valdez, Jr., pp. 23-33. Occasional Papers 8, Mesoamerican Archaeological Research Laboratory. The University of Texas at Austin.

2008 Excavations at Group A of the Medicinal Trail: Results from the 2007 Investigations. In *Research Reports from the Programme for Belize Archaeological Project, Vol. 2*, edited by Fred Valdez, Jr., pp. 111-135. Occasional Papers 9, Mesoamerican Archaeological Research Laboratory. The University of Texas at Austin.

Hyde, David M., and Fred Valdez, Jr.

2007 Overview of Activities at the Medicinal Trail Site for the 2006 Season. In *Research Reports from the Programme for Belize Archaeological Project*, edited by Fred Valdez, Jr., pp. 15-22. Occasional Papers 8, Mesoamerican Archaeological Research Laboratory. The University of Texas at Austin.

Jespersen-Tovar, Lynne C.

1996 *Maya Lithic Production and Consumption in the Late Classic*. M.A. thesis, The Department of Anthropology, University of Texas at Austin.

Lewis, Brandon S.

1995 *The Role of Specialized Production in the Development Sociopolitical Complexity: A Test Case from the Late Classic Maya*. Ph.D. dissertation, Department of Anthropology, The University of California at Los Angeles.



Hyde

Muñoz, Arturo R.

1997 *Excavations at RB-11: An Ancient Maya Household in Northwestern Belize*. M.A. thesis, Department of Anthropology, University of Texas at San Antonio.

Robichaux, Hubert R.

2007 Fifteen Years of Settlement Pattern Survey in the Three Rivers Region of Northwestern Belize: What Have We Learned? In *Archaeological Investigations in the Eastern Maya Lowlands: Papers of the 2006 Belize Archaeological Symposium*, edited by John Morris, Sherilyne Jones, Jaime Awe, and Christophe Helmke, pp. 197-212. Research Reports in Belizean Archaeology, Vol. 4, Institute of Archaeology, NICH, Belmopan, Belize.

## **A LATE PRECLASSIC BURIAL AT MEDICINAL TRAIL: EXCAVATION AND ANALYSIS OF BURIAL 3**

Angeliki Kalamara Cavazos, University of Texas at Austin

### **INTRODUCTION**

Three burials were found in the northern courtyard of Group A of the Medicinal Trail that date to the Late Preclassic. Burial 3 is the focus of this report. The mortuary analysis of Burial 3 outlined below is the result of preliminary observations in the field, osteological analysis, and literature review of previous archaeological and ethnographical research in the Maya world.

### **EXCAVATIONS 2008**

Continuing with the previous season's research design, in 2008, the burial was uncovered in the order it had been "re-buried." Bones were exhumed upon removal of the protective layers placed on top of any loose bone that had already been mapped. The excavation plan was to leave undisturbed as many of the already exposed bones as possible and to further expose the rest of the skeleton.

During the 2008 field season, the area immediately south of what had been previously identified as the skull (which had been removed within the matrix), was excavated down to the plaster floor. This exposed two modified shell ornaments, a culturally modified incisor and two premolars that exhibited an in situ arrangement. The cluster of finds was photographed in situ and then removed in matrix.

Excavation in the lab provided clues about orientation of the head and further clarified the presence of modified teeth. After exposing all bones present, a final map of the skeleton was made. The bones were removed following step-by-step procedures for excavating, recording and transporting human skeletal material as outlined in the PfbAP Field Guide for Recovery and Documentation of Skeletal Remains (Saul J. Saul F. and Thompson 2007). All skeletal materials were transferred to the PfbAP lab for osteological analysis. In the summer of 2008, Julie and Frank Saul performed the osteological analysis and their findings are summarized below.

### **ANALYSIS OF BURIAL 3**

The person buried in this grave was classified as a probable young adult female (based on the left hipbone fragment), approximately 20-30 years old (based on the dental analysis) (Saul and Saul, personal communication 2008). The osteological analysis confirmed the preliminary field observations about the positioning of the body. The individual was placed in a prone position with arms extended to the sides and the legs crossed and folded drawn to the buttocks (Figure1). In addition, the osteologists concluded that the head was

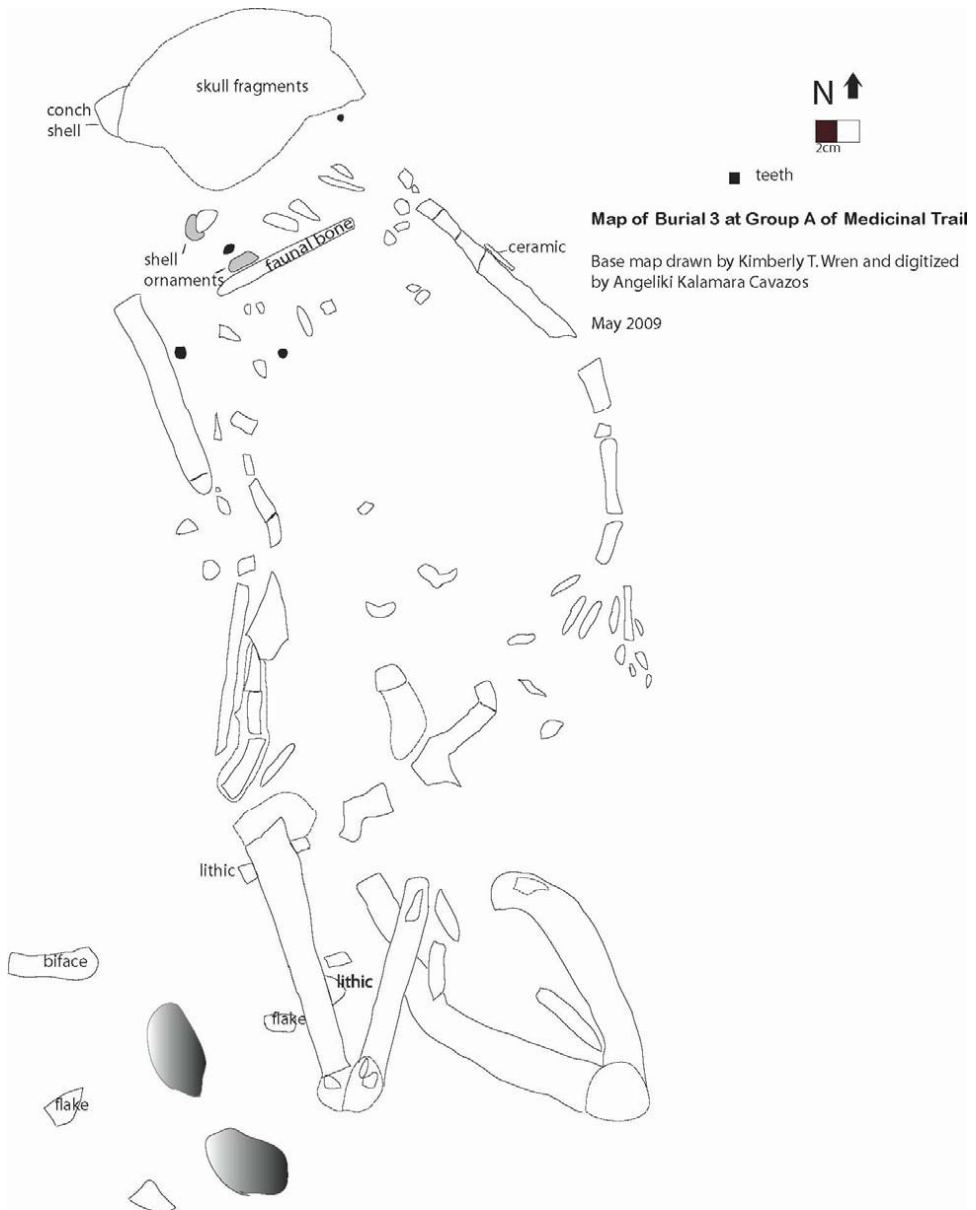


Figure 1. Burial 3.

resting on the left cheek facing to the east. Due to the eroded and fragmentary condition of the skeletal elements it was impossible to assess her stature, the presence (or absence) of any activity markers, pathology, or any trauma. Indications about her diet were based on observations of the dental findings (see below). When the matrix of the skull was excavated in the PFBAP laboratory it exposed near complete mandibulatory and maxillary arches, with nine of the recovered teeth showing modifications practiced during the woman's life. Based on the dental findings the osteologists were able to provide evaluations of her development and diet. The absence of signs for linear enamel hypoplasia was an indicator of a well-nourished and healthy childhood. The heavy calculus is suggestive of a diet high in carbohydrates. Dental calculus, or tartar, can result in gum disease, which in turn results in bone inflammation and degeneration and with time may result in early tooth loss. However, the absence of two of her teeth points most likely to a postmortem loss. Her relatively few caries may be related to her youth and health. The minimal attrition is related to her relatively young age. Marked dental attrition is very common in the Maya area and could be considered cultural trait as it is related to cultural activities such as food preparation, types of foods eaten, and use of teeth as tool (Saul and Saul 1997). The diet of the ancient Maya was a bit gritty and wore down their teeth. Consuming maize after it was ground between stones wore down the occlusal surface of all teeth. (e.g. Burial 123 at Cuello Saul and Saul 1997). Comparatively, osteological analysis from Altar de Sacrificios (Saul 1972), Cuello (Saul and Saul 1997), and Cahal Pech (Song 1995) regarding relatively fine health status during the Late Preclassic accords with assessments for the woman in Burial 3. In more detail, her teeth had undergone modification resulting from filing the edge. Dental modification is a cultural trait of the ancient and contemporary Maya (Gann 1918; Ricketson and Ricketson 1937; Romero 1970; Williams and White 2006). Based on Romero's system of classification for teeth with dental modification (Romero 1970), they represent the types A1, B4, B5 and probably B6. Dental modification cannot be positively correlated with other indicators of high or low status (Romero 1958). The trait of decorating teeth, by filing or with inlays of precious stones have been recorded in burials found in the simplest house to the most elaborated tomb in the Maya lowlands dating from the Preclassic to the Postclassic. In burials recovered from Late Preclassic residential contexts, individuals exhibit similar dental decoration on their teeth, with types A1 and B4 being the most preferable (Table 1).

The woman of Burial 3 was placed to rest directly on the plaster floor. Around the corpse, stones were placed to delineate the burial space. The grave is marked by a crude ring of unmodified stones, possibly remnants of cist walls though not completely lined. The possible modified, rectangular, larger stones identified in the field as capstones, might have been placed haphazardly atop or around the body or head as burial markers opposed to intentional construction. Therefore, Burial 3 could represent what Welsh defines as "haphazard cist" or "partial cist": both varieties of the cist type are characterized by the use of unshaped stones haphazardly placed around the corpse, intentionally placed yet serving as an incomplete or partial lining (Welsh 1988:17). It is not possible to assess if

the cist was ever exposed and stood freely in the courtyard or if it was immediately covered with construction fill and plastered over; nor can we tell if the death of the woman in Burial 3 was what triggered this activity affecting all three burials of the courtyard. What we know is that the odor of decay if present, did not deter continued habitation in the courtyard during the remainder of the Late Preclassic.

Table 1. Studies of dental modification from other sites (adopted from Williams and White 2006).

Site	Time Period	Number of Adults in Sample	Number and Sex of Individuals with Modifications	Type of Dental Modification	Frequency (%)
Cuello, Belize	Preclassic	130	5 (2F, 3M)	A1, F3 B2/B4	4
Uaxactun, Guatemala	Late Preclassic to Early Postclassic	13	5 (1F, 1M, 3U)	A1, A4, B5, F4	38
Barton Ramie, Belize	Late Preclassic to Early Postclassic	63	12 (5F, 4M, 3U)	A1, A2, B2, B4, B5, C3, F8, F9	19
Southeastern Peten	Late Preclassic to Terminal Classic	30	10 (1F, 2M, 3U)	A1, A2, B2, B5, C6, E1, E3, G1, G3	33

The burial sample within the courtyard is minuscule. Even within the burial sample of the courtyard, the ancient inhabitants did not follow a certain pattern of inhumation for their dead. Burial 1 was placed within the round structure and Burial 2 was associated with the rectangular platform, while Burial 3 was placed directly on the plaster floor of the courtyard, within a cist, in close proximity to the platforms. Body arrangement and orientation varies in all three burials. What the burials have in common is that they are all primary.

Two identical discoidal shell ornaments were found associated with the skull of the woman interred in the cist. Based on their pale yellow to orange color, it is likely that they are of the genus *Spondylus*. These bivalves are found in both the east and west Central and South American coasts (Wye 1991) and have been crafted into adornment items by the ancient cultures of these areas. They measure 2 to 2 ½ cm in diameter and they are thinly crafted. Their identical duality points to the possibility of being ear ornaments, but they probably represent beads. Similar items were recovered from the Late Preclassic burials from K'axob (McAnany editor, 2004).

A tubular bead manufactured of possible *Spondylus* shell was also recovered. The bead measures almost 1 cm in length and it could have been used suspended as part of a necklace or worn as a bracelet. The bead could also have been sewn on a garment. The fact that only one has been recovered makes its use uncertain, but another possibility should be mentioned. Considering that the find was discovered near the head area and

following what is known about the position of singular jadeite beads (e.g. Tolok Group, Barton Ramie), it is plausible that this item may have originally been deposited in the individual's mouth. Among the artifacts buried with the woman in this burial was also another shell fragment, recovered from the area close to the head. It probably belongs to the *Strombus* genus. More commonly known as conch shells, these gastropods were preferred by the Maya as inclusion to burials. It does not show any evidence for suspension.

An elongated fragment of non-human bone was found resting across the back of her neck. It was identified as most probably deer bone with a rather polished surface and measured approximately 8 cm in length. It could have possibly been used as a hairpin considering its recovery position. Deer bone has been preferred for hair ornaments as (i.e. at Barton Ramie). From the bone's cross section and morphology it seems to be a deer rib. If this is the case, the likelihood to be a fragment of an awl similar from Barton Ramie should be considered.

## **DISCUSSION**

Maya burial practices during the Late Preclassic communities across the Lowlands share a number of common features. Burials may include ceramic artifacts common and uncommon, bone, shell, jade, and other objects placed with the deceased by their relatives (Robin and Hammond 1991; Willey et al. 1965; McAnany 2004; Smith 1937). The deceased may wear customary ornaments such as necklaces, bracelets, anklets, and ear ornaments made out of a variety of materials, such as jade and other precious stones and shell. Stone tools especially obsidian blades are often included, and other more perishable tools such as awls are detected (Joyce 1999).

Burial 3 fits well with the picture drawn above. Like other Maya of her time she was placed in a grave made for her and was buried with her ornaments and with other shell and bone paraphernalia. She was a healthy individual with a well nourished childhood. She decided to adorn herself by modifying her teeth and she had a fashion sense similar to other individuals of her time towards bone and shell ornaments.

The woman buried in the courtyard would have been a member of the household that occupied the courtyard. Although residential structures have not been identified for the Late Preclassic, occupation at the courtyard group was identified based on the two platforms and earlier construction phases below the Late Classic structures. Hyde et al. (Hyde and Atwood 2007; Hyde and Martin 2009) have suggested that the earlier occupants of Group A appear to represent the household in the community who occupied the site first and realized its agricultural potential, gaining some degree of social power.

The interment cannot disclose whether the woman in Burial 3 was an important figure of the "ruling" family with higher wealth status or part of the general community. Special items like shell could possibly point to trade activities available to a leading family, but

cannot testify for a higher degree of wealth between the leading families versus others from the Medicinal Trail community (Kalamara Cavazos 2009). As with other Late Preclassic burials shell was observed in burials as a standard belonging within the modest residential platforms (e.g. Barton Ramie). If she was healthier than others at Medicinal Trail remains to be seen by recovering more burials in order to assess population's health at the ancient community; compare to the other two individuals from Burials 1 and 2, who also show indications of a well nourished childhood (Sauls personal communication 2009) balanced dietary habits for the residents of the courtyard could be suggested but cannot reveal with certainty a higher degree of social status. Pathologies like enamel hypoplasia are of acute nature and can be considered to reflect the everyday stress of living in agricultural, tropical environment just as found in other similar communities e.g. Tolok Group of the Belize River Valley (cf. Song et al 1994).

Not all Maya peoples treated their deceased relatives in the same manner. Inhumation within the residential compounds was widely practiced but burials outside the living spaces must also have occurred since the amount of ancient Maya burials encountered thus far throughout the Lowlands doesn't sum up to population estimations (cf. Weiss-Krejci 2006). As for the burial custom of the prone positioning as discussed earlier we must consider Weiss-Krejci's suggestion, relying on stylistic similarities between the Highlands and the Lowlands (since the Middle Preclassic) e.g., the tradition to place a vessel over the head (like for Burial 2), she proposes that extended prone burials from the Highlands and the Lowlands are connected to each other and that maybe this position characterizes a specific group of people who shared similar beliefs and ideology.

Burial 3 along with Burials 1 and 2 and their associated structures and caches were placed in the courtyard in close proximity to living areas and a plaster floor sealed them at a moment in time during the Late Preclassic. Why did the inhabitants of Group A choose to engage in this sort of mortuary activity?

Archaeologically identified house compounds, built around common patio areas, are presumed to have been inhabited by social groups who maintained an identity and association with a single place over many generations for many of them were constantly modified and enlarged (Hendon 1991). Medicinal Trail presents the opportunity for the analysis of such a group. Although no definite structures have been confirmed dating to the Late Preclassic, occupation was identified by structural remains below Late Classic residential structures. Furthermore, Group A encloses a structure that included human remains (round structure and Burial 1), possibly of ancestors that inhabit the site during the Late Preclassic, and a structure identified as possible shrine/temple associated with the Late Classic residential compound (Hyde and Martin 2009).

Gillespie's (2000) careful analysis of Maya houses calls attention to the cosmological and social meanings encoded within the architectural arrangements and features of house compounds. The compounds often include recognizable shrine structures for the

reverence of family ancestors as physical remains of deceased persons are found associated with the structures (e.g. McAnany 1995; Aimers et al 2000). The house is a means of creating place and sociocosmic order within the landscape and building such order requires specific ritual actions to produce and activate these notions undertaken by those who thereby define themselves as a group (Gillespie 2000, 2001).

It is with great certainty that there was ritual activity in the northern courtyard of Medicinal Trail during the Late Preclassic. These features can testify:

- 1) A round ceremonial structure with associated human burial (Burial 1)
- 2) A rectangular platform with associated human burial (Burial 2)
- 3) Intentional placement of four caches.
- 4) Placement of Burial 3
- 5) Burying all the above features at a single moment in time

Structures found below residential plazas, buried under successive plaza floors and associated with mortuary activity and caching, has been documented elsewhere e.g. at Tolok Group of Cahal Pech. The presence of round structures found in plaza areas (also at Cuello and Uaxactun) demonstrates the importance of the creation of sacred space among the ancient Maya. The occurrence of these ritually significant features highlights the significance of the courtyard at Medicinal Trail during the Late Preclassic. Based on the ceremonial character that has been attached to circular structures (e.g. Aimers et al. 2000; Hendon 2000), we can imagine that ceremonies associated with these features took place in the courtyard during this time (see also Hyde and Atwood 2007). Cache offerings can be interpreted as a way of animating the courtyard: although no materials have yet been recovered (Hyde and Martin 2009) from within the caches, it's the ritual act of caching, and the concept it represents that is important. The significance of any cache rests not in the material nature of its content, but rather in the symbolic nature of the act (Garber et al. 1998). I won't elaborate more on these deposits or Burials 1 and 2 as the focus of this report is the cist burial (Hyde n.d).

The burial does not appear to be intrusive in the floor but it was placed there before the new floor covered all features in the courtyard. Broken objects in the burial, like the *Strombus* sps. Shell (McAnany et al. 1999) and bone implement could be interpreted as if they were equipped with the quality of "animateness" and were associated with the individual who (possibly) made, owned and used them. When the owner passes away these objects need to be de-animated in order for their soul to accompany their owner's. Smashing objects constitutes one way of deactivating the soul, or by drilling a hole through the object (Stross 1998).

Why the woman was not buried in one of the platforms is a good question when we consider the fact that she was placed in close proximity to the platform. Burial 3 was not intrusive in the floor as it was the case for the careful placement of carefully constructed cists in the round structure of the Tolok group at Cahal Pech. A cist was built and the



woman was placed inside, cobble fill covered it and it was plastered over. Was Burial 3 part of a dedication practice along with the caches that were placed less than a meter north of her head? Or does the burial's close proximity to the cache offerings and continuous occupation of the floor that buried these features mean that she was the dedication sacrifice to start the renovations of the courtyard? No sign of trauma were recorded on her skeletal remains but their fragmentary nature leaves the possibility open. If household shrines, here the round structure is used to house the more important members of the residential plaza (see Welsh 1988: 190; Aimers et al.2000) the question remains if the woman resting in close proximity to the shrine is by default a lineage member of the ruling family or an extended member of the group, therefore buried outside the platform (Kalamara Cavazos 2009).

As presented earlier, the variation of architectural features through time serving as the physical locus of ancestor worship reflects not only the ideological factor of the interment, but the support of permanence and power of an elite lineage. That is when living survivors become the active agency and not the passive conformists to traditional funerary customs but the knowledgeable social actors capable of exploiting the new social status quo as "lawful" survivors of the familial lineage. It has been proposed (Hyde and Atwood 2007; Hyde and Martin 2009) that it was during this time that Groups A and B have been inhabited by pioneering groups who settled in this promising prime land, monopolizing its agricultural potential. If we accept this hypothesis then the mortuary behavior in the courtyard group could possibly correlate with social control and land ownership establishments. The woman of Burial 3 could possibly be part of the ruling group but if she was commemorated as an ancestor or if she assumed the role as offering for official termination of the courtyard's life is not easy to assess. Nonetheless, the ceremonial character of the northern courtyard at Group A and the burial activity coincides with the house society's life (and death) and provides evidence of the attached ideological underpinnings of funerary behaviors. The occupants of the group used ceremonial structures and construction episodes ideologically charged with conceptions about death and the afterlife while the loss of a group member could possibly provided an opportunity for the reorganization of space.

