

**THE 2010 SPRING MAPPING PROJECT
OF THE
KA'KABISH ARCHAEOLOGICAL RESEARCH PROJECT (KARP)**

Submitted to

The Institute of Archaeology, NICH
Archaeology Museum and Research Centre
Culvert Road
Belmopan, Belize

Prepared by

Dr. Helen R. Haines
Assistant Professor (LTA)
Department of Archaeology, Trent University
Research Associate
Trent University Archaeological Research Centre (TUARC)

Permit Number IA/H/2/1/10(16)

MARCH 12, 2010

Department of Anthropology
Trent University
DNA Building, Block C, Rm C207
2140 East Bank Drive
Peterborough , Ontario L1H 7L7, CANADA
Mobile: 416-209-2028
E-mail: helenhaines@trentu.ca

TABLE OF CONTENTS

TABLE OF CONTENTS.....	iii
LIST OF PROJECT PERSONNEL.....	iv
ACKNOWLEDGEMENTS.....	v
INTRODUCTION.....	7
CHAPTER 1.....	11
<i>Overview of the 2010 Research at Ka'Kabish, Belize.</i> <i>by Helen R. Haines</i>	
CHAPTER 2.....	17
<i>The Final Push at Ka'Kabish: Investigations in Plaza D.</i> <i>by Cara G. Tremain</i>	
CHAPTER 3.....	25
<i>A Light at the End of the Tunnel: Mapping of Looters' Trenches in Structure D-4.</i> <i>by Cara G. Tremain</i>	
CHAPTER 4.....	41
<i>Excavation and Mapping of Structure D-9.</i> <i>by Cara G. Tremain</i>	
CHAPTER 5.....	49
<i>Exploration of Tomb FA-6/1.</i> <i>by Danielle Budhoo</i>	
CHAPTER 6.....	63
<i>Survey and Settlement History at Ka'Kabish, Belize.</i> <i>by Alec M'Lellan</i>	
CHAPTER 7.....	73
<i>Ka'Kabish Archaeological Project 2010: Report on the Pottery.</i> <i>by James J. Aimers</i>	
CHAPTER 8.....	77
<i>Comments on the Glyphic Text of Tomb 1, Structure FA-6, Ka'Kabish, Belize.</i> <i>by Christopher Helmke</i>	
CHAPTER 9.....	81
<i>Summary Discussion of the Ka'Kabish Site and Discoveries of the 2010 Field Season.</i> <i>by Helen R. Haines</i>	
FINAL WORD.....	87

LIST OF PROJECT PERSONNEL

Project Director:	Dr. Helen R. Haines, Trent University
Ceramic Analyst:	Dr. James J. Aimers, SUNY-Geneseo
Project Epigrapher:	Christophe Helmke, University of Copenhagen
Graduate Students/Staff	Alec McLellan, Trent University Cara Tremain, Trent University Danielle Budhoo, Trent University
Belizean Field Crew:	Jaime Yanes, Indian Church Sr. Ponciano Perez, San Carlos Oscar Ruano, Indian Church Roni Yanes, Indian Church Greg Rodreques, Indian Church David Gonzales Jr., Indian Church Victor Lopez, Indian Church George Ruano, Indian Church
Undergraduate Students	Laura Heath, Wesleyan University Loretta Tucker, SUNY-Geneseo (laboratory week with Dr. Aimers) Zac Simms, Ithaca College

ACKNOWLEDGEMENTS

I would like to thank the Institute of Archaeology, NICH, for their assistance and permission to work in Belize. In particular I would like to thank Drs. John Morris and Jaime Awe for the advice and support. I would also like to extend my gratitude to Dr. Thomas Guderjan of the Maya Research Project and my fellow archaeologists at the Lamanai Archaeology Project, Drs. Elizabeth Graham, Scott Simmons, and Linda Howard, also have been a great source of support and inspiration; I look forward to future collaborations between our two projects.

As archaeological work would not be possible without the co-operation of the local people who have as much invested in our work as we do, if not more, I would also like to thank the following individuals: Srs. Blanco, Che, and Magana for allowing access to their land; the ladies of Las Orchidas for keeping us well fed; Ben and Margaretha Dyck of the Blue Creek Community for helping with the logistics; and all the members of the various community that provided me with information and assistance in a variety of ways.