## **FINAL COMMENTS**

Medicinal Trail during the Late Preclassic was inhabited by an ancient Maya group who recognized its agricultural potential. As its relationship with La Milpa is generally certain, falling under the jurisdiction of the large center is definitely a possibility or at the least some sort of interaction is to be expected. As a community on a good agricultural land, in case of hierarchical interactions, surplus production either settles for tribute or enables trade for exotic goods (Douglas 2002). Exotic items, like spondylus shell, have been recognized archaeologically in Burial 3.

The societal character of the Maya groups during the Late Preclassic has yet to be mutually agreed upon by Maya archaeologists. If the Late Preclassic society was class-

divided, simply ranked, sectored in lineages (McAnany 1995;2004) or “houses” (Joyce and Gillespie 2000), or all of the above, cannot be determined with certainty. For the purpose of this work, I am building on the premise that the house is a co-residential group with internal ranking and some centralized decision making authority that seeks to improve their individuals’ standing based on the resources available. Such a group could have been associated with the occupation of Medicinal Trail as the agricultural potential of arable land flanks the establishment location of Group A early in the Late Preclassic. That first group assumes landownership rights. As population increased in the region, the initial inhabitants of the group adopted other families, thus increasing the productive potential of the co-residential unit creating a heterogeneous household with varying degrees of wealth among its members. Although kinship might or not be the bond that ties this unit, it is by the active agency of its members who adopt kinship and affinity strategies, that the house is reproduced, socially and materially. This premise suggests that the practice of ancestor worship might have influenced the subsequent spatial configuration of the group. With the passage of time the Maya group of Medicinal Trail revered this location as sacred space and purposely erected their buildings around it-most likely during the Late Preclassic and over these ceremonial features-evidently during the Late Classic (cf. Rodriguez 2008). Therefore socio-religious activity is reflected in the ritual practices of the community, the interments of burials and caches associated with the ceremonial platforms, and their sub-plaza location representing what Julia Hendon (1999) called “an extension of the physical space of the residential compound and further development of the social space”.

#### **REFERENCES CITED**

- Aimers, James J., Terry Powis, and Jaime Awe  
2000 Formative Period Round Structures of the Upper Belize River Valley.  
*Latin American Antiquity* 11(1):71–86.
- Gan, Thomas  
1918 *The Maya Indians of Southern Yucatan and Northern British Honduras*. Smithsonian Institution. Bureau of American ethnology. Bulletin 64. Washington D.C.
- Douglass John  
2002 *Hinterland Households: Rural Agrarian Household Diversity in Northwest Honduras*. University Press of Colorado, Boulder, Colorado.
- Garber, James F., W. David Driver, Lauren A. Sullivan, and David M. Glassman  
1998 Bloody Bowls and Broken Pots: The Life, Death, and Rebirth of a Maya House. In *The Sowing and the Dawning: Termination, Dedication, and Transformation in the Archaeological and Ethnographic Record of*

*Mesoamerica*, edited Shirley Mock, pp. 125-133. University of New Mexico Press, Albuquerque.

Gillespie Susan

- 2000 Maya "Nested Houses": The Ritual Construction of Place," in *Beyond Kinship: Social and Material Reproduction in House Societies*. Edited by Rosemary A. Joyce and Susan D. Gillespie, pp. 135-60. University of Pennsylvania Press, Philadelphia.
- 2001 Personhood, Agency, and Mortuary Ritual: A Case Study from the Ancient Maya. *Journal of Anthropological Archaeology* 20: 73-112.

Hendon, Julia A.

- 1991 Status and Power in Classic Maya Society: An Archaeological Study. *American Anthropologist* 93: 894-918.
- 1999 The Pre-Classic Maya Compound as the Focus of Social Identity. In *Social Patterns in Pre-Classic Mesoamerica: A Symposium at Dumbarton Oaks, 9 and 10 October 1993*, edited by David C. Grove, and Rosemary A. Joyce, pp. 97-125. Dumbarton Oaks Research Library and Collection, Washington, D.C.
- 2000 Round Structures, Household Identity, and Public Performance in Preclassic Maya Society. *Latin American Antiquity* 11(3):299-301.

Hyde David and Kirsten Atwood

- 2007 Report on Investigations of the Preclassic Settlement at Group A of the Medicinal Trail Site. In *Research Reports from the Programme for Belize Archaeological Project*, edited by Fred Valdez, Jr., pp. 23-33. Occasional Papers 8, Mesoamerican Archaeological Research Laboratory. The University of Texas at Austin.

Hyde David and Lauri Martin

- 2009 *Preclassic Power Shifts and Postclassic Visitations: The Hinterland Elite at the Medicinal Trail Site, Northwestern Belize*. Paper presented at the Belize Archaeology Symposium, Belize City, BZ.

Joyce Rosemary

- 1999 Social Dimensions of Pre-Classic Burials. In *Social Patterns in Pre-Classic Mesoamerica*. Edited by David C. Grove and Rosemary A. Joyce, pp. 15-47. Dumbarton Oaks Research Library and Collections, Washington, D.C.

Joyce, Rosemary A., and Susan D. Gillespie (editors)

- 2000 *Beyond Kinship: Social and Material Production in House Societies*. University of Pennsylvania Press, Philadelphia

Kalamara Cavazos, Angeliki

2009 *The Investigation and Analysis of an Ancient Maya Burial at Medicinal Trail*. MA Thesis, Department of Anthropology, University of Texas at Austin.

McAnany Patricia

1995 *Living with the Ancestors*. University of Texas Press, Austin.

McAnany, Patricia (editor)

2004 *K'axob: Ritual, Work, and Family in an Ancient Maya Village*. Monograph 51, The Cotsen Institute of Archaeology, University of California at Los Angeles.

McAnany, Patricia, Rebecca Storey and Angela Lockhard

1999 The Formative Maya Village of K'axob: Mortuary Ritual and Family Politics at Formative and Early Classic K'axob, Belize. *Ancient Mesoamerica* 10: 129-46.

Ricketson, Oliver G. and E.B. Ricketson

1937 *Uaxactun, Guatemala: Group E 1926-1931*. Publication 477, Carnegie Institution of Washington.

Robin, Cynthia and Norman Hammond

1991 Ritual and Ideology: Burial Practices. In *Cuello: An Early Maya Community in Belize*, edited by Norman Hammond, pp. 204-25. Cambridge University Press.

Rodriguez, George L.

2008 *The Investigation and Analysis of a Rural Household Structure and its Associated Courtyard Group at the Ancient Maya Site of Medicinal Trail*. MA Thesis. Department of Anthropology, University of Texas at San Antonio.

Romero, Javier

1958 *Mutilaciones dentarias prehispanicas de Mexico y America en general*. Instituto Nacional de Antropologica e Historia, Mexico.

1970 Dental Mutilation, Trephination, and Cranial Deformation. In *Handbook of Middle American Indians, Volume 9: Physical Anthropology*, edited by T.D. Stewart, pp.50-67. The University of Texas Press.

Song, Rhan-Ju

1995 Bones and Bowls of the Formative Maya: A Preliminary Report on the Human Skeletal Remains from Cahal Pech, Belize, and the implications for the Mortuary Behavior. In *Belize Valley Archaeological Reconnaissance*

*Project: Progress Report of the 1995 Field Season*, edited by James Conlon, pp. 173-197. Institute of Archaeology, University of London.

Song, R., B. Hohmann, D. Mardiros, and D. Glassman

1994 All in the Family Circle: A Second Interim Report of the Human Skeletal Remains from Tolok, Cahal Pech, Belize. In *Belize Valley Archaeological Reconnaissance Project: Progress Report of the 1993 Field Season*, edited by Jaime Awe, pp. 147-163. Institute of Archaeology, University of London.

Stross, Brian

1998 Seven Ingredients in Mesoamerican Ensoulment: Dedication and Termination in Tenejapa. In *The Sowing and the Dawning: Termination, Dedication, and Transformation in the Archaeological and Ethnographic Record of Mesoamerica*, edited Shirley Mock, pp. 31-40. University of New Mexico Press, Albuquerque.

Saul Frank P.

1972 *The Human Skeletal Remains of Altar de Sacrificios: An Osteobiographic Analysis*. Papers of the Peabody Museum of Archaeology and Ethnology, vol. 63, no. 2. Harvard University, Cambridge, MA.

Saul, Julie M and Frank P Saul

1997 The Preclassic Skeletons from Cuello. In *Bones of the Maya: Studies of ancient Skeletons*, edited by Stephen L. Whittington and David M. Reed. Smithsonian Institution Press.

Saul Julie M., Frank P. Saul and Lauri Thompson

2007 *Recovery and Documentation of Skeletal Remains: A Brief Field Guide*. Programme for Belize Archaeological Project: Field Guide Series 1. Occasional Papers, Number 7, Mesoamerican Archaeological Research Laboratory. The University of Texas at Austin

Smith, R. E.

1937 *A Study of Structure A-I Complex at Uaxactun, Peten, Guatemala. Publication 456*. Washington, D.C.: Carnegie Institution of Washington

Weiss-Krejci, Estella

2006 The Maya Corpse: Body Processing from Preclassic to Postclassic Times in the Maya Highlands and Lowlands. In *Jaws of the Underworld: Life, Death, and Rebirth Among the Ancient Maya*. 7th European Maya Conference, edited by Pierre R. Colas, Geneviève LeFort and Bodil Liljefors

Persson. Verlag Anton Saurwein, Markt Schwaben, pp. 71-86. The British Museum, London, November 2002. *Acta Mesoamericana*, Vol. 16

Welsh, W.B.M.

1988 *An Analysis of Classic Lowland Maya Burials*. Oxford, England: BAR International Series 409.

Wiley, Gordon R., William Bullard, J.B. Glass, and J.C. Gifford

1965 *Prehistoric Maya Settlements in the Belize Valley*. Harvard University, Peabody Museum. Cambridge, MA

Williams, Jocelyn S. and Christine D. White

2006 Dental Modification in the Postclassic Population from Lamanai, Belize. *Ancient Mesoamerica*, pg. 139-151.

Wye, Kenneth R.

1991 *The Illustrated Encyclopedia of Shells*. Facts on File. New York.



## **GROUP B OF THE MEDICINAL TRAIL SITE: SELECT EXCAVATIONS AT OPERATION 12\***

Deanna M. Riddick, The University of Texas at Austin

### **INTRODUCTION**

The Medicinal Trail Site is located in the Rio Bravo Conservation and Management Area in northwestern Belize. This site, surrounded by the La Lucha Uplands and the Rio Bravo Escarpment, consists of several courtyard groups, both formal and informal, as well as modified landscape features including depressions and terraces. This report contains a summary of excavations carried out at Group B, a formal courtyard group, of the Medicinal Trail Site.

### **LOCATION AND DESCRIPTION**

During the 2004 season at the Medicinal Trail Site Group B, which has been classified as a formal courtyard group, was located 200 meters northeast of Group A and was mapped in the 2006 field season by David Hyde, Doneen Arquines, and Rebecca Bria. This formal courtyard group, which consists of a constructed artificial platform, is comprised of four mounds, one of which is pyramidal in shape. Three of the structures are arranged around the courtyard, however not constructed on the platform itself. It has been proposed that both structures mapped and labeled B3 and B4 (Figure 1), serve as residential in function. However, they have yet to be excavated in the upcoming field seasons. Structure(s) B2a/B2b in the southern position of the courtyard may actually only be one structure, however due to its length and “from surface indications” (Thompson 2007) it may be supporting two structures. It has also been suggested that due to collapse both structures may now have the appearance of one (Thompson 2007). Additionally, Structure(s) B2a/B2b may have served as an area where civic functions were performed. This has been proposed due to its location and size, which differs greatly from Structures B3 and B4. Again, this is mere speculation and excavations have yet to reveal both its function and whether or not it suffered from collapse.

### **OBJECTIVES AND EXCAVATION OF THE 2008 FIELD SEASON**

During both the 2007 and 2008 field seasons the chronological assessment of Group B was initiated by utilizing random sampling techniques throughout the courtyard and behind the mounds. 1x1 meter test pits were placed and excavated thru to bedrock when possible. Suboperations K,L,M,N,O, and P were excavated and Subop J, which was opened during the 2007 season, was re-opened and extended, creating Suboperation N. Subop M was placed behind the northern mound, Structure B4, and was excavated to bedrock. This particular unit was shallow in depth. Subop L was placed in front of Structure B1 revealing a series of plaster floors throughout the unit. Subop P was placed in order to ascertain whether or not these floors extended throughout the courtyard in the same levels as Subop L. Subops N and O are extensions of Subop J from the previous



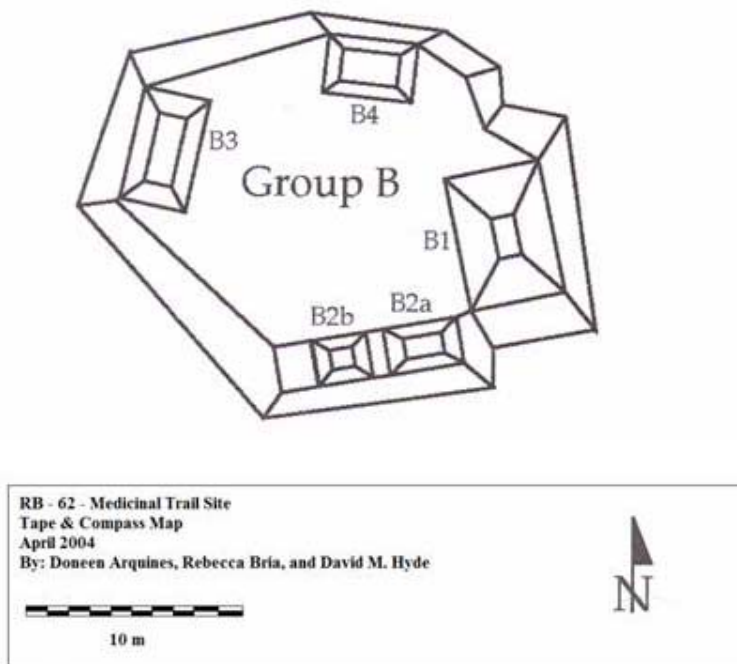


Figure 1. Map of Group B, Medicinal Trail Site. (Courtesy of PfBAP).

year. These two units, located behind Structure (s) B2b/B2a, revealed a possible source of sascabe material that may have been extracted. Particularly in Subop O, sascab may have been intentionally removed and construction fill composed of ceramic sherds and flakes supported the remaining sascabe material from collapsing.

The goal of the 2008 field season was to establish occupation history of Group B. These particular units contained ceramics serving as evidence supporting occupation from the Late Preclassic period to the Late Classic. Lithics from these units as well as from the previous year have yet to be analyzed and will reveal valuable information. Details concerning suboperations and their characteristics as well as artifacts can be found in a forthcoming report.

\* A version of this paper was previously submitted as part of a report (2008) to the Institute of Archaeology, Belmopan, Belize.

**REFERENCES CITED**

- Dunning, Nicholas, Jerry G Jones, Timothy Beach, and Sheryl Luzzader-Beach  
2003 Physiography, Habitats, and Landscapes of the Three Rivers Region. In *Heterarchy, Political Economy and the Ancient Maya*, edited by Vernon L. Scarborough, Fred Valdez, Jr, and Nicholas Dunning, pp. 14-24. The University of Arizona Press, Tucson.
- Thompson, Lauri McInnis  
2007 Preliminary Report on Group B of the Medicinal Trail Site: Operation 12, Lots A and B. In *Programme for Belize Archaeological Project: Summary Report the 2007 Investigations*, edited by Fred Valdez Jr., pp.31-33. Report submitted to the Institute of Archaeology, National Institute of Culture and History, Belmopan, Belize.



## **GROUP B OF THE MEDICINAL TRAIL SITE: OPERATION 12 (LOTS A, Q, and R)\***

Lauri McInnis Martin, The University of Texas at Austin

### **INTRODUCTION**

The Medicinal Trail site is a rural or hinterland community located in northwestern Belize in the Rio Bravo Conservation and Management Area. The site is bounded by the Rio Bravo Escarpment in the east and the La Lucha Uplands to the west. It is approximately 6 to 8 km east of La Milpa, the third largest archaeological site in Belize. The Medicinal Trail site consists the Turtle Pond excavated in 2004 (Chmilar 2005), a few formal courtyard mound groups, numerous informal mound clusters, and numerous associated landscape modifications including terraces, depressions, and linear features. Original excavations of the Programme for Belize's tourist "Medicinal Trail" were conducted in 2002 in two independent investigations of the mounds (Ferries 2002) and terraces (Farnand 2002). Group A (Figure 1), a contiguous group of three formal courtyards, was discovered in 2004 and has had continuous excavations under the direction of David Hyde. Group B (Figure 1), also discovered in 2004, is a large courtyard group consisting of four, possibly five, formal mound structures (Hyde 2005, Hyde et al 2006). The purpose of this report is to provide a summary and explanation of excavations at Group B carried out during the summer of 2008.

### **LOCATION AND DESCRIPTION**

Located approximately 200 m northeast of Group A is Group B (Figure 1). Group B consists of a formal courtyard group built on an artificial platform with four mounds. These structures are organized around, not on, the platform and they are situated in the cardinal directions with the eastern structure (B-1) being the largest and pyramidal in shape. This structure (B1) is penetrated by a large looter's trench in the center of the western face (Figure 2). During the 2007 season, significant debris was removed for the right and left of the trench on the western side. It was noted that there was a tree fall on the top, east face of the structure that had created a significant amount of disturbance. This season (2008), there is significant collapse on the top of the eastern wall of structure B1. This collapse filled most of the unit in the center of the trench. The south structure is long and from surface indications is possibly supporting two structures (B2a and B2b). It may also be that there were originally two structures and with collapse, they appear as one. It is thought that this structure served a civic function with relation to the temple structure; however, these observations are mere speculation and will require excavations to be definitive. The structures on the west and north boundaries of the courtyard are likely residential (B3 and B4).



Figure 1. Groups A and B of the Medicinal trail Site. (Courtesy of PfBAP).



Figure 2. Structure B-1 looter's trench.

## **OBJECTIVES**

The proximity of the formal groups A and B of the Medicinal Trail site present an opportunity to examine the validity of the hypothesized proximal extended family model over a significant occupation period – based on the lengthy occupation of Group A (Hyde 2005, Hyde et al 2006). The data collected from the Medicinal Trail Groups A and B also allows the use of models related to pioneering households – based on the dating of Group A to the Late Preclassic, ancestor veneration and pilgrimages – based on the recovery of broken Postclassic censer vessels from both the western face and the southeastern corner of the eastern structure (B1).

## **EXCAVATIONS**

The 2008 excavations continued in the looter's trench (Suboperation A) in an effort to assess the chronology of Group B, and determine the structure floors relationship to the plaza floors for the establishment of a clear occupation history. A second unit (Suboperation Q) was opened on the backside of Structure B1 to locate either the corner or back wall. Suboperation R was opened after bedrock was reached in Suboperation Q. Suboperation R is an expansion to the southwest of Suboperation Q. It is hoped that architecture will be reached when this unit continues in the 2009 field season. A more detailed description of the operations will follow in a more complete report. The forthcoming report will include descriptions of the suboperations; their sizes, locations, and stratigraphy as well as a summary and discussion of the excavation data. A photograph of the looter's trench in Structure B1 is included in this report, along with a map of Groups A and B.

## **PRELIMINARY SUMMARY**

The 2008 excavations continued with the 2009 field season in the looter's trench unit of structure B1, suboperation A, however, bedrock was not reached. The back and side walls of the trench are collapsing due to the tree fall on the top east face. The walls will be stabilized for the 2009 season so that the excavation can continue. A new unit, suboperation Q, was opened on the back or southeast corner of structure B1. This unit was opened to locate either the corner or the back wall of the structure B1. From suboperation Q, a bedrock depth of approximately 30cm was established. Suboperation R was an expansion to the west from suboperation Q. It is hoped that architecture will be found in this suboperation during the 2009 field season. Ceramic and lithic analysis is in progress at this time.

\* A version of this paper was previously submitted as part of a report (2008) to the Institute of Archaeology, Belmopan, Belize.

## REFERENCES CITED

Chmilar, Jennifer

2005 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.

Hyde, David M., Fred Valdez, Jr.

2007 Overview of Activities at the Medicinal Trail Site for the 2006 Season. In *Research Reports from the Programme for Belize Archaeological Project*, edited by Fred Valdez, Jr., pp. 15-22. Occasional Papers 8, Mesoamerican Archaeological Research Laboratory. The University of Texas at Austin.





## **OPERATION 15: BERM STRUCTURES AND WATER MANAGEMENT AT MEDICINAL TRAIL (RB 62), BELIZE**

Erin E. Gill, University of Cincinnati

### **INTRODUCTION**

The following report summarizes the 2008 research and excavations of Operation 15 at the Medicinal Trail site (RB 62). The Medicinal Trail site has been extensively investigated over the course of several field seasons (Hyde and Atwood 2007). The site of the Medicinal Trail including the area where Operation 15 is located was extensively surveyed and mapped in 2005. The main focus of our investigation at Operation 15 was to determine the possible function(s) of the associated structures and features, specifically, as they pertain to the management of water. Scarborough (1993:1) defines water management as the “interruption and redirection of the natural movement or collection of water by society.” By investigating the various niches of rural Maya life we find ourselves investigating how the Maya stored enough water to support both agriculture and a growing population. The Maya developed several water management features to both redirect and capture water for consumption and agriculture (Scarborough, 2003). Berm features have been found at variety of sites throughout the Rio Bravo Conservation Area at sites like La Milpa and Guijarral (Hughbanks, 1995). The goals of the 2008 field season were (1) to determine whether or not the internal framework of structure A constitutes it as a berm feature at Medicinal Trail, (2) surmise whether or not Structure A was used as water management feature and (3) to examine the relationship between Structure A, Structure B and an associated southeastern depression.

### **EXCAVATIONS**

First we established a grid and examined the area where Structure A adjoined Structure B with Suboperations A, B, and C. These three suboperations were important in determining the soil depth and composition where Structures A and B met (Figure 1). Suboperation A was a 1 x 2 meter unit located at the southern most end of structure A. Suboperation A not only helped identify where the end of Structure A was located but it also revealed an eastward facing slope that followed the natural course of the limestone bedrock. Crystalline limestone cobbles ranging in size from 10-25 centimeters in length were present in the southern and eastern profiles of Suboperation A. The presence of large roots from a nearby hardwood tree located on the southwestern edge of Suboperation A may have contributed to the churned appearance of the soils.

Suboperation B was located on Structure B a peninsular shaped feature which adjoined Structure A at its southern end and along its eastern exposure. Suboperation B revealed fairly shallow soils reaching bedrock after approximately 30 centimeters of excavation. The limestone bedrock in Suboperation B continued sloping eastward from Structure A. Suboperation B also revealed an alignment of poorly preserved limestone cobbles

varying in sizes along the southern profile which were a continuance of the limestone cobbles found along the bedrock in the eastern profile of Suboperation A.



Figure 1. Structure A as viewed from northwest to southeast pre-excavation.

Suboperation C was placed on the most eastern exposure Structure B. In Suboperation C we found another group of stone alignments which followed a similar pattern as those found in the southern profiles of Suboperations A and B. Suboperation C revealed a poorly preserved eastern wall associated with what was left of Structure B. After exposing the most eastern point of Structure B it was followed by a precipitous drop which was excavated to bedrock. This increased degree of slope could possibly explain how water was directed and drained into the southeastern depression associated with the Structures A and B, respectively.

Suboperation D was a 1 x 6 meter trench that was located along the middle axis of structure A. The main goal was to get a glimpse into the internal architecture of structure A and to discern its possible functions over time. The excavation of Suboperation D was extremely slow going due to the sheer size of many of the construction cobbles as well as the amount of earth that was being moved. Suboperation D was primarily constructed

out of crystalline limestone and chert construction cobbles which ranged in size from 5 cm to 45cm in diameter (Hughbanks, 1995).

Suboperation E was a 2 x 2 meter unit placed at the most northeastern exposure of Structure A. The goal of Suboperation E was to identify the northern corner of Structure A. The soil within Suboperation E was highly organic with intricate root mats and decomposing stumps. The presence of decaying stumps and the lack of aligned construction cobbles could possibly explain why it was so poorly preserved being forced out of place by subsequent tree falls. This suboperation did however yield a large amount of ceramics and lithics which helped establish the chronology for Structure A.

### **Excavations of the Eastern Depression: Suboperations F, G, and H**

The eastern depression is located directly southeast of Structures A and B. The excavations of the eastern depression were undertaken in order to investigate the possible function or functions that this small depression could have served in past. The excavations within the eastern depression were to examine if there was a relationship between both the eastern depression and Structures A and B.

Suboperations F and H

Suboperation F was a 1 x 3 meter unit which bisected the eastern depression at its widest point from east to west. It is important to note that Suboperation F was placed directly across from the eastern wall of Structure B. We placed Suboperation F there because we wanted to see if the steeply sloping bedrock identified in Suboperation C continued to slope steadily towards the eastern depression. Suboperation H was a 1 x 2 meter unit which was placed at the eastern end of the depression creating a T- shaped pattern. The excavation of Suboperation H yielded several concentrations of rim and body sherds which were mixed into the soil matrix that was directly associated with the limestone bedrock.

### **Suboperation G**

Suboperation G was 1 x 1.5 meter unit placed at the southwestern most point along the eastern depression along the southern profile of Suboperation F. Suboperation G was fairly sterile in terms of artifacts and it was not comprised of the same organic soils found associated with Structure A. The initial walking survey of the southeastern depression revealed several cut marks on the limestone in the southern profile of the eastern depression. These rather abrupt cut marks may have indicated that this area was at one point in time used as a quarry for the Maya living at Medicinal Trail. Evidence of quarried limestone came from both the profiles of the depression but also from a large poorly preserved limestone boulder which was removed from Suboperation F. The soil composition of Suboperation G was heavily influenced by the limestone parent material of the bedrock. There were several areas of decomposed leached limestone within Suboperation G probably due the high annual precipitation and the proliferation of secondary growth of the semi-tropical forest (Sharer, 2006).

## **DISCUSSION AND CONCLUSIONS**

We began excavations at Operation 15 with an open mind and were aiming to generate some interesting results from our original three goals of the field season. The investigations at Operation 15 have suggested that structure A has the internal and external features of a berm. This structure may have been used to divert water both east and west off an almost roof-like construction. Structure B was more puzzling, but I would posit that this feature could have been used to slow and direct the flow of water towards the southeastern depression. The southeastern depression probably had multifunctional and utilized in several ways throughout the Maya occupation. I would suggest that southeastern depression was quarried and that portions of the limestone were removed and used in the construction of berms, mounds, and other related features found to the east of Operation 15. The archaeological investigations and subsequent ceramic analysis of Operation 15 revealed that this particular area was occupied mainly in the Late Classic period. This vital information helps place the archaeological investigations into both a temporal and a socio-economic framework that adds to the overall knowledge of the site itself.

## **ACKNOWLEDGEMENTS**

I would like to thank Dr. Fred Valdez, Jr., for his unwavering support of the field work at Medicinal Trail with equipment, labor, and advice. I would like thank to my advisor at the University of Cincinnati Dr. Vernon Scarborough for his expert advice and support throughout my graduate career. Thanks to, Dr. Lauren Sullivan and David Hyde for their adept analysis and advice on the array of artifacts collected in the field. I would like to thank my colleagues and friends from University of Cincinnati, Jeffrey Brewer and Jason Whitaker for their advice and assistance in my field research. Thanks to my four field assistants Erika Blecha, Lauren Hahn, Ashrae Scott and Adam Stephens for their assistance and contagious good humor. Finally, I would like to thank the students and volunteers of the 2008 U.T./UMass Summer Field School whose hard work and cheerful dispositions made working in the rainy season both productive and enjoyable.

## **REFERENCES CITED**

Hughbanks, Paul J.

- 1995 Research at Gujarral (RB 18), 1994. In *The Programme for Belize Archaeological Project 1994 Interim Report*, edited by R. E. W. Adams and Fred Valdez, Jr., pp. 73-78. The Center for Archaeological and Tropical Studies and The University of Texas at San Antonio.

Scarborough, V.L.

- 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*, edited by V.L. Scarborough and

B. L. Isaac, pp. 17-69. *Research in Economic Anthropology, Supplement 7*. JAI, Greenwich.

2003 *The Flow of Power: Ancient Water Systems and Landscapes*. SAR Press, Santa Fe, New México.

Sharer, Robert with Loa Traxler

2006 *The Ancient Maya, Sixth Edition*. Stanford University Press, Stanford, California.



## **MEDICINAL TRAIL ARCHAEOLOGY: INVESTIGATIONS AT OPERATION 13**

Maia Dedrick, University of Michigan- Ann Arbor

### **INTRODUCTION**

Operation 13 is about 50 meters south of Operation 12, or Group B, of Medicinal Trail (Figure 1). Operation 13 consists of three structures (northern, western, and southern) that share a common basal platform and the immediate off-platform surroundings. Excavation of the operation began in the 2007 field season, during which five test pits were opened to identify number of construction sequences, length of occupation, residential function, and basic spatial layout. Initial conclusions included that these structures made up a household that had been constructed in the Late Classic period.

### **OBJECTIVES AND METHODOLOGY**

The primary objective of this study was to understand the role played by Operation 13 in the economic activities of Medicinal Trail. In northwestern Belize, hilltop agricultural sites consisted of large, economically prosperous household groups surrounded by smaller household groups associated with visible agricultural features (Lohse 2004). The role of these smaller households in the agricultural production of hilltop sites has not been studied in depth. Understanding their role will be crucial for reconstructing the economic and political landscape of northwestern Belize.

In the tropics, “many of the productive activities that differentiate households socioeconomically from one another transpired out-of-doors”, including tool manufacture and food processing (Johnston and Gonlin 1998:159). All excavations of this household were conducted off the major structures. Off-mound excavation can help to identify activity areas, trash disposal areas and contents, and garden areas, which in turn can lead us to a clearer understanding of the social and economic dynamics within a household (see Killion 1990). By examining the artifacts associated with productive or consumptive activities at the household, comparing these artifacts with those of other households at the site, and identifying the types of plant material present at the site, I want to determine whether residents of this household specialized in agricultural production and the extent to which they depended on resources from outside the household.

Excavation units were placed along a platform wall that had been identified during the 2007 season. Additional excavation units were placed perpendicularly to this wall in order to explore the surface of the platform and determine the location of the opposing wall of the platform. Test units were placed around the outside of structures to test for soil thickness and presence of midden debris (Figure 2). Soil samples were taken from most lots and floated using the Flote-Tech machine located in the Texas field camp. Groundstone and some chert tools were cleaned for starch grain and phytolith analysis.



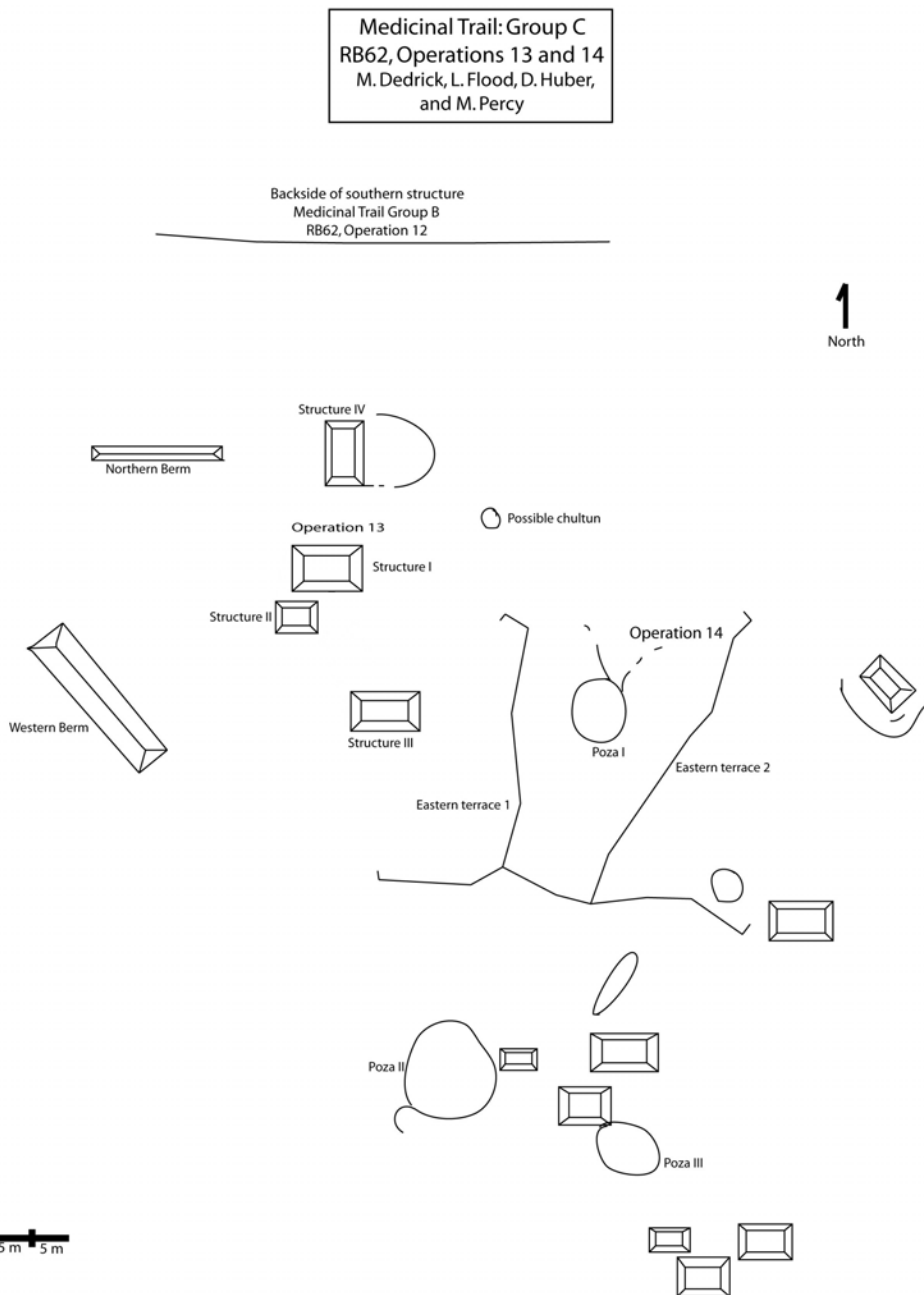


Figure 1. Area South of Operation 12, Medicinal Trail.

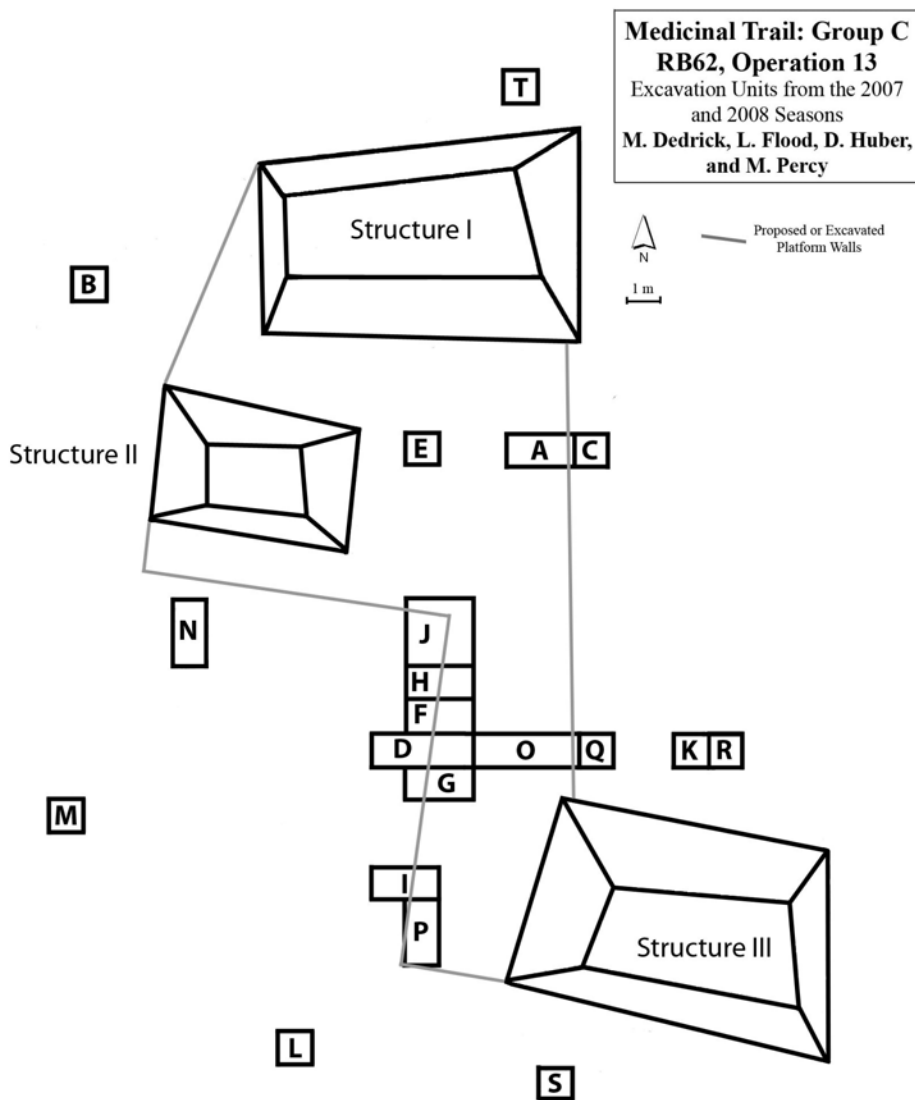


Figure 2. Excavation Units at Operation 13, 2007 and 2008 Seasons.

## EXCAVATIONS

### Suboperations F, G, H, and I

I am grouping these excavation units together because together they exposed a length of platform wall on the southwest edge of the platform (Figure 3) and shared similar stratigraphy. The goal in exposing this wall was to identify any trash deposits that may have been swept or dropped off the side of the platform, yielding evidence of productive or other activities. In addition, in exposing a large expanse of the wall, I was more likely to observe any idiosyncrasies in the construction or residential history of the household that would provide special insights into decisions or motivations of the household's residents, something that test pitting would have been unlikely to do. These suboperations consisted of excavations exposing the surface of the platform and following the edge of the wall down to bedrock to expose any trash deposits, floor surface, or fill materials.

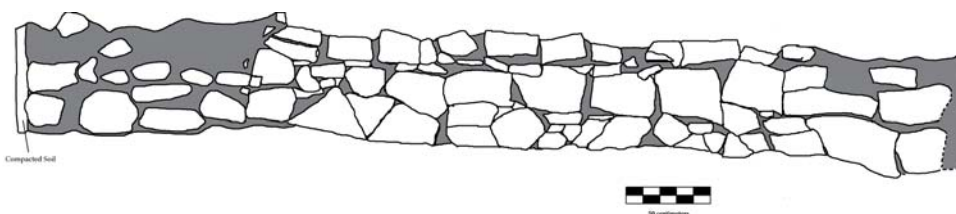


Figure 3. Southwest Wall of Platform, Suboperations D, F, G, H, and J.

### *Suboperation F*

Suboperation F, a 1 x 2 meter unit oriented east to west, continued to follow the wall found in Suboperation D as it ran northeast. It was excavated in two lots to bedrock, a depth of about 75 cm. The eastern section of the unit was on top of the platform, so it was only excavated to expose the platform, at a depth of about 35 cm. This suboperation was excavated in only two lots because the stratigraphy had been studied thoroughly in Suboperation D. In addition, maps of this suboperation included all four layers (Figure 4). Lot 1 consisted of both humus, which was a moist, dark brown with many organic inclusions about 10-20 cm thick, as well as a layer of limestone collapse, about 15 cm thick on top of the platform and 45 cm thick west of the platform, although this layer sloped with the contour of the collapse, as did the humus resting above it. The limestone collapse layer consisted of humus with limestone rock inclusions that were between 5 and 20 cm across. This lot was closed when ceramic sherds and lithics were found at a greater density. On top of the platform, the lot was closed when the matrix became a lighter color. We encountered a stone alignment on top of the platform about 50 cm back from the edge of the wall, as we had found in Suboperation D (Figure 5). Lot 2 began with an artifact-rich layer to the west of the platform at a depth of about 50-60 cm beneath the surface and ended at bedrock, for a thickness of about 30 cm. Within this lot were again two layers. Above, there was a layer of cultural debris and small chert pieces, with ceramic sherds dominating the assemblage. The layer underneath, approximately 70 cm

below the surface, consisted of significantly fewer sherds and limestone pieces, although some ceramics were found on the bedrock and there were more chert cobbles.

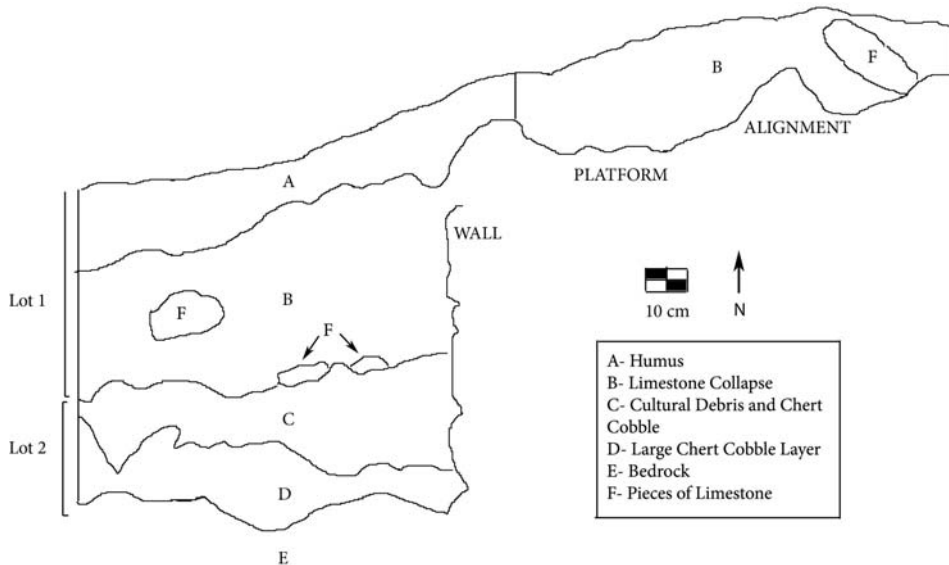


Figure 4. Northern Trench Wall, Suboperation F. (Profile prepared by Daniel Elliott, Amanda Hernandez, and Maia Detrick).

### ***Suboperation G***

Suboperation G, a 1 x 2 meter unit oriented east to west and following the wall found in Suboperation D to the southwest, shared the stratigraphic layers of Suboperations D and F. Like Suboperation F, it was excavated in two lots.

### ***Suboperation H***

Suboperation H, a 1 x 2 meter unit oriented east to west, followed the wall northeast of Suboperation F. The apparent stratigraphic layers of this suboperation were similar to those in the previously described suboperations exposing the southwest platform wall. A different excavation approach was taken in these lots. Lot 1 was the humus and limestone collapse layer on top of the expected platform, while Lot 2 was the humus and limestone collapse west of the expected platform wall. This was done in order to be able to take two separate soil samples that might provide evidence of any remains on the platform, for example. It also allowed us to move through the dirt to the west of the wall more quickly than we otherwise would have been able. Lot 1 was about 20 cm thick, while Lot 2 was about 60 cm thick. Lot 1 was closed when the matrix turned a light tan color, where we had left the previous excavations along the top of the platform. At that point, Lot 3 was opened beneath Lot 1 on top of the platform. This layer was 10 cm thick and was closed upon the exposure of a plaster surface on the platform between the edge of the platform

and the alignment of rocks, which continued about 40 cm back from the edge of the wall (Figure 6). Under Lot 2, Lot 4 was opened west of the platform. It was about 20 cm thick above bedrock. Again, large rim sherds were found near the top of this cultural layer, while only chert cobbles were found over the bedrock.