INTRODUCTION

The site of Ka'Kabish is located almost exactly 10 km from the larger centre of Lamanai at 311 degrees magnetic north (Figure 1). The core area of the site was constructed on a limestone ridge, one of several that undulate across this part of north-central Belize (Hammond 1973; Romney et al. 1959). Situated at approximately 17^o 48' 58" north latitude by 88^o 43' 47" west longitude¹ the core area of Ka'Kabish was separated roughly in half by the construction of a road connecting the village of Indian Church to San Filipe (Figure 2). The site sustained damage during the construction of this road and at least one building was allegedly completely destroyed while two other structures, along with a section of the south plaza, are known to have been removed during the brief succeeding use of the site as a quarry for road fill (Guderjan 1996). Using this road as a dividing point the site is broadly referred to in terms of the North Complex and the South Complexes.

Additional damage to the site was caused by extensive illicit looting operations (see Chapter 3 this volume and Tremain 2011). Currently the greatest danger to the site is from the encroaching farmland. This last situation is undoubtedly exacerbated by the sites proximity to four growing communities – one in every direction (Figure 2).

Since its inception, the Ka'Kabish Archaeological Research Project (KARP) has focused largely on mapping the core area of the site, as well as identifying and document the surrounding settlement zone. The latter work has been closely tied to agricultural activity by taking advantage of recently cleared and ploughed lands opened up by Mennonite farmers, or through accessing the recently cleared cane fields adjacent to the site.

This volume details the work conducted by the Ka'Kabish Archaeological Research Project (KARP) under the direction of Dr. Helen R. Haines during the 2010 field season. This is the third season of archaeological investigations at the site, with previous work being conducted in 2007 and 2009. Additionally, the site was visited in 2005 to assess its potential for full-scale archaeological activity. However, as this was a cursory visit for inspection purposes only and no archaeological work was conducted it is considered separate from the actual start of the project.

¹ This reading was taken from the centre of the road that bisects the site using a Magellan 100 handheld GPS unit.

REFERENCES

Guderjan, Thomas H.

1996 Kakabish: Mapping of a Maya Center. In *Archaeological Research at Blue Creek, Belize. Progress Report of the Fourth (1995) Field Season*, edited by T. H. Guderjan, W. D. Driver and H. R. Haines, pp. 117-120. Maya Research Program, St. Mary's University, San Antonio.

Hammond, Norman

1973 *Corozal Project: 1973 Interim Report*. Centre of Latin American Studies, University of Cambridge, Cambridge.

Romney, D.H., A.C.S. Wright, R.H. Arbuckle, and V.E. Vial

1959 *Land Use in British Honduras, Report of the Land Use Survey Team*. Her Majesty's Stationary Office, London.