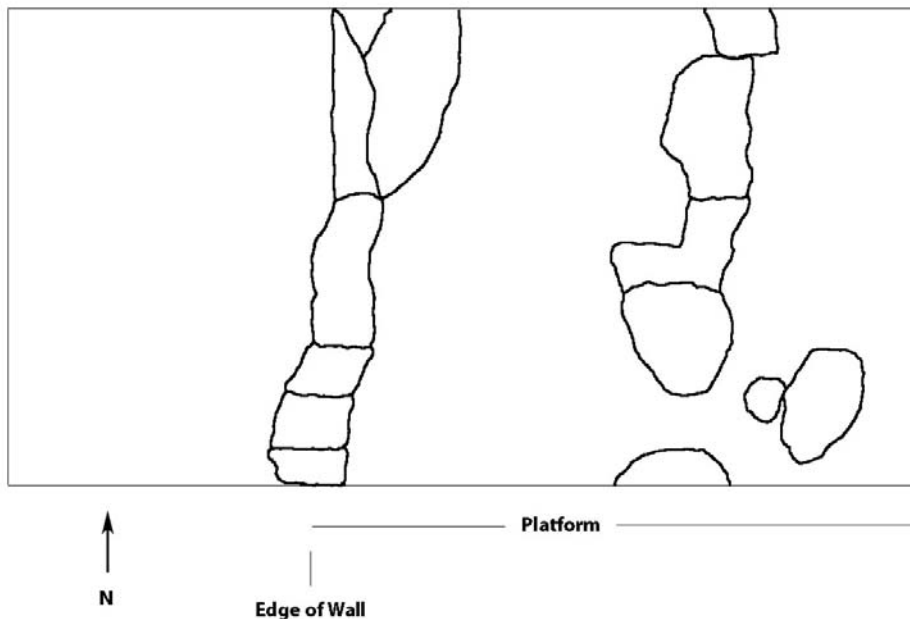


Figure 5. Plan Map, Suboperation F. (Plan prepared by James Burnes, Victoria Menchaca, and Maia Dedrick).

### ***Suboperation I***

Suboperation I was a 1 x 2 meter unit, oriented east to west, located three meters south of Suboperation G. This space was left unexcavated in order to avoid a large tree and its roots. Because the wall was moving southwest, this unit was moved a meter further west than the other units discussed here. The stratigraphic layers resembled those of other wall suboperations, described above. Both alignments, however, were running closer to true north than the wall exposed in the other suboperations. Because Suboperation I was located off to the side of Structure III, I propose that the wall squared off at this point in order to run parallel to this structure.



Figure 6. Photograph of Platform, Suboperation H.

### **SUBOPERATION P**

Suboperation P was a 1 x 2 meter unit oriented north to south. It was located south of the eastern end of Suboperation I. The goals of the excavation were to follow the wall found in Suboperation I and determine the location of the southwest corner of the platform.

Suboperation P was excavated in four lots. The first lot was a humic layer with chert and limestone fallout about 15 cm thick. It was closed when what seemed to be the surface of the platform, consistent chert cobbles, was found. Because the soil in the southern half of the unit was darker, Lot 2 consisted of excavations on only the southern half of the unit. The lot was a mix of chert stones and limestone fallout about 5 cm thick. The lot was closed when five large limestone rocks were encountered. The rocks were not aligned in any way, and therefore appeared to be some kind of fallout or fill material. Lighter soil was found in the northern 140 cm of Lot 2. Lot 3 was opened to investigate the area of lighter soil in the northern 140 cm of the unit. The goal was to expose any wall stones present. The lot was about 15 cm thick and limestone blocks indicating the edge of the wall were found in the northern meter of the lot, on the western edge. Now that these stones had been found, Lot 4 was opened in the southern 60 cm in order to try to find a continuation of these stones at the western or southern edges of the unit. Unlike previous wall excavation units, a mix of large chert stones, more than 25 cm across, were interspersed with the limestone stones of a similar size. These rocks seemed to run along the western edge of the unit and then ran along the southern edge of the unit and even into the eastern edge of the unit. These could have been blocks used to reinforce the corner construction. We did not find the corner of the wall. If I had time, I could have extended the excavation one meter further and probably would have found it.

### **SUBOPERATION j**

Suboperation J was opened as a 2 x 2 meter unit north of Suboperation H with the goal of identifying the corner at which the north-south wall met the east-west running wall. I wanted to know whether the two walls were constructed simultaneously or as two separate constructions. I had a hard time identifying the wall in Suboperation A in the northeastern corner of the platform, which I expected would be the same construction event as this wall I was planning to identify by approaching from the south. By moving along the north-south wall I thought this wall would be easier to define. I was interested in whether the artifacts found at the edge of this perpendicular wall would differ from those along the areas of the wall I had excavated earlier.

Lot 1 was humus about 10 cm thick. It contained much more chert than the suboperations described above. Burnt limestone pieces from 4 to 15 cm were found. There were also small limestone cobbles only 2 cm or so across. The lot terminated when the soil changed from humus to a dry, silty soil. Lot 2 was contained the southern half of the suboperation. This split was made because the southern half seemed to contain a boundary of large limestone blocks whereas the north contained chert. Also, the soil in the southwest of the unit was still moist and dark, so I suspected this southern lot would not come down on the

wall running east to west. Lot 2 was about 15 cm thick. The platform was identified in the eastern end of this lot. Lot 3 was meant to consist of any soil on top of the platform surfaces. However, I postponed its excavation in order to work along the wall, moving north until the intersecting wall was found. Lot 4 was opened in order to achieve this. A seeming alignment was found later to be simply fallout from the wall, which was found about a meter further north from the alignment eventually found. Lot 5 was opened in order to collect the cultural material down to bedrock and as far north as the suspected alignment. The suspected alignment was fallout.

Lot 6 consisted of excavations moving north, again in search of a wall. The limestone collapse and cultural layers found along the wall in other areas was not easy to distinguish here so it was excavated together. The lot was closed when many limestone rocks were encountered in a seemingly vertical arrangement. To the east was a soil of a slightly lighter brown color that did not contain the collapse of the surrounding matrix. Above this was a layer of small limestone pieces that looked like it could have been eroded plaster. Lot 7 was opened in order to take out that limestone and expose the lighter soil underneath it, in case it was a feature. This area was about 20 cm in diameter and about 70 cm deep. The possibly eroded plaster appeared just to be small limestone pieces. The soil matrix was a different color because it appeared that the large limestone chunks to the left had fallen over this area, keeping collapse out of Lot 7.

Lot 8 was opened in order that the excavator could follow the wall northward again in search of an east to west wall. The wall was finally distinguished when a cut stone was found running perpendicular from the north running wall on bedrock. The upper levels of the wall were collapsing outward. The wall was found about 30 cm south of the northern boundary of the suboperation (Figure 7). The excavations of this lot extended to bedrock, but it was noted by the excavator that 90% or more of the artifacts were found at the bottom of the lot near bedrock, resembling the cultural deposits found earlier at the edge of the wall. The wall running west was in worse condition. It was clear that the east-west running wall was older because the north-running wall ran up to that wall and met it with a layer of packed soil, suggesting later construction. The construction also seemed different. Lot 9 cleared out the remaining collapse in front of the east running wall, but terminated upon the recognition of a dense artifact layer before bedrock. Lot 10 consisted of that dense artifact layer with compacted soil and chert cobbles just south of the wall running west to east. The excavator came down to a plaster surface above bedrock. It was realized that this plaster extended over the corner between the two walls. On the same level as the floor, but in an area where it was completely eroded, a *mano* and another egg-shaped groundstone tool were found (Figure 8). There were also two pieces of obsidian found in this layer. While it is unclear whether the groundstone was left on the plaster floor or used as construction fill, it would make sense it was on the floor, because it was almost thicker than the construction fill. Dense chert cobbles were found above bedrock in the areas where the plaster floor had eroded.





Figure 7. Suboperation J, Plan View, Closing.



Figure 8. Mano, Suboperation J

## **SUBOPERATION O**

Suboperation O was a 1 x 3 meter unit oriented east to west. It continued excavations east from Suboperation D. The goal of the excavation was to expose a length of platform surface in order to collect any artifacts that may have been left and to find the other side of the platform, defining the platform's shape and any distinct construction events. By moving perpendicularly to the wall excavations, I hoped this excavation would be most effective in providing data about the spatial layout of the household.

Suboperation O was excavated in a single lot consisting of humus and limestone tumble. The lot was about 30 cm thick. In addition to limestone collapse, large ceramic pieces were found, particularly along the southern edge of the unit, in the center. The lot was closed when a layer of chert cobbles was found, approximately 13-19 cm across, which ran across the unit and presumably made up the surface of the platform. On the easternmost and westernmost ends of the unit were found alignments of large limestone chunks running north to south. The alignment on the west seemed to be a continuation of what had been found in Suboperation D, while the alignment on the east suggested that with further investigation the other edge of the platform might be found.

## **SUBOPERATION Q**

Suboperation Q was a 1 x 1 meter unit just east of Suboperation O. It was opened in order to examine the possible platform wall from the alignment in Suboperation O. With excavations east of Suboperation Q already in process, this suboperation would complete a cross-section of the courtyard and help to define its spatial layout.

Lot 1 was humus and limestone collapse, as usual. The layer was about 15 cm thick. At the closing of the unit, the soil turned reddish-brown and silty. An alignment was found along the western edge of the suboperation. Small, 2-8 cm, chert cobbles met up with the alignment, presumably forming a surface. Lot 2 was opened to excavate through the cobble and determine whether there was a wall beneath the alignment that had been found on the western edge of the unit. The lot was about 50 cm thick and terminated at bedrock. A wall was found in the western end of the unit (Figure 9). The cobble that was removed from the unit was artifact-rich and included many lithics and ceramics. Because this cobble and cultural layer was placed over bedrock and led right up to the wall, it is possible that it was used to expand the living surface for residents of the household.

## **SUBOPERATIONS K and R**

### **Suboperation K**

Suboperation K was opened in order to get a sample of the stratigraphy in front of Structure III. In Suboperation K, the bedrock was found to plunge downwards, as described below. Suboperation R was opened to continue to define this possibly modified bedrock.

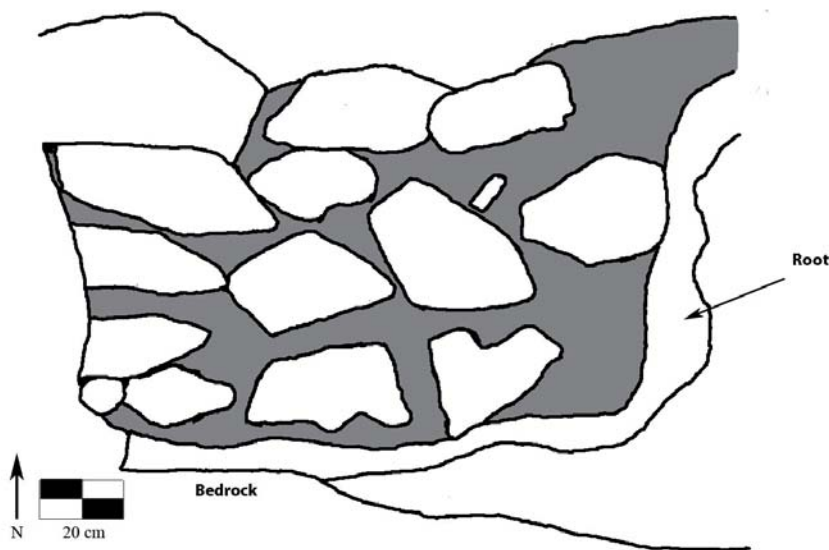


Figure 9. Platform Wall Profile, Suboperation Q. (Profile prepared by Hal Baillie, Juliet Amos-McGraw, and Daniel Appel).

Suboperation K was a 1 x 1 meter unit east of Suboperations D, O, and Q. It was excavated in two lots. Lot 1 included humus and dense chert cobble, which began immediately below ground surface. The lot was about 50 cm thick in the southern end of the unit and about 90 cm thick in the north. As depth increased, chert cobbles became more densely packed and less limestone was encountered. The soil was dark and moist, although there was not a lot of soil because of the density of cobble. There were some larger stones greater than 20 cm across. Many ceramics and especially lithics were found. Lot 1 was terminated when bedrock was found in the western portion of the unit and the soil in the eastern portion of the unit became darker. Lot 2 was opened to remove the remaining soil, chert, and artifacts, exposing bedrock, which slanted downward on the eastern side of the unit. I was interested in how deep the bedrock extended and whether this might be a possible water management feature such as a drain carved into bedrock (as found by Lohse and Findlay 2000). In order to explore this possibility, Suboperation R was opened.

### **Suboperation R**

Suboperation R was a 1 x 1 meter unit just east of Suboperation K. We were short on time and the laboratory was having a hard time getting through all the lithics from Suboperation K, so we were advised not to sift the matrix. Soil, cobble, and artifacts were placed in a pile next to the trench as it was removed, and it was all put back into the unit

during the backfilling process. Suboperation R was excavated in two lots. Lot 1 was about 75 cm thick. This included a humic layer about 10 cm thick followed by chert cobble starting about 10 cm down. At about 30 cm below the surface there seemed to be larger cobbles. We closed the lot because there was more limestone including larger blocks starting at 70 cm below the surface. At this point the soil also became much darker. Lot 2 terminated at bedrock with a thickness of about 100 cm at the deepest point (Figure 10). The bedrock seemed to step downwards a couple times before it leveled out at the bottom of our unit. It could possibly extend deeper to the east of this unit. There were fewer artifacts in Lot 2. The soil color was dramatically different in this lot.

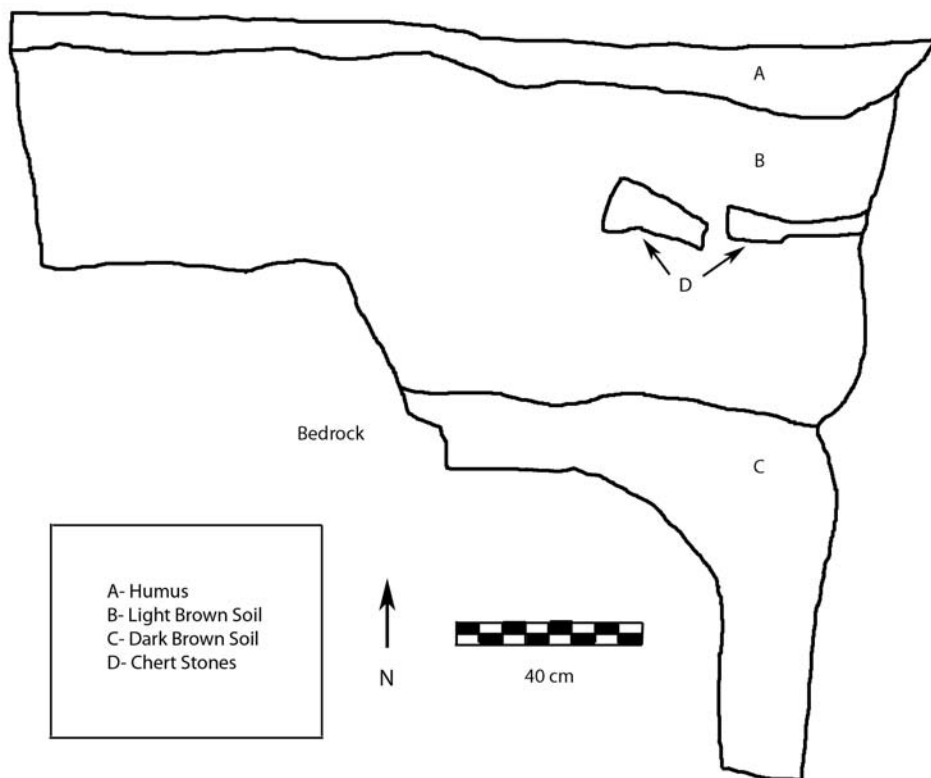


Figure 10. Northern Wall Profile, Suboperations K and R. (Profile prepared by Hal Baillie, Nadya Prociuk, and Travis Cornish).

#### **SUBOPERATIONS L, M, N, S, and T**

These suboperations were opened around the periphery of the structures in order to test for midden deposits, bedrock features and depth, and stratigraphy. Bedrock was

surprisingly shallow in these units (as thin as 25 cm), making it unlikely that gardening activities occurred in these areas.

## **DISCUSSION**

This investigation has begun to explore the role of the residents of Operation 13 in agricultural production at Medicinal Trail. This preliminary investigation will allow for a better understanding of productive and consumptive activities that took place within the household, change in space use and activity areas over time, and botanical evidence present at Operation 13.

Excavations were successful in determining an opposing wall, in Suboperation Q, to the wall followed in Suboperations F, G, H, and J. A basic understanding of platform space and changes through time was achieved. Spaces around the courtyard began to be explored, yielding evidence of possible midden scatter and variety in bedrock depths.

There seem to have been three construction phases of the platform (Figure 11). The first platform construction supported Structures I and II and provided some courtyard space that created a rectangle with these structures. The second phase included the platform underlying Structure III and a narrow “hallway” attaching that platform to the earlier platform construction. In the third phase, cobble was packed against the eastern wall of the “hallway” up to the level of the platform. The extent of this cobble layer is unclear at this point. The second construction phase seems to have been of the highest quality, with walls of orderly, cut limestone.

The fill from Suboperations K, Q, and R was extremely artifact-rich. Other areas of high artifact density included lithics on the southwest end of the platform in Suboperation P as well as a high ceramic density, two obsidian blade fragments and two groundstone tools found in Suboperation J, in the corner between two walls. It was difficult to tell whether these deposits were left on surfaces or were contained within construction fill. If the groundstone tools rested on a floor just off the platform, they may have been discarded with expectation of future use. It will be important to assess the relationship between these artifacts and Structure II, which appears to have been ancillary due to its square platform, and which may have been used predominantly for food preparation (Gonlin 2004:234).

Although I have not yet fully incorporated lithic or ceramic analysis data into my interpretation of the excavations, project ceramicist Dr. Lauren Sullivan (UMass-Boston) identified Early Classic ceramics in Suboperation K, Lot 2. This suggests that the rapidly descending bedrock feature identified in Suboperations K and R had already been covered with a dense cobble fill prior to the construction of the household’s platform. Further incorporation of lithic and ceramic analysis data will provide more information about the use and construction of space within the household.

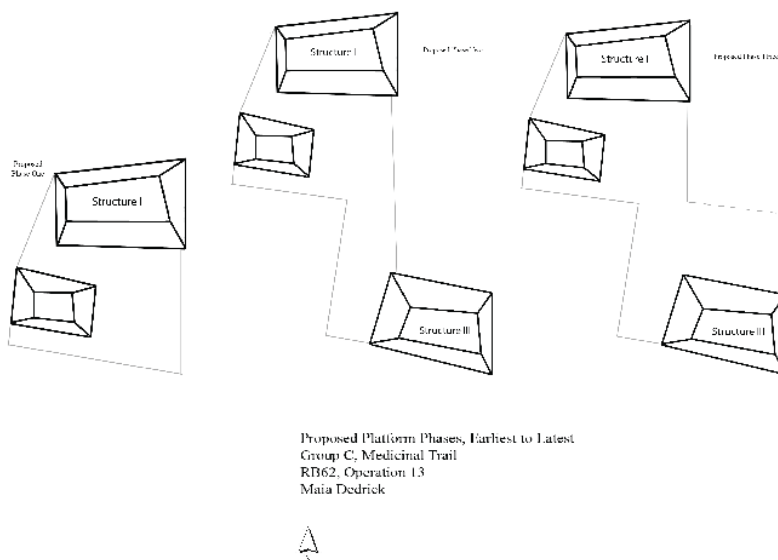


Figure 11. Proposed Platform Construction Phases, Operation 13.

Continuing research includes analyzing the macrobotanical samples (light fractions only) from Operation 13 as well as the starch grain and phytolith washes from the groundstone tools of Suboperation J. This information may offer additional evidence about the surrounding environment, local agriculture, and activities performed at the household. I will also compare my artifact data with those from a similar household at the site (Whitaker 2007) and other households at Medicinal Trail. These analyses will be available in my thesis beginning late spring 2009.

There is a great deal of research left to be done at Operation 13, including excavation of the structures, additional outside spaces, and adjacent water management features. As study continues at Medicinal Trail, there will be additional opportunities to compare households at the site and assess their relationships. This research will allow us to understand better the agricultural production of the region.

## REFERENCES CITED

- Gonlin, Nancy  
2004 Methods for Understanding Classic Maya Commoners: Structure Function, Energetics, and More. In *Ancient Maya Commoners*, edited by Jon C. Lohse and Fred Valdez, Jr., pp. 225-254. University of Texas Press, Austin.
- Johnston, Kevin J. and Nancy Gonlin  
1998 What do Houses Mean? Approaches to the Analysis of Classic Maya Commoner Residences. In *Function and Meaning in Classic Maya Architecture*, edited by Stephen D. Houston, pp. 141-185. Dumbarton Oaks, Washington, DC.
- Killion, Thomas W.  
1990 Cultivation Intensity and Residential Site Structure: An Ethnoarchaeological Examination of Peasant Agriculture in the Sierra de los Tuxtlas, Veracruz, Mexico. *Latin American Antiquity* 1:191-215.
- Lohse, Jon C.  
2004 Intra-Site Settlement Signatures and Implications for Late Classic Maya Commoner Organization at Dos Hombres, Belize. In *Ancient Maya Commoners*, edited by Jon C. Lohse and Fred Valdez, Jr., pp. 117-145. University of Texas Press, Austin.
- Lohse, Jon C. and Patrick N. Findlay  
2000 A Classic Maya House-Lot Drainage System in Northwestern Belize. *Latin American Antiquity* 11:175-185.
- Whitaker, Jason M.  
2007 Household Archaeology at Operation 11, Medicinal Trail Site. MA thesis, Department of Anthropology, University of Cincinnati.

## **EXCAVATIONS AT THE MEDICINAL TRAIL SITE (2008): OPERATION 14\***

Madelyn Percy, The University of Texas at Austin

### **INTRODUCTION**

Under the auspices of the Programme for Belize Archaeological Project, excavations at Operation 14 of Medicinal Trail were completed. Operation 14, to the south of Group B (Operation 12) and almost directly east of Group C (Operation 13, excavated by Maia Dedrick), includes a series of proposed water management features that were first mapped in the 2007 field season.

Although there are several features that might have served as water management modifications, the only excavations were carried out on a cistern, titled Poza I through the course of excavations. Few artifacts were found in Poza I, however, the primary purpose of the excavation was to have detailed profile maps of the walls of two long trenches and to gain a better understanding of how the limestone bedrock weathered or was modified.

### **EXCAVATIONS**

A single, 1 x 4 meter trench was excavated in the 2007 season after mapping was completed (Hyde and Atwood 2007). This trench, which ran due west from the measured center of the poza, established a basic soil stratigraphy and provided the first look at the bedrock morphology.

Excavations this season focused on establishing a north-south and east-west trench, with the eastern component of the east-west trench extending from the eastern edge of the 2007 trench. This 1 x 3 meter unit completed the east-west trench, providing a profile across the entire depression. A more detailed soil profile map was drawn and the bedrock was carefully cleaned to facilitate detection of modification. No obvious bedrock modification was observed, however, several lithic flakes and ceramic potsherds were collected.

The north-south trench was divided into two units, a 1 x 6 meter southern unit and a 1 x 4 meter northern unit. Like the east-west trench, the north-south trench's long walls were carefully profiled, paying special attention to changes in soil type. Colour, texture, and mineral content of the soil, as determined by hand lens in the field, were all recorded and mapped, with the profile intervals falling every ten centimeters. This interval allows for greater control of the profile maps, which leads to greater clarity in sedimentation patterns.

Besides the two trenches, a one by one (1x1) meter unit was opened to clarify an anomaly in the bedrock and eleven shovel test pits were dug at 30 degree intervals (0°, 30°, 60°



etc.), six meters from the centre of the depression. The purpose of the shovel test pits was twofold: to establish a local gradient of the limestone, which was accomplished and to determine whether artifact density analysis would be useful in the study. Presently, this second purpose proved to not yield information of much importance.

### **SUMMARY COMMENTS**

Based on the excavations and subsequent lab work and artifact analysis completed in 2008, as well as the map completed in 2007, the original hypothesis that the depression may have been used as a cistern seems probable.

\* A version of this paper was previously submitted as part of a report (2008) to the Institute of Archaeology, Belmopan, Belize.

### **REFERENCES CITED**

Hyde, David M. and Kirsten Atwood with comment provided by Maia Dedrick and Madelyn Percy

2007 Overview of 2007 Investigations at the Medicinal Trail Site. In Programme for Belize Archaeological Project: Summary Report of the 2007 Investigations, edited by Fred Valdez, Jr., pp. 12-20. Report submitted to the Institute of Archaeology, National Institute of Culture and History, Belmopan, Belize.

## **RB70: THE 2008 INVESTIGATIONS**

Robyn L. Dodge, The University of Texas at Austin

### **INTRODUCTION**

The 2008 field season was the initial season (Operation 1) at the Maya site of RB 70. Under the overarching goals of the Programme for Belize Archaeological Project (PfbAP), immediate and long-term research questions directed at RB 70 will include several topics of Maya archaeology. Maya settlement patterns, site function, social and political status, as well as relationships and interaction with nearby settlements are all long-term research questions directed at RB 70. Goals of the 2008 season at RB 0 included establishing a working site map, and testing courtyard spaces for construction and occupation chronologies. To this regard, the 2008 investigations focused on survey and identification of associated mounds, mapping the immediately lying structures and conducting test excavations of the courtyard areas. The duration of the 2008 field season at RB 70 was three weeks.

### **MAPPING**

A majority of the 2008 season was utilized creating a site map. Courtyard groups, structures, and individual cultural features were measured and mapped by tape and compass method. Currently four major groups have been identified (Groups A-D), including a single raised platform courtyard (Group A), two possible stelae features (within Group D), and a possible altar feature (within Group C). With exception to a modest assemblage in Group D, all currently identified structures at RB 70 appear to be oriented on a north-south axis with a compass orientation approximately 18° east of north. While the modest assemblage south of Structure D4 are oriented to about 65° east of north.

### **SITE LAYOUT**

Group A consists of a 15 x 22.5 m restricted access, raised platform courtyard with five mounds, identified as structures A1 – A5. Group B consists of a 23.4 x 28 m open courtyard associated with four mounds identified as structures B1 – B4. Group C has two identifiable mounds numbered structures C1 – C2, a possible altar feature, and encompasses an open courtyard space of approximately 30 x 40 m. Group D, as it is currently identified, is difficult to interpret in terms of spatial layout with regard to its relation to Group C. Group D consists of the southern most identified and mapped structures. As it is currently understood, Group D comprises three main structures and a modest platform assemblage south of Structure D4. Group D also contains two possible stelae features and covers an area of 55 x 50 m.

## **EXCAVATIONS**

Excavations were conducted in the courtyard spaces in order to gain a sampling of the construction and occupation chronology. Data generated from the courtyard excavations also proved useful in estimations of the socioeconomic status of the community, based on material culture. All subops were established according to a grid system independent to each courtyard group and aligned to magnetic north. The grid system will provide control and maintenance for long-term research at RB 70. A total of four subops were completed during the 2008 season within the courtyard spaces of Group A and Group B.

Suboperations A and B were associated with Group A and Suboperations C and D were associated with Group B. All suboperations were placed within the interior courtyard space and at the base of structures. More excavations are needed to conduct the same types of sampling in Groups C and D. Excavation methodology at RB 70 for the 2008 season was concerned with identifying cultural features (such as plaster floors or occupation levels) and excavating to bedrock.

Suboperation A began as a 1 x 1 meter unit. After three lots, Suboperation A was converted to a 1 x 2 m unit in order to establish a grid system within Group A and aligned on a north-south axis. Suboperation A was oriented to magnetic north. All elevations for Suboperation A were taken below Datum A. This suboperation was established with the intention of obtaining a chronological sampling of the courtyard space, possibly identify multiple construction phases and determine if Group A consisted of a single or multiple occupation.

A preserved plaster floor level was not identified during excavation, but examination of the unit profile suggests that the plaster floor was approximately 10-20 cm below the surface. What remained of the plaster floor was poorly preserved. The acidity of the soil, and abundance of tree roots may have contributed to decomposing the plaster floor. There were a total of 14 lots excavated, and the unit was terminated upon reaching bedrock. Artifact assemblage associated with Suboperation A consisted of ceramics, lithics, seashells, obsidian, obsidian blades, bifaces and green stone.

Suboperation B was a 1 x 1 m unit located three meters south of Suboperation A. This unit was established to continue sampling of the courtyard space. Its location was chosen with the intention of gathering data related to the entranceway of Group A's raised platform and association with Structure A1. A plaster floor level was poorly preserved and estimated to be approximately 20cm below the surface. This is consistent with the plaster floor level identified in Subop A at the same level. A total of nine lots were excavated in this unit and the unit was terminated after reaching bedrock.

Subop C was a 2 x 1 m unit established at the base of Structure B4 in Group B. Subop C consisted of four lots and all elevations were taken below Datum C. Subop C was established in relation to the Group B grid. Excavation methodology was aimed at

identifying an occupation level and excavating to bedrock. Along with the most commonly excavated material culture (lithics and ceramics), an eccentric chert artifact was also recovered in Subop C. The bedrock was relatively shallow, about 30-50 cm below the surface. There was no indication of a plaster floor in this unit. The bedrock was uneven and a high concentration of artifacts was recovered from the western portion of the unit where the bedrock was deeper.

Suboperation D was a 2 x 1 m unit established at the base of Structures B1, B2, and B3. All elevations were taken below datum D. Subop D was excavated to bedrock in six lots. Amongst the expected finds, such as ceramics and lithics, a fragmented ceramic figuring was also recovered in SubopD.

### **PRELIMINARY CONCLUSIONS**

Preliminary ceramic analysis suggests the site has an occupation of the Late Classic. Material culture such as greenstone, obsidian blades, and eccentric flint artifacts help estimate the socioeconomic status of the community to be mid-level elite.

Data is needed that calculates RB 70 and its distance to major sites such as La Milpa, La Milpa East, and Medicinal Trail. This is important to determine site interactions and political influence. Research will be conducted that examines the topography in and around the RB 70 site boundaries.



## EXCAVATIONS AT LA MILPA EAST AND THE AGUADA LAGUNITA ELUSIVA: THE 2008 FIELD SEASON

Estella Weiss-Krejci, University of Vienna, Austria

In May 2008 excavations were conducted at two different locations within the Rio Bravo conservation area. Investigations took place at La Milpa East (RB LME), which was discovered and mapped by Gair Tourtellot in the late 1990s. The site is located on the LaMAP (*La Milpa Archaeological Project*) eastern survey transect, 3.5 km east of the La Milpa center. Previous excavations at this site were carried out by Everson and myself (Everson 2003; Tourtellot, Everson and Hammond 2003; Weiss-Krejci 2002, 2007; Weiss-Krejci and Sabbas 2002) (Figures 1 and 2).

The second location of our research was Lagunita Elusiva, an *aguada*, which is situated a little over 5 km east of La Milpa (Figure 1) and can be reached by a trail that branches off to the east from the PfB Lagunita trail. Lagunita Elusiva was mapped by Tourtellot in 2002; a sediment core was taken by Dunning in 2003 (personal communication).

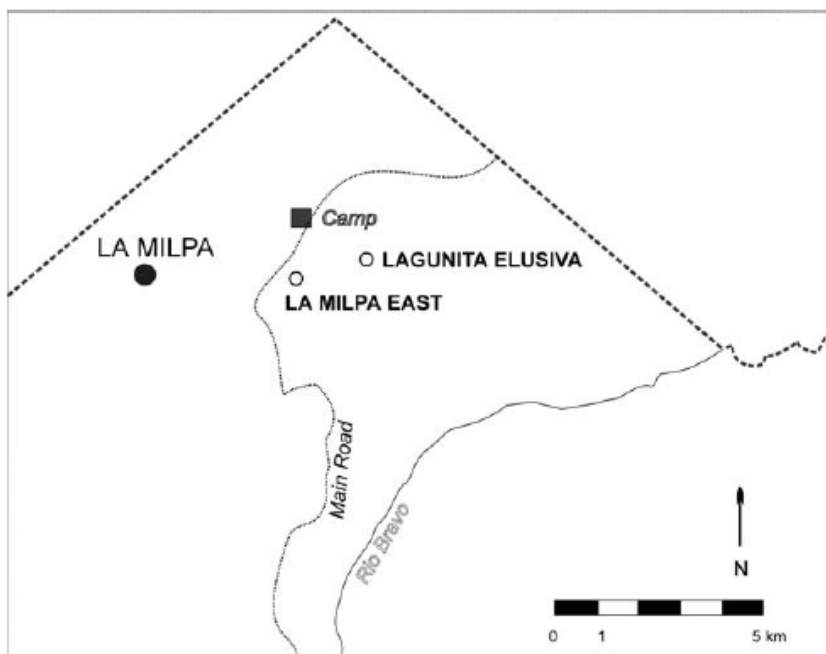


Figure 1. Programme for Belize, location of La Milpa East and Lagunita Elusiva

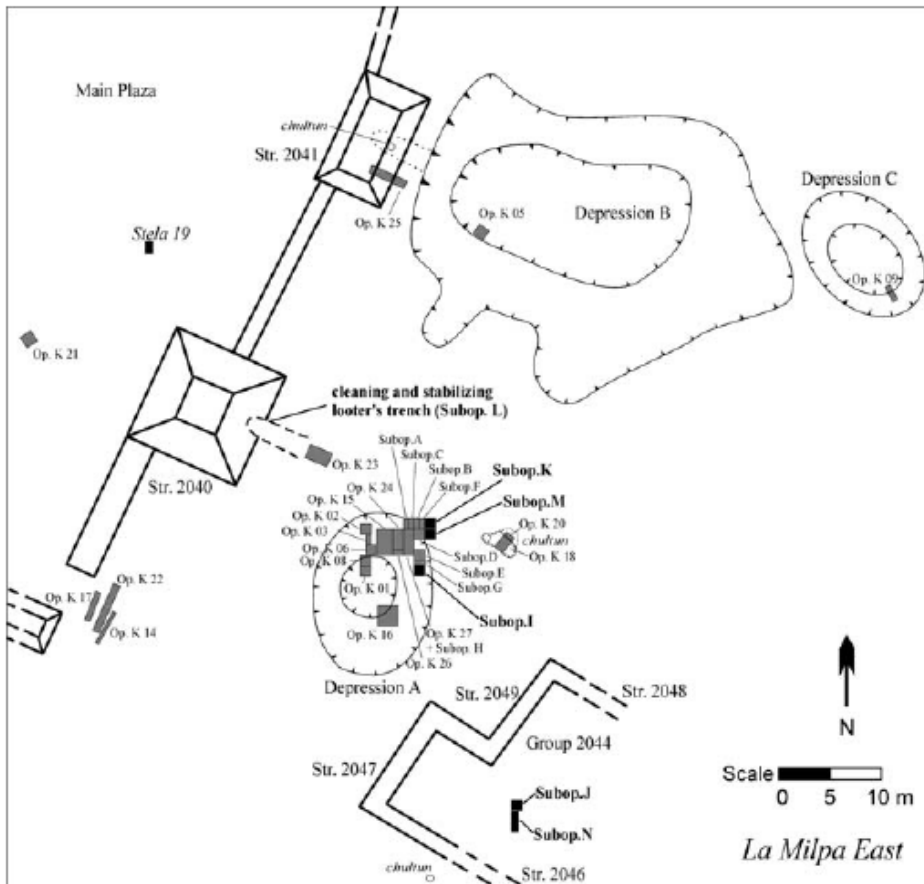


Figure 2. Excavations in the eastern part of La Milpa East (2008 excavations in black).

Because of tropical storm Arthur, which hit Belize on May 29, and the heavy rain which followed in its aftermath our field season was cut short. Lagunita Elusiva, which had been almost dry before the storm filled up quickly and our four excavation units were flooded (RB Lagunita, Op. 1, Subops A-D). The rain also prevented further work at La Milpa East. As a result of the storm, none of our excavations could be finished (RB LME, Op. 1, Subops I, J, K, M, N). At La Milpa East we were able to backfill our units.

### RESEARCH AT LA MILPA EAST (RB LME, OP. 1)

The main objectives of the 2008 season at La Milpa East were to continue excavations in Depression A, to investigate a small group to the south of Depression A (Group 2044) and to clean the looters' trench in Structure 2040 (Figure 2).

### **Depression A, Subops I, K, and M:**

Excavations in Depression A started in 2000 under the La Milpa Archaeological Project (LaMAP), continued in 2002 (LaMAP) and were resumed in 2007 under the PfBAP (Figure 2). Past research has shown that Depression A served as a reservoir in the Early Classic and was filled in with a rubble and sherd layer in the Late Classic (Sagebiel 2005; Weiss-Krejci 2004; Weiss-Krejci 2007; Weiss-Krejci and Sabbas 2002). In 2002 Weiss-Krejci encountered an apsidal platform on the northeastern depression rim, which we continued to investigate in 2007 and 2008 (Figure 3). For this purpose Subop G (partially excavated in 2007) was reopened and three new 1x1m units to the south and east were excavated (Subops I, K, and M). The excavations in Subops I and M did not proceed down to bedrock. In Subop I (nine lots) we encountered similar gravel and sherd accumulations as in Ops. K01, K08, K15, K16 and Subop G (Figure 4). In Subop K (three lots) we hit the bedrock on the depression rim approx. 20cm below topsoil (Figure 5). In Subop M (eight lots) we reached a plaster-like layer, identical to the layer of Lot 7 in Subop D (Weiss-Krejci 2007). The two rocks that appeared at the bottom (Figures 3 and 6) form part of Feature 2 (Weiss-Krejci 2007) (for details concerning lot characteristics see Table 1).

As in the past we found a large quantity of materials (Table 3). Of special interest are the remains of a plant fiber thread from Subop I, Lot 3, which is attached to an enigmatic rectangular piece of dried mud (Figures 7 and 8).

### **Courtyard Group 2044, Subops J and N:**

Group 2044, which consists of Structures 2045-2049, is located 20m south of Depression A. Previous excavations by Everson (Op. G-36, 37, and 39) revealed only Late Classic Ceramics (Sagebiel 2005: 695). We opened a 1 x 1 m test pit in the courtyard (Subop J, 11 lots) (Figure 2) and encountered a Late Classic cobble platform (Lots 4 to 6) (Figures 9 and 10). Below the cobbles we found an earlier feature, possibly part of a wall or some other construction (Lot 12, Figure 11). Its date cannot be determined yet. Because the Late Classic cobble platform in Subop J also contains Early Classic ceramics (personal communication by Laura Levi who dated our ceramics) it could well be that the Late Classic cobble platform covers an Early Classic structure. In order to better investigate Lot 12 in Subop J, we extended the unit to the south (Subop N, 2 m x 70 cm, two lots excavated, Figure 12). Unfortunately there was no time to excavate it sufficiently.

For lot characteristics see Table 2. For materials see Table 3. Special artifacts from these suboperations include a piece of daub and a piece of hematite.

### Looters' trench in Structure 2040 (Subop L):

Another objective of the 2008 season was to clean the looters' trench in Str. 2040 (the temple), which is located fifteen meters northwest of Depression A. Our workmen stabilized the looters' trench with wooden stakes. Unfortunately all we managed to do was to collect two sherds (Table 3) and to draw a preliminary profile.





Figure 3. Apsidal platform in Depression A at La Milpa East (2008 excavation units Subops. I, K and M).



Figure 4. La Milpa East, Depression A, Subop. I, top of Lot 6

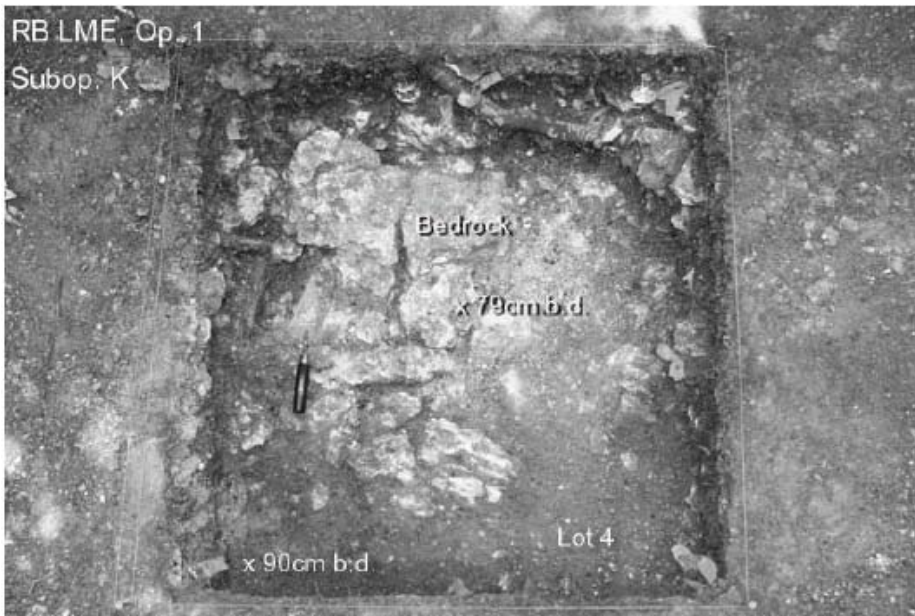


Figure 5. La Milpa East, northern rim of Depression A, Subop. K

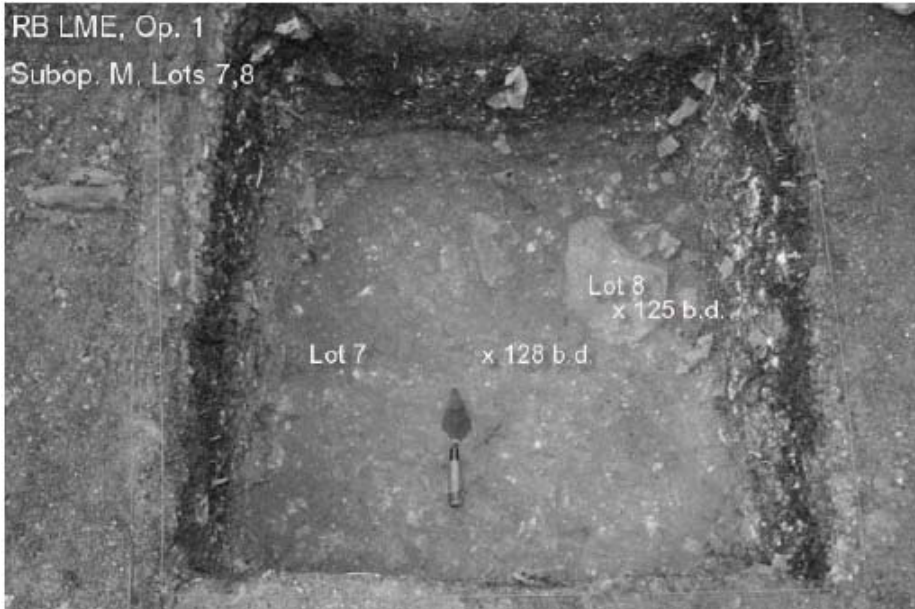


Figure 6. La Milpa East, Depression A, Subop. M, inside Feature 2, Lots 7 and 8.

Table 1. RB-LME 2008, Op. 1, Depression A, Subops. I, K, M, lot properties.