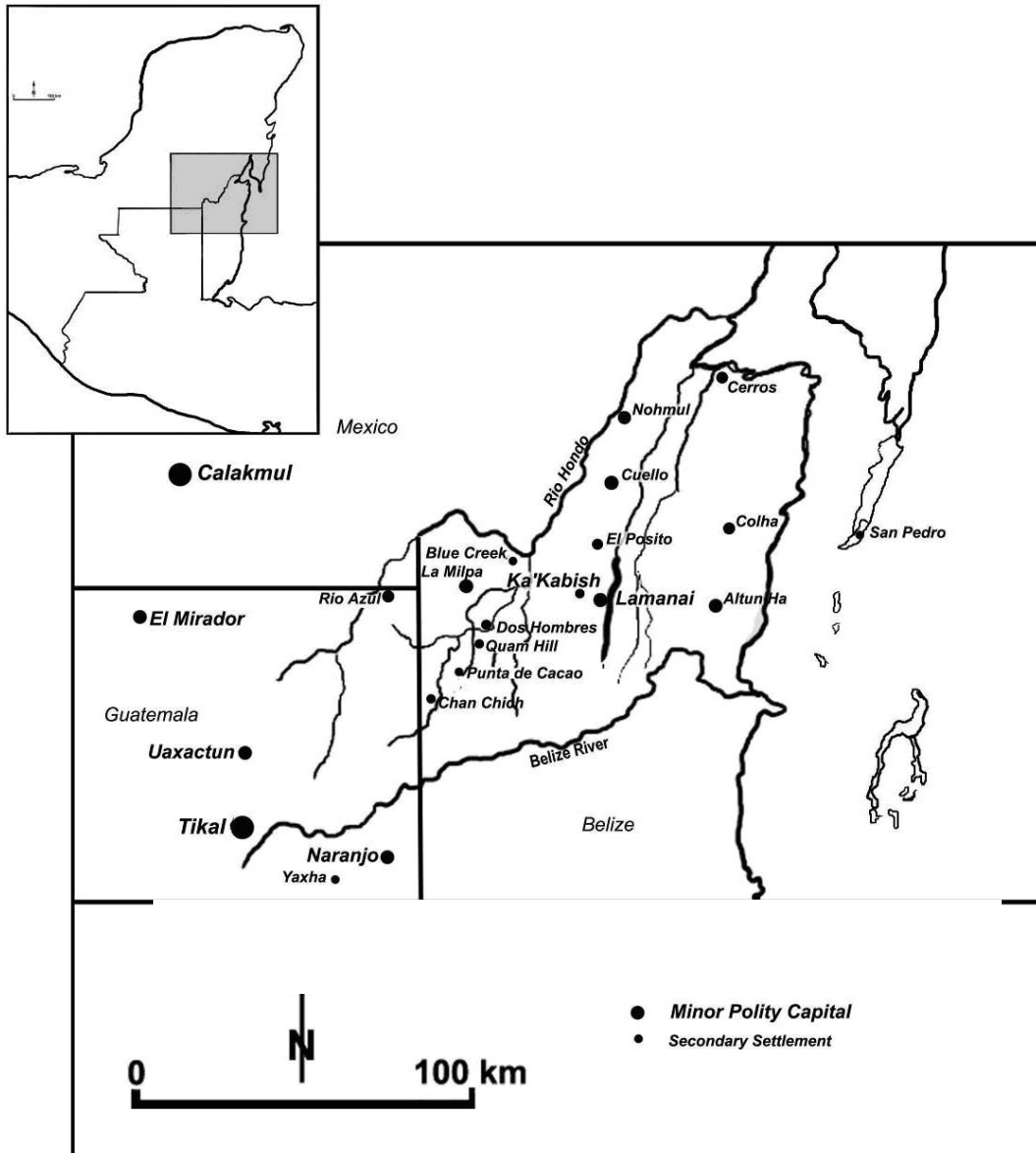


Figure 1. Map of Northern Belize and North-Eastern Guatemala Showing Key Archaeological Sites



Figure 2. Aerial Photo Showing Archaeological Sites and Modern Towns.

CHAPTER 1

OVERVIEW OF THE 2010 RESEARCH AT KA'KABISH

by Helen R. Haines

*Department of Anthropology
Trent University*

In 2009, the Ka'Kabish Archaeological Research Project, by virtue of a grant from the Social Science and Humanities Research Council of Canada (SSHRC) was able to expand its investigations through the inclusion of three Masters graduate students from Trent University (Cara Tremain, Danielle Budhoo, and Alec McLellan), and two undergraduate students (Laura Heath from Wesley University and Zac Simms from Ithaca College). Later in the field season we were joined by Dr. James Aimers (SUNY Geneseo) and an undergraduate student also from SUNY Geneseo (Loretta Tucker) who assisted during the laboratory week. Additionally, we were able to hire the following eight workmen from the villages of Indian Church and San Carlos to assist us; Jaime Yanes, Sr. Ponciano Perez, Oscar Ruano, Roni Yanes, Greg Rodreques, David Gonzales Jr., Victor Lopez, and George Ruano).

Work at the site commenced June 6, 2010, and lasted for six weeks, concluding July 16, 2011. The work was interrupted for a period of three days from June 30, 2010, to July 2, 2010, while members of the project attended the Belize Archaeology Symposium in San Ignacio. Following the field work, research continued in the lab for an additional two weeks which concluded on July 30, 2011. Work was conducted under permit number IA/H/2/1/10(16).

Five areas formed the focus of the 2010 field season: Plaza D, Structure D-4, Structure D-9, the painted tomb in Structure FA-6 (identified as FA-6/1) (Figure 1), and the settlement zone (Figure 2). Work on Plaza D consisted primarily of a large unit into the plaza surface to the east of Structure D-4. This excavation originally consisted of four 2x2 metre units arranged in a square that was later reduced to a single 2x2 metre in the centre of the square when, as predicted, the depth of the excavation and the nature of final construction fill, proved unstable and required the units be “stepped-in” for safety.

A second 2x2 metre unit was initiated into the plaza area to the south of Structure D-5 to compare construction sequences. However, this unit was not fully excavated to bedrock prior to the end of the season. A tarp was laid across the terminal area and then the unit was carefully backfilled with the expectation of completing the unit during the 2011 field seasons. Initial work revealed that the layer of

construction episodes appears to be different than that found to the north of Structure D-5, however, we must await complete of the unit before a conclusive analysis can be conducted.

The excavation was designed to identify the construction chronology of the plaza and, it is hoped, provide a base line for the surrounding structures to be investigated in the future. The work was conducted under the supervision of Cara Tremain and Laura Heath and is reported by Tremain in Chapter 2 of this volume. Tremain also supervised and conducted the work on Structures D-4 and D-9 (Chapters 3 and 4). This work consisted of clearing and mapping the primary looters' trenches in an effort to identify the number of construction sequences each structure underwent as well as provide a chronology for these sequences.

Additionally, work in the site core was conducted in the painted tomb in Structure FA-6 by Danielle Budhoo as part of her Master's thesis research. This tomb, first identified by the Maya Research Program in 1995 (Guderjan 1996), was later dated by radiocarbon analysis to the late 5th century AD (Haines 2010a, 2010b). Remnants of red painted glyphs were identified by Christophe Helmke, University of Copenhagen, as being the name of the tomb's inhabitant (Helmke Chapter 8 this volume). As the configuration of the tomb is previously unknown in this part of further investigation of the tomb was deemed warranted (see Chapter 5 this volume). This work consisted of clearing a section in the centre of the tomb to locate the floor and then penetrating this surface in an effort to gain additional information about the construction of the tomb and the chronology of the temple construction.

Work also continued in the surrounding settlement zone to gain insights into the history of the occupation of the area. This work was conducted by Alec McLellan as part of his Master's thesis research and builds off of earlier work done under the aegis of KARP by Clifford Patterson (Haines and Patterson 2008). During the 2010 field season we were able to access lands to the south of the site core. These lands contained additional evidence for residential occupation as well as a small cenote filled with water (see Chapter 6). The landowner informed us that this cenote, along with the one to the east on a neighbouring property never run dry despite the time of year or climatic conditions. This suggests that they are part of an underground river system running into the New River Lagoon.

In 2010, we were also fortunate in that we were able to gain permission to access recently cleared field roughly 0.8 to 1.5 km east of the site on the north side of the road. These lands were recently opened by George Wall, a member of the Shipyard Mennonite community, and were being planted for corn (see Chapter 6). While somewhat distant from the site this work greatly extends our knowledge regarding the overall occupation and population density in this area of Belize.

Using the material gathered from this years excavations and survey, we were able to reinforce and expand our tentative chronology for occupation at the site core and in the surrounding settlement zone areas (see Aimers Chapter 7). This work extends the inception date for the site back to the latter part of

the Middle Formative period (ca. 600-400 BC) and supports previous assertions that activity at the core continued into the Terminal Classic period (AD 750-900/1000) (Aimers 2009). Meanwhile, we have further evidence that occupation in the surrounding settlement zone continued into the Early Post-Classic (AD 900/1000-1100) and possibly Middle Post-Classic periods (AD 1100-1300). The data for these conclusions and others are presented in the chapters that follow.