Subop.- Lot	Lot characteristics	Lot location/relationship	Lot depth	Lot opened	Lot closed
I-1	topsoil	above Lot 2	12cm	May 18 2008	May 18 2008
I-2	dark soil, eroded sherds, some limestone	below Lot 1, above Lot 3	5cm	May 19 2008	May 19 2008
I-3	dark soil, many limestone pieces, burned limestone, many small to medium sized sherds (artificial layer)	below Lot 2, above Lot 4,5	3cm	May 19 2008	May 20 2008
I-4	some sherds large and well preserved, high quantity of limestone (artificial layer)	below Lot 3, beside Lot 5, above Lot 6	7cm	May 20 2008	May 20 2008
I-5	pit filled with grey sherds, limestone	beside Lot 4, 6, 7, below Lot 3	?	May 21 2008	May 22 2008
I-6	grey layer, very small eroded sherds, large quantity of very small limestone pieces	below Lot 4, beside Lot 5, above Lot 7	4cm	May 21 2008	May 21 2008
I-7	similar to Lot 6, but slightly larger sherds	below Lot 6, beside Lot 5, above Lot 8	7cm	May 22 2008	May 23 2008
I-8	grey layer, medium sized sherds, eroded	below Lot 7, above Lot 9	7cm	May 23 2008	May 26 2008
I-9	grey layer, water layer?, snail with limescale	below Lot 8	?	May 26 2008	May 26 2008
K-1	old backdirt	above Lot 2	12cm	May 21 2008	May 21 2008
K-2	topsoil	below Lot 2, above Lot 3	11cm	May 21 2008	May 21 2008
K-3	soil above bedrock	below Lot 3, beside Lot 4	7cm	May 22 2008	May 22 2008
K-4	brown soil, lot not yet started	below Lot 2, beside Lot 3	?	May 22 2008	not excavated
M-1	old backdirt	above Lot 2	8cm	May 22 2008	May 22 2008
M-2	topsoil	below Lot 1, above Lot 3	9cm	May 22 2008	May 22 2008
M-3	brown soil	below Lot 2, above Lot 4	7cm	May 23 2008	May 23 2008
M-4	brown soil, some stones	below Lot 3, above Lot 5	6cm	May 23 2008	May 23 2008
M-5	many small stones, brown grey soil, grey snails	below Lot 4, above Lot 6	17cm	May 26 2008	May 26 2008
M-6	grey-white soil	below Lot 5, above Lot 7	13cm	May 26 2008	May 26 2008
M-7	plaster-like gray layer	below Lot 6, beside Lot 8, above Lot 9	4cm	May 26 2008	May 26 2008
M-8	rocks, belong to Feature 2	below Lot 6, beside Lot 8, above Lot 9	?	May 26 2008	not excavated
M-9	not yet started	below Lot 7	?	May 26 2008	not excavated

Table 3. RB-LME 2008, Op. 1, materials encountered.

Subop. - Lot	Sherd no.	Sherd weight (g)	Chert no.	Chert weight (g)	Land snails no.	Snail weight (g)	Other
I-1	41	55	10	73	64	17	
I-2	78	146	11	39	81	32	
I-3	303	419	49	142	78	36	1 groundstone tool, 1 biface frag., hematite, fiber thread
I-4	170	387	36	76	20	10	
I-5	20	44	5	8,4	1	0,5	
I-6	31	25	4	11	5	0,5	
I-7	82	101	5	12	9	0,5	
I-8	54	102	10	13	28	6	
I-9	27	35	8	11	22	8	snail with limescale
J-1	20	98	2	25	197	43	
J-2	83	390	19	165	284	92	1 obsidian blade
J-3	76	580	26	595	246	57	1 obsidian blade, 2 groundstone tools, 1 daub
J-4	84	278	29	665	19	3	
J-5	90	384	12	75	38	9	
J-7	82	430	13	671	14	3,5	
J-10	4	11	2	9	2	0,4	
J-11	0	0	1	1	0	0	
K-1	94	134	31	98	89	22	1 obsidian blade
K-2	46	108	5	9	115	30,5	
K-3	28	67,5	5	12	54	15	
L-1	2	28	0	0	0	0	
M-1	79	125	20	57	42	12	
M-2	17	23	3	25	86	31	
M-3	78	254	15	93	119	50	
M-4	155	326	17	84,5	53	16,5	
M-5	72	197	40	184	25	10	
M-6	1	8	18	165	19	3,5	1 groundstone tool
M-7	8	30	14	251	15	4,5	
N-1	165	864	48	694,5	850	336	
N-2	215	947	74	1112	182	92	1 piece of hematite

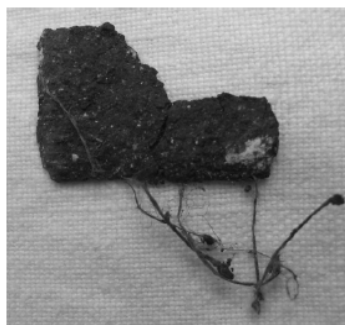
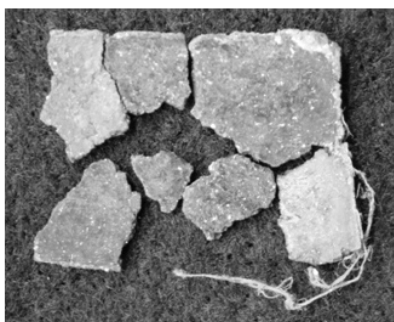


Figure 7 and 8. Plant fiber thread attached to rectangular dried mud (RB LME, Subop. I, Lot 3). Left: front; Right: back.

Table 2. RB-LME 2008, Op. 1, courtyard of Group 2044, Subops. J and N, lot properties.

Subop.-Lot	Lot characteristics	Lot location/relationship	Lot depth	Lot opened	Lot closed
J-1	Topsoil	above Lot 2	2cm	May 20 2008	May 20 2008
J-2	brown soil	below Lot 1, above Lot 3	4cm	May 20 2008	May 20 2008
J-3	brown soil with limestone pieces	below Lot 2, above Lot 4	15cm	May 20 2008	May 21 2008
J-4	small cobbles (upper part of platform)	below Lot 3, above Lot 5, 6	3cm	May 21 2008	May 22 2008
J-5	soil between large cobbles (upper part)	below Lot 4, beside Lot 6, above Lot 7	6cm	May 22 2008	May 22 2008
J-6	large cobbles (lower part of platform)	below Lot 4, beside Lot 5,7 above Lots, 8,9,10,11	16cm	May 22 2008	May 22 2008
J-7	soil between large cobbles	below Lot 5, beside Lot 6, above Lot 8,9,10,11	10cm	May 22 2008	May 23 2008
J-8	northeast quadrant, soil above Lot 12	below Lot 7, beside Lots 9,10,11, above Lot 12	1cm	May 23 2008	May 23 2008
J-9	northwest quadrant, soil above Lot 12	below Lot 7, beside Lots 8,10,11, above Lot 12	1cm	May 23 2008	May 23 2008
J-10	soutwest quadrant, soil above Lot 12	below Lot 7, beside Lots 8, 9,11, above Lot 12	1cm	May 23 2008	May 23 2008
J-11	southeast quadrant, soil above Lot 12	below Lot 7, beside Lots 8,9,10, above Lot 12	1cm	May 23 2008	May 23 2008
J-12	cobbles, part of an earlier structure	below Lots 8,9,10,11	?	May 23 2008	not excavated
N-1	Topsoil	above Lot 2	5cm	May 26 2008	May 26 2008
N-2	brown soil below topsoil	below Lot 1	6cm	May 26 2008	May 26 2008

### EXCAVATIONS AT LAGUNITA ELUSIVA (RB LAGUNITA, OP. 1)

When we first visited Lagunita Elusiva (on May 18), it still retained water in its deepest section. The moist areas were covered by a thick carpet of free floating fern *Salvinia minima* (Figure 13). On the *aguada* surface we found relatively fresh prints of large animals (probably tapirs). We collected two complete glass bottles (the bottles still have to be dated but probably are of the 20<sup>th</sup> century). When we returned nine days later (on May 27), the water had almost disappeared from the *aguada* and the carpet of green fern was much smaller (Figure 14). Two days later, (on the afternoon of May 29) the first raindrops started to fall and we had to stop our investigations. (Approximately half an hour after the rain had started we noticed a snapping turtle *Chelydra serpentina rossignoni* leaving the water). After the storm (on June 3), we returned to Lagunita Elusiva once more and saw that within five days - and following 217mm of precipitation - the *aguada* had filled up entirely. The water level had risen by 135cm (Figure 15).

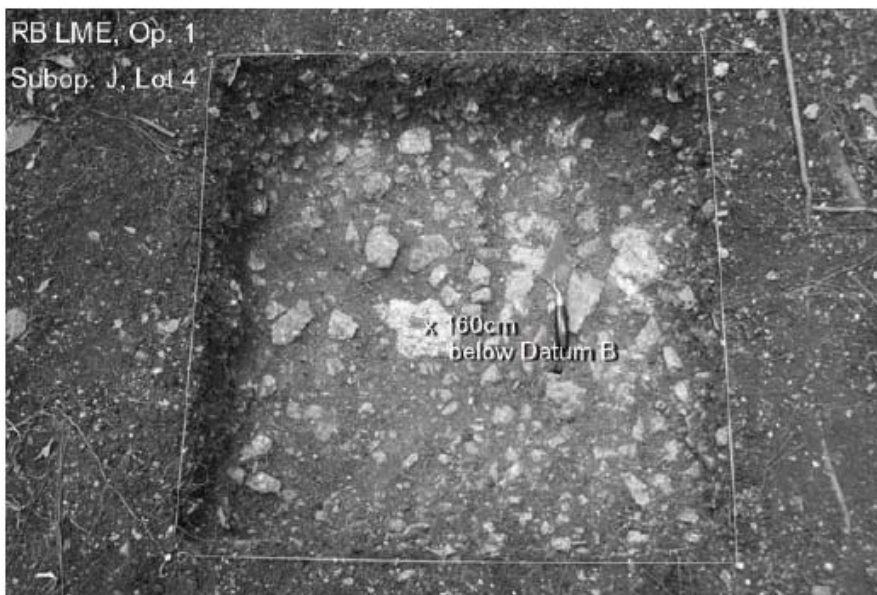


Figure 9. La Milpa East, courtyard of Group 2044, Subop. J, top of Lot 4 (cobble platform upper layer).



Figure 10. La Milpa East, courtyard of Group 2044, Subop. J, top of Lot 6 (cobble platform lower layer).



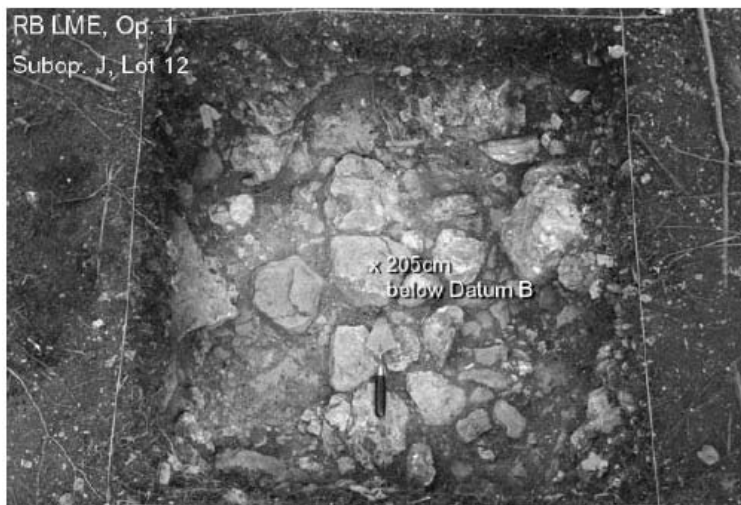


Figure 11. La Milpa East, courtyard of Group 2044, Subop. J, top of Lot 12.



Figure 12. La Milpa East, courtyard of Group 2044, Subop. N, top of Lot 2





Figure 13-15. Lagunita Elusiva. Top: May 18, the watery part in the center is covered with green floating water fern (*Salvinia minima*); Middle: May 27, almost dry one week later on, the fern carpet is much smaller; Bottom: June 3, after 5 days of rain.

In the three days of our excavations, between May 27 and 29, we opened four units: Subop A, (1 x 1.5 m, four lots), Subop B (1 x 2 m, eight lots), Subop C (1 x 1.5 m, two lots) and Subop D (1.5 x 1.5 m, two lots) (Figure 16). None of the units could be finished. We also mapped the *aguada* using tape and compass. We paid special attention to the carpet of green fern and the changes in the water level (see north-south profile in Figure 16).

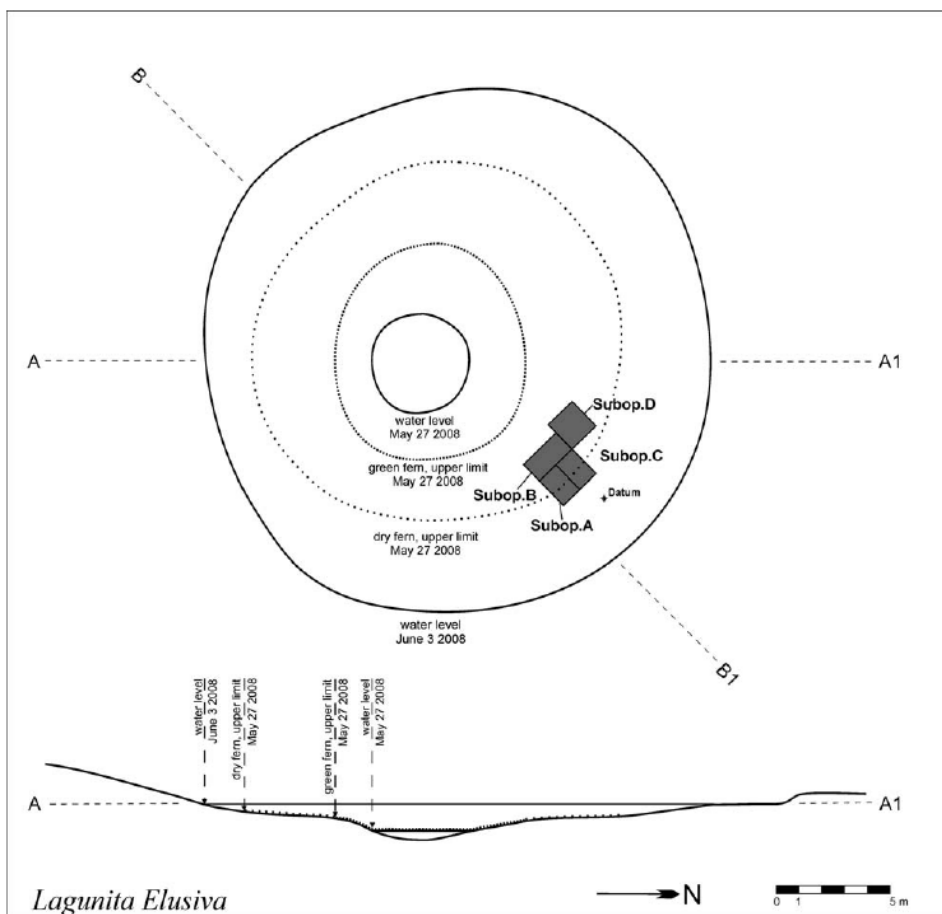


Figure 16. Plan and north-south profile of aguada Lagunita Elusiva and location of our four excavation units.

### Summary of Excavation Results

The excavations revealed that the *aguada* had been heavily modified by the ancient Maya. Before starting our excavation we had noticed large cobbles in several parts of the *aguada* surface. After excavating in the northeastern area (Subops A and B) a cobble

feature became visible between five and ten centimeters below topsoil (Lot 2, Figure 17). In order to get a better idea of the extent of the cobble layer we enlarged our excavation and opened Subops C (Figure 18) and D. While the cobble layer was present in all units, the lower right corner of Subop A and the adjacent right half of Subop B did not contain cobbles at this level. Instead, this area was filled with a thick layer of clay and high quantities of chert debitage. While we did not excavate beyond Lot 4 in Subop A, we took the excavation down in Subop B (Figure 19). Below the clay (Lot 3) in Subop B there was a layer of gleyed clay (green) mixed with cobbles and what appeared to be entirely crumbled ceramics (Lot 5). Then we dug through a layer of charcoal (Lot 6) and a layer of gray gley (Lot 7). Approximately 75cm below the surface we encountered a cobble layer (Lot 8) (Figure 19). Since we had reached the water level and it started to rain we were not able to further expose this layer. Therefore at present it is not possible to tell whether these cobbles are part of Lot 2 (possibly the lower part of a cobble lined guidance system to direct water out of the *aguada*) or form part of an earlier construction.

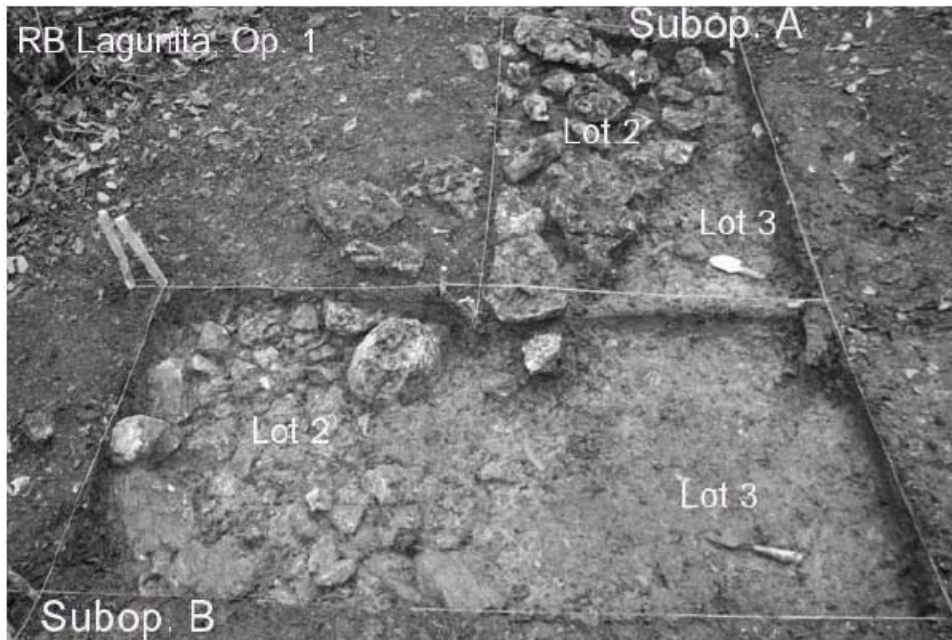


Figure 17. RB Lagunita, Op. 1, Subops. A and B, Lots 2 and 3.

Details concerning lot depths, lot characteristics, number of artifacts etc. have been summarized in Table 4. No preserved ceramics or obsidian were found in the *aguada*. In Subop B there was a wooden log approximately 30 cm below the surface (Lot 4). We collected parts of it. We also took soil samples. Chert artifacts (Figure 20) and high

quantities of tiny debitage suggest that Lagunita Elusiva not only served as a water reservoir but was probably also used for working lithic materials (see Brewer 2007).

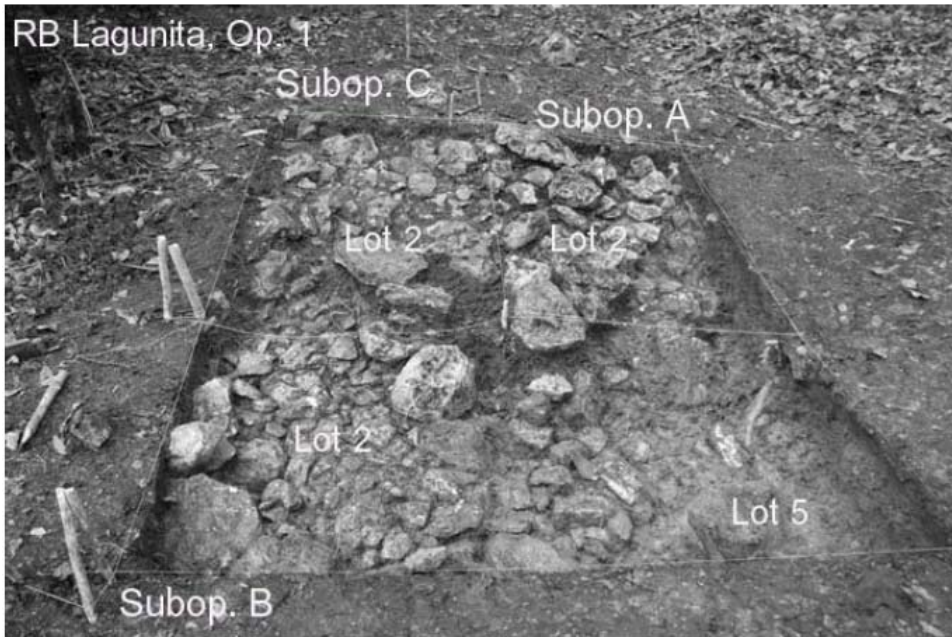


Figure 18. RB Lagunita, Op. 1, Subops. A, B, and C, Lots 2 and Subop. B, Lot 5.

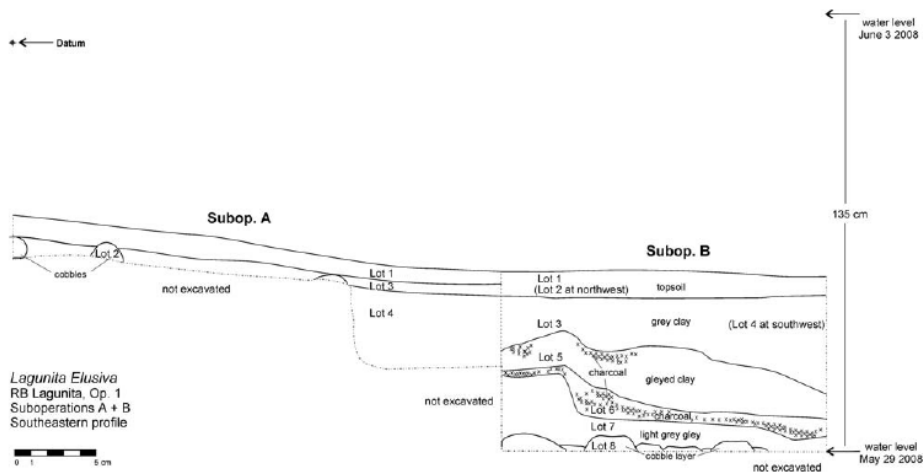


Figure 19. RB Lagunita, Op. 1, southeastern profile of Subops. A and B.

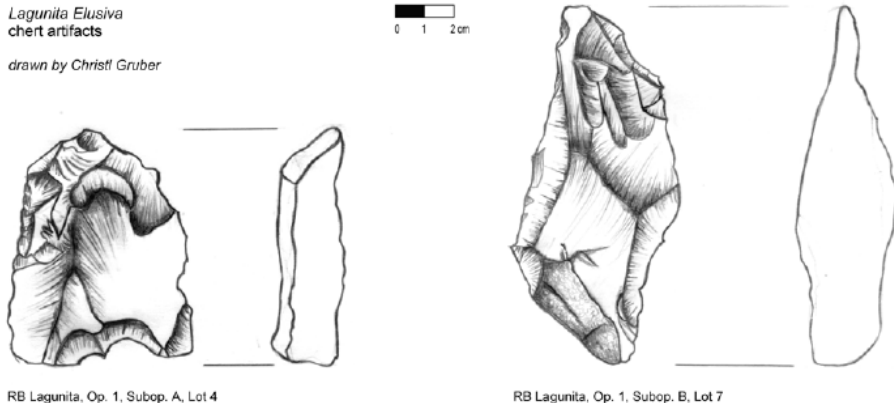


Figure 20. Chert from Lagunita Elusiva.

#### ACKNOWLEDGEMENTS

The 2008 work was performed under permits extended to Fred Valdez Jr. for the Programme for Belize Archaeological Project. I would like to thank the Belize Institute of Archaeology for permitting these studies and Fred Valdez Jr. for inviting us to work at PFB. I would like to thank Christl Gruber and Sarah Kiszter for their hard work, Laura Levi for her ceramic expertise and our workmen Joselino Monte and Fernando Castro.

#### REFERENCES CITED

- Brewer, Jeffrey L.  
2007 *Understanding the role of small depressions in ancient Maya water management at the Medicinal Trail Site, Northwest Belize*. MA Thesis, University of Cincinnati.
- Everson, G  
2003 *Terminal Classic Maya settlement patterns at La Milpa, Belize*. PhD.Dissertation, Dept. of Anthropology, Tulane University, New Orleans.
- Sagebiel, K. L.  
2005 *Shifting Allegiances at La Milpa, Belize: A Typological, Chronological, and Formal Analysis of the Ceramics*. PhD. Dissertation, University of Arizona, Tucson.
- Tourtellot, G., III, G. Everson, and N. Hammond  
2003 Suburban Organization: Minor Centers at La Milpa, Belize. *Perspectives on Ancient Maya Rural Complexity*, edited by Gyles Iannone and Samuel

Connell, pp. 95-107. Monograph 49, The Cotsen Institute of Archaeology, University of California, Los Angeles.

Weiss-Krejci, Estella

2002 Excavations at La Milpa East. La Milpa Archaeological Project. 2002 Report, K-Operations. Boston University.

2004 Investigación de las Depresiones Pequeñas en al área de la Milpa, Belice. *XVII Simposio de Investigaciones Arqueológicas en Guatemala 2003*, pp. 1061-1074. (Laporte *et al.* eds.). Museo Nacional de Arqueología y Etnología, Guatemala.

2007 Excavations in Depression A at La Milpa East (RB LME, Operation 1). Programme for Belize Archaeological Project. 2007 Report.

Weiss-Krejci, Estella and T. Sabbas

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



## **PLAN FOR PHASE TWO RESEARCH AT WARI CAMP (RB 56): HOUSEHOLD, NEIGHBORHOOD, AND WARD IN THE PREHISPANIC MAYA CITY.**

Laura J. Levi, The University of Texas at San Antonio

### **INTRODUCTION**

Phase Two archaeological research at Wari Camp is designed to clarify the nature of three intersecting organizational spheres within the ancient Maya community: the household, the neighborhood, and the ward. Investigations began in the summer of 2008 and will continue for an estimated six additional field seasons. The current work builds upon five previous seasons of survey and mapping at the site. This earlier research explored the spatial distributions of residential and administrative architecture and pointed to the existence of series of prehispanic Maya social groupings of varying organizational scale and complexity. Three kinds of social units emerged with special clarity and I have used the labels household, neighborhood, and ward to underscore apparent differences in their socio-spatial reach. The goal of Phase Two investigations is to find material indicators of the activities that: 1) discriminated household formations one from another; 2) that tied households into neighborhood clusters; and, 3) that connected households to ward administrators in relationships that cross-cut neighborhood affiliations.

### **BACKGROUND TO PHASE TWO RESEARCH**

The current research is the culmination of a long term study of lowland Maya household and community organization. My initial examination of the organizational entailments of ancient Maya social life occurred during dissertation research at a site in northeastern Belize called San Estevan. By first documenting the ways that residential architecture was variously used to signal group cohesion, I subsequently determined that the size, spatial arrangement, and general farming practices of prehispanic Maya households had altered with distance to San Estevan's administrative precincts. These early findings produced a host of new questions and studies.

Since the San Estevan fieldwork I have explored diverse theoretical frameworks in the social sciences in order to illuminate how society's institutions and productive relationships converge in spatially determinant fashion (Levi 2002, 2003). The power to organize space has proven to be an interesting problematic. Although arising from the activities of individuals, it cannot easily be reduced to individual decisions or actions (Soja 1995). Instead, it emerges historically from the sweep of institutional arrangements across society (LeFebvre 1992). I have often used a modified notion of "landscape" (cf. Mitchell 1995) to describe the processes through which land, labor, and institutional affiliation converge. Significantly, landscape forges expectations about social experience – about what is likely to occur and where, as well as what is less likely or impossible (cf.



Foucault 1983:221-224). In so doing, landscape to a very great extent determines experience. With its own determinative dynamic, landscape must be understood as one of the most insidious and enduring forms of social power (Mann 1986:3).

Empirically, one of my foremost concerns has been to replicate the San Estevan findings at other lowland Maya locales. For this I turned to northwestern Belize and the PFB conservation area. The region exhibited important contrasts with northeastern Belize. While San Estevan was located at the margins of a flat coastal plain suited to various forms of wetland agriculture, PFB sites were situated in rugged escarpment terrain that descended in a series of steep limestone terraces to the Rio Bravo. In addition to facing very different ecological circumstances and agrarian constraints, the inhabitants of the PFB area were the product of very different political histories and had adopted a different array of architectural conventions signaling household affiliation.

For comparative purposes, I selected two PFBAP sites. The first, Wari Camp, was one of the larger prehispanic Maya centers in the area. Its principal administrative precinct was centrally situated and perched at the edge of the escarpment's uppermost tier. Three subsidiary precincts defining separate wards within the ancient community were found in the outlying settlement. The second site, designated "200 Meter Ridge," is located about six kilometers southwest of Wari Camp. In its heyday, it was a much smaller community, lacking the ward divisions so prevalent at Wari Camp.

Fieldwork at Wari Camp and 200 Meter Ridge helped to validate the San Estevan findings. As at San Estevan, residential assemblages at Wari Camp and 200 Meter Ridge vary with distance to administrative precincts. However, Wari Camp proved to be far more organizationally complex than either 200 Meter Ridge or San Estevan. Unlike 200 Meter Ridge, Wari Camp possessed multiple administrative precincts, or wards, in a situation that paralleled the San Estevan pattern (Figures 1 & 2). In addition, however, residence at Wari Camp was distributed in several smaller clusters around the community's ward precincts. Because residential clusters appear spatially discrete, I have taken to calling them neighborhoods. Two kinds of neighborhood clusters have been identified so far. The first neighborhood type is marked by the prevalence of residential units with walled plaza enclosures, whereas wall segments defining residential spaces never occur in the second.

At Wari Camp, therefore, we see what must have been a much more complicated social terrain where household membership not only determined membership in neighborhood clusters, but also structured relationships with community administrators, as well. Importantly, household relationships with administrative wards produced a spatial pattern that intersected with and cross-cut more localized neighborhood affiliations (pointing to the potential for divergent interests among members of the same neighborhoods).

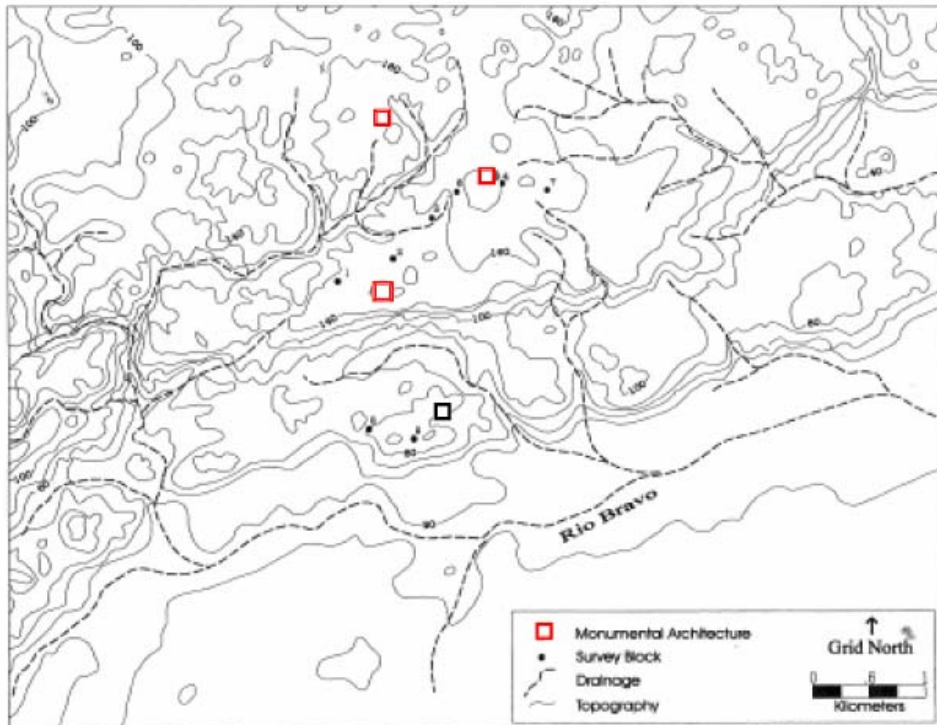


Figure 1. Topography of the Wari Camp Settlement System

### **DESIGN OF PHASE TWO RESEARCH**

The proposed, second phase of research at Wari Camp will attempt to portray in concrete socio-cultural terms the organizational linkages forged within households, among the households of individual neighborhoods, and between households and their ward administrators. The fieldwork will be logistically complicated and intellectually challenging. Logistically, fieldwork must be conducted across four wards that today span over 30 square kilometers of rugged, forested terrain (Figure 1). There are only two logging roads accessing the settlement area and both have been poorly maintained. The first logging road arcs across the northern half of the settlement area while the second traverses a portion of the southwestern settlement zone. A great deal of work will be needed simply to facilitate foot traffic. Intellectually, the fieldwork must facilitate material documentation of organizational differences among household classes and between neighborhood types.

### **The Organization of Household Personnel**

Recent findings from San Estevan underscore the fact that households vary not just in terms of their productive orientations, but according to their modes of consumption, as

well (Levi n.d). While some of San Estevan's households pooled their resources, others were more hierarchically organized with food rationed out in compensation for labor. These different modes of consumption left contrasting artifact signatures. At Wari Camp, therefore, research will concentrate for the first time on excavation rather than survey and mapping. A representative sample of residential forms will be drawn, and circumscribed areas within each residential unit will be excavated. The excavations will serve the dual purpose of providing artifact assemblages and chronological controls.

### **The Function and Organization of Neighborhoods**

Among both the past and present Maya, residentially localized, supra-household corporate groups are neither well-documented nor particularly well understood. Where noted in contemporary contexts, the tendency has been to assume that they are large, kin-based units functioning primarily in the realms of religious ceremony and ritual performance (e.g. Vogt 1969, Fash 1983). Often overlooked is the important role these units play in establishing rights to critical resources (Krejci 2001).

The greater investment in boundary maintenance on the part of households in Wari Camp's Type One neighborhoods suggests that there were some very basic differences between neighborhood types in the ways that labor was organized and resources pooled. These differences may relate, in turn, to significant differences in productive activities. In this regard, it is interesting to note that Wari Camp's two neighborhood types are found in quite distinctive ecological settings (Levi 2008). In particular, upland forest is relatively abundant in Type 2 neighborhoods but extremely scarce otherwise. These contrasting vegetation suites represent disparate hydrological situations that require contrasting sets of productive activities with divergent labor and scheduling demands (Dunning et al. 1998). Some fieldwork at Wari Camp, therefore, will be devoted to an investigation of the productive practices characterizing Type 1 and Type 2 neighborhoods.

### **Relationships between Household and Ward**

It has long been known that the ruling administrators of Maya cities referred to most of the structures in ward precincts as "houses," be they buildings for council meetings, religious rituals, public reception, or actual dwellings. Recent glyph translations also note that the Maya word for tribute received in service or labor is also the word for building construction (Stuart 1998). This conflation of ideas (house, building construction, and tribute) is no accident. Household architecture overtly represented a household's relationship to seats of power. It is very likely that, by virtue of their household affiliations, every Maya owed tribute to their rulers and ward administrators. It is fitting that rulers and administrators used the language of houses to express the asymmetry inherent in these relationships. The connections between these groups may have been further cemented through ward-specific ceremonies, including the very common house dedications in which caches are deposited beneath the cornerstones of new construction.

Although the ward-household relationship will be the most elusive of all to establish, an effort will be made to discern patterns of caching behavior that materially distinguish the households of different wards within the Wari Camp community.

## SUMMER 2008 FIELDWORK

### Plan of Work

This first season of Phase 2 work at Wari Camp was intended to lay the logistical and intellectual groundwork for subsequent research. One simple but important task was reestablishing the northern logging road to Wari Camp site center (UTM: zone 16 BQ, 19 71 100 [N], 2 92 150 [E]). Given logistical impediments, archaeological work was to be focused on the most proximate (northernmost) of Wari Camp's wards and excavations were planned for the ward's administrative core. Discovered in the summer of 2002, this particular administrative node is composed of two plazas situated on adjacent hilltops (Figure 2). One plaza houses a "temple-on-the-east" group that was probably the ritual/ceremonial focus of the ward. The second plaza contains elite residential architecture and was undoubtedly home to ward administrators.

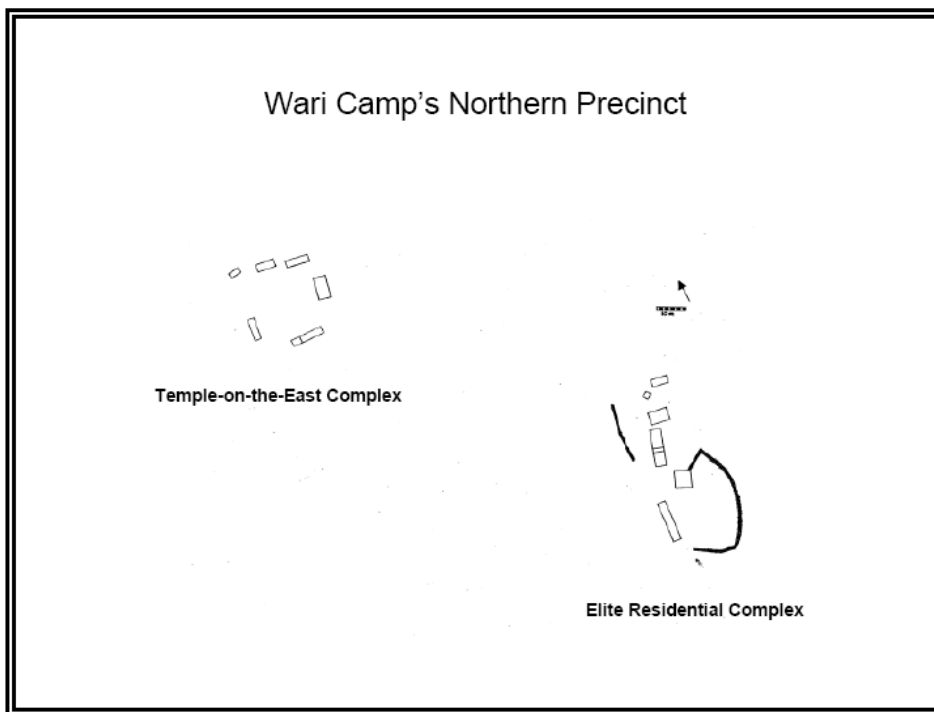


Figure 2. Wari Camp's Northern Precinct. A month-long field season was anticipated, Due to the fairly short season, archaeological

fieldwork at the North Ward was to be restricted to clearing looter's trenches and placing test pits in plazas to aid in chronological determinations.

### Project Personnel

- Laura J. Levi, Associate Professor, The University of Texas at San Antonio.
- Megan Egan, B.A. UTSA Anthropology, December of 2007.
- Chris Huth, UTSA undergraduate anthropology major (BA awarded in December 2008).

### Work Accomplished

Heavy rains in late May and early June filled the bajo between the PFB/Gallon Jug Road and Wari Camp. Large segments of the logging road to the North Ward were inundated as a result. Waiting for the rains to pass and the water to recede was not cost effective. The field season was terminated 10 days in advance of our scheduled departure.

Needless-to-say, the projects accomplishments were disappointingly small. Significant headway was made on road clearance to site center but, still, a sizable stretch of road will require clearance work in 2009. Excavations were restricted to two 1mx1m test pits in the ritual/ceremonial plaza of the North Ward. In addition, efforts were made to clear backfill out of a looter's trench gutting the Ward's dominant temple (Figure 3).

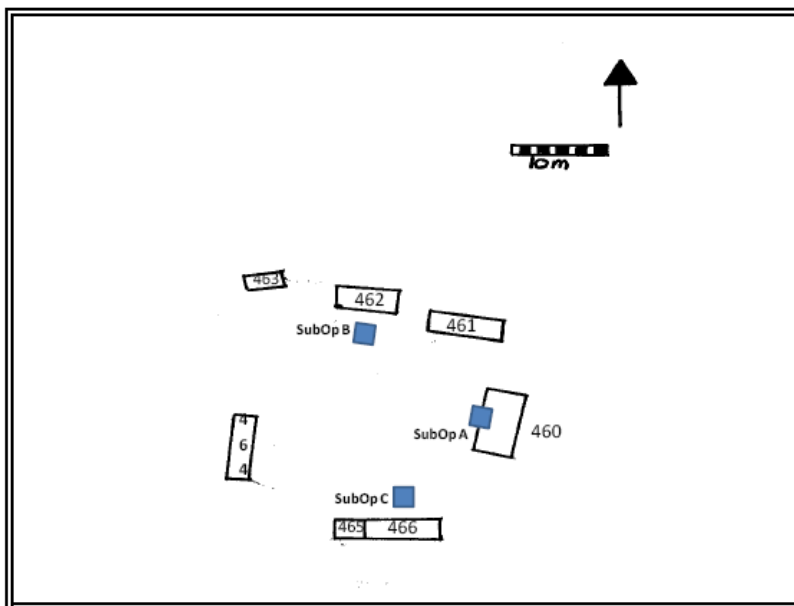


Figure 3. Distribution of Sub-Operations at Temple-on-the-East Complex, Wari Camp (RB-56).

- *Plaza excavations.* The two plaza excavations exposed remarkably similar depositional sequences (Figure 4). On the basis of the deposits, themselves, and the (small) assemblage of artifacts drawn from each unit, I suggest that the plaza supporting the North Ward's temple-on-the-east group was originally built in the Early Classic. This first construction episode primarily involved leveling the hilltop. If a plaster floor had been added, no obvious traces remain. A second major episode of plaza construction occurred in the Late Classic. The original plaza surface was covered with a mix of earth and small cobbles. This matrix was then overlain by a deposit consisting of large rubble blocks. Finally, additional soil and cobbles were distributed over the rubble in order to level the newly-elevated plaza. Again, we found no traces of plaster, and the surface to this second plaza construction may have consisted of packed earth.
- *Temple looter's trench.* Our efforts to clean out the looter's trench on the western face of the temple were halted prematurely. Nevertheless, it quickly became apparent that the section of hilltop occupied by the temple is largely artificial. While we are not yet able to date this construction activity, its onset should clarify when the hilltop was first fashioned into a ward precinct. Understanding the timing of the emergence of Wari Camp's ward precincts will be critical to any interpretation of the community's political history.

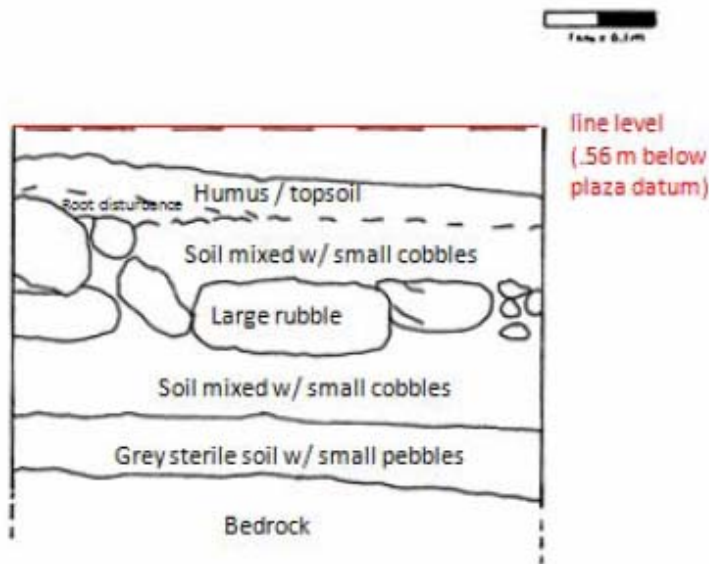


Figure 4. East face profile of , Sub-Operation C, Operation 2.

## REFERENCES CITED

- Dunning, Nicholas P., Timothy Beach, Pat Farrell, and Sheryl Luzzader-Beach  
1998 Prehispanic Agrosystems and Adaptive Regions in the Maya Lowlands. *Culture & Agriculture* 20(2/3):87-101.
- Fash, William L.  
1983 Deducing Social Organization from Classic Maya Settlement Patterns: A Case Study from the Copan Valley. In *Civilization in the Ancient Americas: Essays in Honor of Gordon R. Willey*, edited by Richard M. Levanthal and Alan L. Kolata, pp. 261-288. The University of New Mexico Press, Albuquerque.
- Foucault, Michel  
1983 The Subject and Power. In *Michel Foucault: Beyond Structuralism and Hermeneutics, Second Edition*, compiled by H. Dreyfus and P. Rabinow, pp. 208-226. Chicago: The University of Chicago Press.
- Lefebvre, Henri.  
1991 *The Production of Space*. Oxford UK and Cambridge USA: Blackwell.
- Levi, Laura J.  
n.d. Laboring and pooling: the relational bases of family life in the Maya Late Classic. Article manuscript.  
2008 *Embedded Communities: Environment and Affiliation in the Maya Lowlands*. Paper presented at the 107<sup>th</sup> annual meeting of the American Anthropological Association, Washington, D.C., November 19<sup>th</sup> through 23<sup>rd</sup>, 2008.  
2003 Space and the Limits to Community. In *Perspectives on Ancient Maya Rural Complexity*, edited by Gyles Iannone and Samuel V. Connell, pp. 82-93. Monograph 49, The Cotsen Institute of Archaeology, University of California, Los Angeles.  
2002 An Institutional Perspective on Prehispanic Maya Residential Variation: Settlement and Community at San Estevan, Belize. *Journal of Anthropological Archaeology* 21:120-141.
- Lohse, Jonathan and Fred Valdez (editors)  
2004 *Ancient Maya Commoners*. University of Texas Press, Austin.
- Mann, Michael  
1986 *The Sources of Social Power, Volume I*. Cambridge University Press, Cambridge.

Soja, Edward

1985 The Spatiality of Social Life: Towards a Transformative Retheorisation. In *Social Relations and Spatial Structures*, edited by Derek Gregory and John Urry, pp. 90-127. New York: St. Martin's Press.

Stuart, David

1998 "The Fire Enters His House": Architecture and Ritual in Classic Maya Texts. In *Function and Meaning in Classic Maya Architecture*, edited by Stephen Houston, pp. 373-426. Dumbarton Oaks, Washington, D. C.

Vogt, Evon Z.

1966 Some Aspects of Zinacantan Settlement Patterns and Ceremonial Organization. In *Ancient Mesoamerica: Selected Readings*, edited by John Allen Graham, pp. 176-188. Palo Alto, California.





## **EXPERIMENTAL POTTERY STUDIES IN BELIZE**

Sharon Hankins, Programmed for Belize Archaeological Project

Experimental Archaeology: “The study of past behavioral processes through experimental reconstruction under carefully controlled scientific conditions.” (Renfrew and Bahn: 541).

### **INTRODUCTION**

This paper is a preliminary report, and results of an experimental study undertaken at the R. E. W. Adams Archaeological Research Facility in Belize. My first physical approach to the project was started in the field season of 2000 with Cindy Phillips. Cindy’s experience of over 40 years included owning her own pottery-making store and as an instructor in the craft. My goal was to incorporate interested potters in joining the research project. For the purpose of this preliminary paper I will focus on the accumulation of the research that I resumed in the field season of 2008. The environment and its contribution to my needs such as clay, temper, fuel, and firing methods are the most important aspect of my research. My goal was to have the environment influence my decisions.

I did not take pottery lessons initially. I used reference books, and my surroundings. I did not want to introduce an unconscious bias into my investigations. I am grateful for Dr. Fred Valdez for the opportunity to undertake the study of pottery research in experimental archaeology to be included in his field school in Belize. Also, the cooperation and support of the Programme for Belize is greatly appreciated. The Programme for Belize is a conservatory comprising over 260,000 acres, of rich bajos, and thick forests. It is surrounded by several river systems. These rivers and bajo systems will, hopefully, supply a wide range of clays to investigate.

### **PURPOSE OF THE PROJECT:**

This is a multifaceted approach utilizing environmental studies, cultural, ethnological, and ceramic studies from various instructors with feedback from students, faculty, potters, and many mistakes. Perhaps, by making this project available to students it will generate more knowledge and curiosity in the observation of materials in the field that would pertain to this little understood technology.

The amount of pottery catalogued in field seems to be greatly outweighed by the general lack of manufacturing sites uncovered. My hope is to foster research, dialogue, and understanding of applicable ways to manipulate the environment to produce pottery. I particularly appreciate Prudence Rice’s interpretation of ceramic ecology. “ Ceramic ecology emphasizes the potter’s role as an active and controlling agent in the procedures of pottery manufacture (resource selection, forming techniques, firing strategies) as these

are revealed through technological analyses of both ancient and modern pottery” (Rice 1987: 317). I believe this active role is commonly overlooked, or misunderstood. Art and variability are not easily explained without direct records.

Another important aspect of this study is our presence and work with the students, including local Belizeans. Hopefully, this project can become a working lab in the field. With the feedback of both of these components we may inspire more discussion and knowledge of pottery making. The students could “visually” consider the processes of ceramic making, and it’s record in the field. (I have seen flintknappers in the field explaining their processes. I have witnessed only a few potters.)

### **SOME INITIAL STRATEGIES**

As, I stated earlier, I wanted my surroundings to influence my decision making. Therefore, I used every means at my disposal to become acquainted with the local resources. As stated earlier, PFB is a local conservation area. The research station has many self-explanatory nature trails, and guides (upon request). We also had several local assistants, such as Oscar Garcia and his wife Alba, who are proficient in the knowledge of plant lore. This includes expert medicinal properties, and more colorful folklore anecdotes.

Through Oscar, I became acquainted with the plant leaf “labisa och”. Oscar uses it to wash the tables in the kitchen. When the leaf is freshly picked from the tree it resembles sandpaper. It became a great tool for smoothing the pots. Dorie Reents-Budet acknowledges that “sandpaper creates a slightly abraded surface that aids in the adherence of the base slip...Although no evidence has yet been found of the Maya employing a similar technique, one of the technical characteristics of the painted pottery is it’s durable base slips.”(Reents-Budet 1994: 231).

Another local tree that became beneficial was the Cohune Palm (*Orbignya Cohune*), the leaves were and still are used to provide roofing (Adams 1999:39). The heart of the tree is edible and sold in gourmet shops as “Hearts of Palm”. My attention was drawn to a statement I read concerning the use of a hard-shelled, large nut we often see scattered through camp. “The hard shell or Copra of the nut makes an excellent charcoal. During World War II these husks were used to make charcoal filter masks for Air Force pilots. NASA uses the activated charcoal in the space program” (Arivgo 1992: 6). The Copra, or nut, made excellent briquettes for our firings in the earlier field seasons. The ribs and leaves of the palm that are remnants of the “elements” make excellent refuse for firing materials, as well.

I have also worked on several sites in PFB area (as an undergraduate), and became familiar with the many of the different clay bajos and river systems. Over the years, we have tried to bring in clay samples from the sites. I believe this is an excellent strategy. It would be beneficial to have these labeled, and stored for future research.

## **ETHNOGRAPHIC UNDERTAKINGS**

Many anthropologist and archaeologists have developed extensive ethnographic studies of pottery making villages in Mesoamerica. Reina and Hill in Guatemala(1978), Dean Arnold in the Andes (1993), Philip J. Arnold III in Los Tuxtlas (1991), and Raymond Thompson in the Yucatan (1958). I have also found the study of similar ceramics useful. In particular, the Lacandon Indians (Price: 1972) offers an insight into the manufacture of god pots. Price's study became interesting because several very nice god pots, of the Late Classic period, have been recovered in the field in the PFB area. However, there is little local ethnic industry in the vicinity of our field school. In particular, there are no local potters. Hopefully, I can update this statement as I have received an invitation from a local potter (through Vladimir at PFB) to visit his studio. I am looking forward to accepting his invitation.

I have also, personally traveled in the Yucatan. I have visited Ticul, and Mani. The Yucatan use beehive kilns, and the kabal. There is no evidence of either technology in our area. However, I did observe, and question their methods of aging the clay. The potter in Mani stores his clay in water filled, cement vats. The clay, however, was purchased in Campeche.

## **FIELD SEASON 2008**

The main focus of my research this season was the clay processing, preparing slip, and experimenting with pigments. I worked on this project for three weeks this year. Some of the impediments were organizing, working solo for a solid two weeks, and the weather. The third week I was fortunate to be joined by two students who were very interested in this program--Andy Tefteller and Meredith Keaton. They both helped me process the tempers. Grinding of calcite is especially laborious.

I knew I did not have time to take the project to the firing level. The rain was a hindrance. Andy, Meredith, and I worked to the accompaniment of several of the technical books I had brought, particularly Prudence Rice's source book (Rice 1987).

I was grateful for all of the student's interest. I am especially thankful for Andy. His presence was exactly the answer to the program. Andy's help reinforced my concept of the human desire to experiment. In particular, his desire to manipulate his surroundings, and to accomplish a useful, more advantageous innovation to existing problems.

Andy understood the concept of kilns, and read everything he could research on different firing methods. Realizing I would not be able to take the experiment to the firing level, I entrusted Andy. We did not have access to a pyrometer this year. I used Philip J. Arnold's chart to judge the temperature by color (Arnold 1991: 52).

## **CLAYS**

There is existing variability not only with the clays, with the potter's decision on the different type of clay or clays to be used as well. Potters from many different cultures have aged or soured the clay to make it more plastic (Leach 1945: 48, Cardew 1969: 80). Potters are known to mix different clays (experimenting) to obtain a material that was pleasing for them to work with. Different types of clays are used to make different types of pots. Water jugs and everyday ware would be a clay body that was not as fine as ceremonial wares.

Lagunita clay was brought in from the field, and soaked in water for a week before my arrival. After much deliberation I decided to wet sieve the clay. My preferred method would be to dry the clay, pulverize it, and then soak it in water. The rainy season and time altered that decision. I labeled this clay LG for reference.

We also received permission from PFB to use some of the Turtle Pond Clay for our experiment. Norma Garcia graciously helped me retrieve some samples. I only sampled a few handfuls from around the southern edge of the pond. It is labeled TP1. Some of the students brought me some samples of clay from La Milpa. It was a gray finely grained clay. I really did not need to sieve it. I later found out this was the clay they had salvaged from sieving the artifacts in the field. This would be an excellent method of testing clay samples! I labeled this particular clay LM1.

The major problem I developed with wet sieving was with the drying—again no sun for evaporation. My son, Zach, suggested I take cheesecloth with me. The cheesecloth was invaluable. I eventually wrapped clay in the cheesecloth and hung in from a tree to drain the excess water. I also used the cheesecloth to sieve the calcite, and oxides for pigments.

## **TEMBER AND CLAY**

Availability of materials and the selection of tempers could be based on individual preference, in particular, the type of vessels that are being created. Certain tempers fired react to the firing temperature with different consequences. The closer the temper used in making the pot is to an igneous source, the higher temperatures could be reached in firing the vessels. Lower fired and more porous vessels would require the variability of different sized tempers, less heat resistant tempers and a lesser refined clay.

## **CALCITE**

Calcite is another source of temper identified in the ceramic studies of our area. Interestingly, my source for the calcite temper is found in camp. As an undergraduate, it was the first thing I noticed when I crawled out of my tent in the morning. My tent was directly over a calcite deposit. At the time, I did not comprehend the significance, primarily because I did not understand the implications of pottery making. Gradually, I started noticing calcite in the field at a couple of sites we were excavating. I knew most

of the pottery we found was tempered with calcite. I then became interested, and curious about other clues related to this technology that was overlooked.

This season I decided to also try an experiment with calcite. Usually, I crush the calcite to a fine powder, and add it to the clay body. This time I noticed that if I did not pulverize the calcite, it retained its refractory or shiny (somewhat) original form. I made a pot with some of the special calcite temper. The product is quite interesting. It will require more experimentation. The fire did not reach a high temperature, but the by-product was a pleasing and micaceous pot. I would need to raise the temper to at least 600 to see if it would change the composition of the calcite to the usual opaque color.

### **TEMPERS**

Pottery sherds were often used for tempering in Maya ceramics. The reuse of pottery sherds is another “recycling” aspect to take into consideration. It is used as temper—it has already gone through a firing and therefore, fortifies the clay body through another firing process. They can be used a kiln furniture to raise the pots off the ground, so they are less likely to explode from direct contact with the fire. Sherds also, are used to protect the ceramic vessels, and help prevent fireclouiding. They also are great liners to conduct heat through firing chambers, and tunnels.

I have been considering this concept for some time—the recycling tendency of the Maya. Archaeologists have considered remnants of pottery sherds (fired, re-fired, kiln furniture etc.) as indicators of a pottery-making site. What if the “Great Recyclers” simply ground them, and used them again as temper. Or simply, gathered them and used them to fortify their walls, and irrigation systems. This would leave little trace of broken pottery sherds left laying around waiting for us to discover.

### **SLIPS AND PIGMENTS**

Oscar drove Sandy Shuster, Norma Garcia, and I to the gravel pit behind camp. Oscar had been our guide to this location several years ago with Cindy Phillips. This is not only a great source for sand, but pigments as well. We collected red pigment (iron oxide, perhaps hematite), and yellow, or limonite (iron oxide). This is a dry riverbed, and has an abundance of mineral deposits, calcite, and sand.

According to Prudence Rice “for unglazed, low-fired pottery, only three colorants that are naturally found in abundance (in oxide form) can survive the temperatures of firing: iron, manganese, and carbon” (Rice 1987:148).

I am not a geologist, and I use a reference book to identify materials (Zim and Shaffer: 1957). A geologist accompanied Dr. Aylesworth this field season and I gladly gave them samples of my collections to analyze.

I ground these pigments with a rock I found in camp years ago—it resembles a metate. After grinding the pigments I sieved them through cheesecloth. Then I soaked them in water. I was unable to experiment with binders this year because of the time constraint.

### **CLAY FORMULA**

For my experimenting I used a tempering formula of ground pottery sherds, calcite, and sand. I adjusted the amounts continuously until I could “feel” a good working clay body. Again, this is a personal selection. I did keep records of my formulas. Wet formula as followed:

LaGunita (LG1) was 500 ml. of clay, 60 ml. of ground and sieved calcite, 60 ml. of ground and sieved sherds, and 60 ml. of sieved sand.

LaGunita (LG2) was 500 ml. of clay, 80ml. of ground and sieved calcite, 80 ml. of ground and sieved sherds, and 80 ml. of sieved sand.

Turtle Pond (TP1) was 500 ml. of clay, 60 ml. of ground and sieved calcite, 60 ml. of ground and sieved sherds, and 60 ml. of sieved sand.

Turtle Pond (TP2) was 500 ml. of clay, 80 ml. of ground and sieved calcite, 80 ml. of ground and sieved sherds, and 80 ml. of sieved sand.

La Milpa (LM1) was 250 ml. of clay, 60 ml. of ground and sieved calcite, and 30 ml. of sieved sand.

I also made tiles of LG1, and measured them wet: 178mm.long, 142 mm. wide, 70.6 grams on triple beam, and TP1 coil 305 mm. long, and weighed 50.3 grams on triple beam. The tile and coil measurements were not comparable later (after drying and before firing). The records of weight and volume were not retrievable.

Natalie made a pinch pot- bowl that resembled a small vessel that came in from the field and used TP1. She also made another pinch pot that had a small spoon accompanying the small vessel, also TP1. I made a pinch pot tecomate from the LG1 formula., and two small coiled pots from the same formula. Oscar’s daughter made two pots of the TP1 formula. Approximately 12 ceramic units were completed. My method of preserving the drying process is to cover the pots, and spray with water whenever I think they are starting to dry too rapidly.

### **WEATHER CONDITIONS AS A VARIABLE**

The concern of water evaporation is magnified in importance in a coastal area such as Belize. Belize as a coastal land formation is subjected to the dictates of the weather, especially atmospheric pressure. Warm afternoons and cool and damp nights enforce the necessity of a controlled drying sequence. Other areas that are arid or inland with not as much fluctuation in atmospheric pressure and temperatures do not cause the same cautious concern.

Once the drying process starts it cannot be interrupted. Modern potters control the process by covering their pots and storing their clay in plastic bags. Every person I took lessons from always dried their pots as soon as possible, and then stored them for firing. Each season this haunted me. Because of the drop in temperature at night, cracks could appear at any given time. I soon realized the necessity to work around this problem. So, I chose this issue as a focus this season. It has been suggested that the Maya could have stored their “greenware” on shelves that were placed at the top of the hut to store. The hot air from their cooking fires would rise and help control the temperature gradient. The Potters of Santa Apolonia, as other places in Guatemala employ a similar technique. Reina and Hill give a detailed explanation of how they carefully dry their ceramics in their homes on racks and slowly control the evaporation of the pore water (Reina, and Hill 1978:63).

### **CONTROL OF THE PORE WATER IN CERAMICS**

As mentioned above this was my nemesis. I consciously, tried to keep the drying at a constant level. My goal was not to let the pot dry until I was ready to fire it. Then it, too, would be a controlled situation. I would not start fully drying the pots until I knew I was going to start the firing process.

This became more difficult as the rains continued, and I had to return home.

I was lucky to have two students, Andy and Meredith, who wanted to learn. I went over the process with them, and felt confident they would do their best. They too, were fighting against the rain, and time.

My instructions were to always keep the drying method—the manner of the water leaving the clay body to be their focus:

I intended to use the rudimentary kiln that I had built in 2000, as an intermediary, or holding oven. This was a kiln built into the side of a limestone hill (I undertook extra measures because of the rainy season, and I knew I had to stay one step ahead of water).

This will be referred to as kiln 2000. The sequence was based entirely around the water, with emphasis on the pore water in the clay itself. Andy’s kiln will be referred to as kiln 2008. My intention was to utilize two ovens, or kilns to control the moisture loss. Kiln 2000 is only a warming oven. Kiln 2008 is the firing oven.

Example of moisture control:

1. Protection of the freshly made pot (the wet clay body). This can be accomplished by large leaves or cloth.
2. Gradually bringing it to the leather hard stage (at this point the pot is rapidly losing pore water).
3. Holding the moisture level until it is time to fire.

Firing Strategy:

1. Build fire in kiln #2000. Let the embers turn to ash.
2. Build fire in kiln #2008. (Known as primary fire)



3. Place leather hard pots in kiln #2000.
  4. Primary fire burns to ash (warms the soil and surrounding area).
  5. Place the pots along the side of the Primary fire #2008.
  6. Place pots on warmed sherds or kiln furniture in kiln #2008 when ready to fire.
- As I understand from Meredith none of the ceramics had cracked before firing.

### **FIRING IN THE RAINY SEASON**

I have no other alternative but to learn an adaptive process of firing in the rainy season. I realize that this is a debatable subject in archaeology. The field school operates during the summer in Belize—the rainy season. I hope, eventually this can be overcome. It requires a willingness to adapt, however. If societies learn to adapt to their environment they will succeed. The Maya produced an exceptional volume of pottery. As time progressed the different pottery types became more complicated. Monochrome, bichrome, polychromes, plumbate, trickleware, and fine paste pottery are just a few examples of their production skills. Limiting themselves to certain seasons, I believe, would evolve as their needs dictated. Dean Arnold (1993: 70-71) and Philip J. Arnold (1991: 58-59) give detailed explanations of the reasons and necessities that would cause pottery communities to adapt to the weather, or seasonality of pottery making. A farming community could reach a degree of sophistication that could allow full time specialists and would define separate duties for its participants.

Full time specialists would require separate areas to store their tools, products, and materials from the weather. The desire for kiln structures and protection for the pots could also be attained. Valdimir (of PFB) explained this is the current method of using firewood. He stores and protects his firewood for the rainy season in a separate structure. There are some days in the rainy season that sunshine is available, that is, it rains intermittently. Of course, a rain shelter would be beneficial. We have not had the opportunity to experiment with this idea.

### **CLOSING STATEMENT**

Pottery manufacture and experimentation is a continuum. Any time one of the components is lacking or unavailable, adjustment or adaptation must be applied to keep the entire operation functioning. The major component is the environment. A satisfying clay to work with, a perfectly made pot, is useless, if one of the components controlling the drying process, the firing process, and the cooling process is not adjustable. The Maya had to learn to control the wind, the rain, the heat, and the cold to master this technology. This is an interactive economy.

For this reason I believe there is a precautionary danger in trying to proclaim specific steps or procedures in determining how the Ancient Maya manufactured their ceramics. I definitely want to clarify that my work is only suggestive. I believe there is a great wealth of information in experimentation and demonstrating the different possibilities of ceramic methodology.

I do not believe we can make absolute statements concerning analyzing pottery without understanding the complexity and labor involved in manufacturing these pots. Experimentation widens our knowledge of how manufacture can be accomplished. The organizational skill accompanying pottery manufacture amplifies the desire to question the social implications that labor suggests. I believe experimental theories of ceramic methods widen our knowledge of how manufacture can be accomplished.

### **ACKNOWLEDGEMENTS**

I especially, would like to thank Andy Tefteller. His desire to experiment, and think outside of the box is a true example of the type of technology and adaptation needed to contribute to this type of research. A separate report concerning kiln construction may be incorporated into a future report.

My son, Zack Northcutt who also helped dig kilns for Cindy Phillips and I. Of course, Cindy, and all my pottery instructors, friends, and students who have so kindly volunteered over the years. I also extend thanks to all of the PFBAP instructors and students for their consistent interest and support.

### **REFERENCES CITED**

- Adams, Richard E. W.  
1999 *Rio Azul*. University of Oklahoma Press, Norman, Oklahoma.
- Arvigo, Rosita, and Balick, Michael  
1993 *Rainforest Remedies*. Lotus Press, Twin Lakes Wisconsin.
- Arnold, Dean E.  
1993 *Ecology and Ceramic Production in an Andean Community*. Cambridge University Press, Cambridge.
- Arnold, Philip J. III  
1991 *Domestic Ceramic Production and Spatial Organization*. Cambridge University Press, Cambridge.
- Cardew, Michael  
1969 *Pioneer Pottery*. St. Martin's Press Inc., New York.
- Leach, Bernard  
1954 *A Potter's Book*. Faber and Faber LTDD, London.
- Price, Christine  
1972 *Heirs of the Ancient Maya*. Charles Scribner's Sons, New York.

Reents-Budet, Dorie

1994 *Painting the Maya Universe: Royal Ceramics of the Classic Period*.  
Duke University Press, Durham, North Carolina.

Reina, Ruben E., & Hill II., Robert M.

1952 *The Traditional Pottery of Guatemala*. University of Texas Press,  
Austin, Texas.

Renfrew, Colin, and Bahn, Paul

1996 *Archaeology, Theories, Methods, and Practice*. Thames, and Hudson  
Ltd., London.

Rice, Prudence

1987 *Pottery Analysis, A Sourcebook*. The University of Chicago Press,  
Chicago.

Thompson, Raymond H.

1958 *Modern Yucatecan Maya Pottery Making*. Memoirs of the Society for  
American Archaeology, No. 15.

Zim, Herbert S., and Shaffer, Paul R.

1957 *Rocks and Minerals*. Western Publishing Company Inc., Racine,  
Washington.