REFERENCES

Aimers, James J.

2009 Appendix II: Ka'Kabish Ceramic Report. In *The 2007 Spring Mapping Project of the Ka'Kabish Archaeological Research Project (KARP)*, edited by Helen R. Haines, pp. 64-69. Final Report of the 2007 field season submitted to The Institute of Archaeology, NICH, Belmopan, Belize

Guderjan, Thomas H.

1996 Kakabish: Mapping of a Maya Center. In *Archaeological Research at Blue Creek, Belize. Progress Report of the Fourth (1995) Field Season*, edited by T. H. Guderjan, W. D. Driver and H. R. Haines, pp. 117-120. Maya Research Program, St. Mary's University, San Antonio.

Haines, Helen R.

2010a *The 2009 Spring Mapping Project of the Ka'Kabish Archaeological Research Project (KARP)*. Final Report of the 2009 field season submitted to The Institute of Archaeology, NICH, Belmopan, Belize

2010b How the Other-Half Lived: Continuing discussions of the enigma that is Ka'Kabish. Paper presented at the Belize Archaeology Symposium, Belize City, June 30 – July 2, 2010.

Haines, Helen R., and Clifford Patterson

2008 Suburbia, Maya Style?: Results of the Preliminary Investigations at Ka'Kabish and the Intermediary Settlement Zone in the Lamanai Periphery. Paper presented at the 73rd Annual Meeting of the Society for American Archaeology, Vancouver, British Columbia.

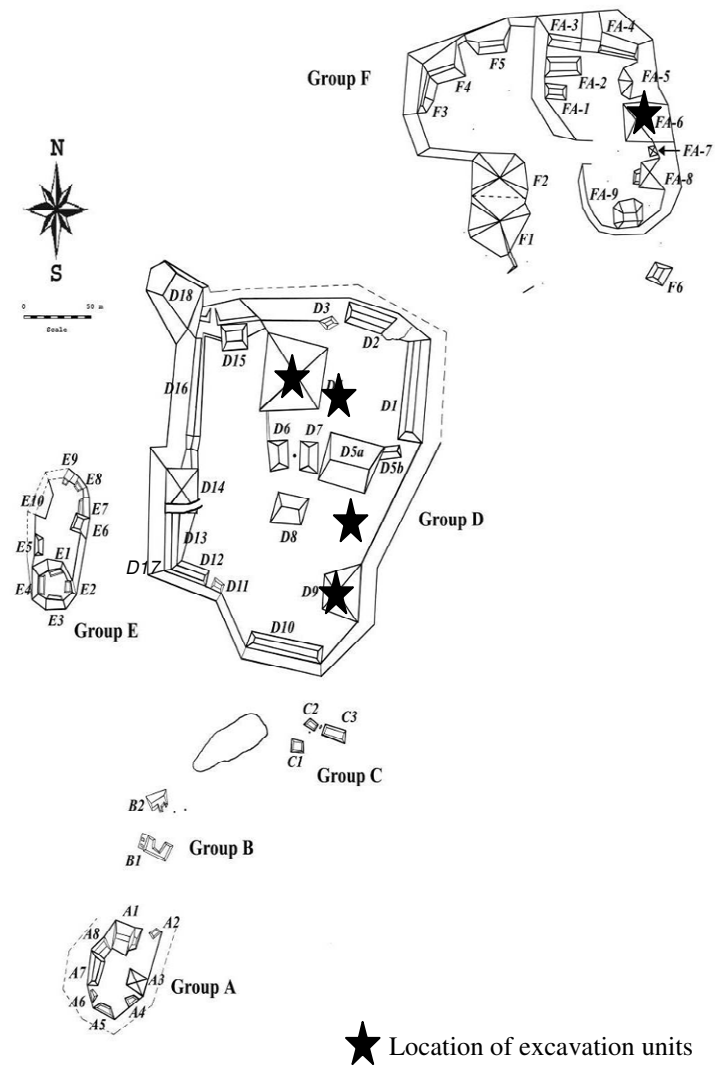


Figure 1. Location of 2010 Excavation Ares within the Ka'Kabish Site Core

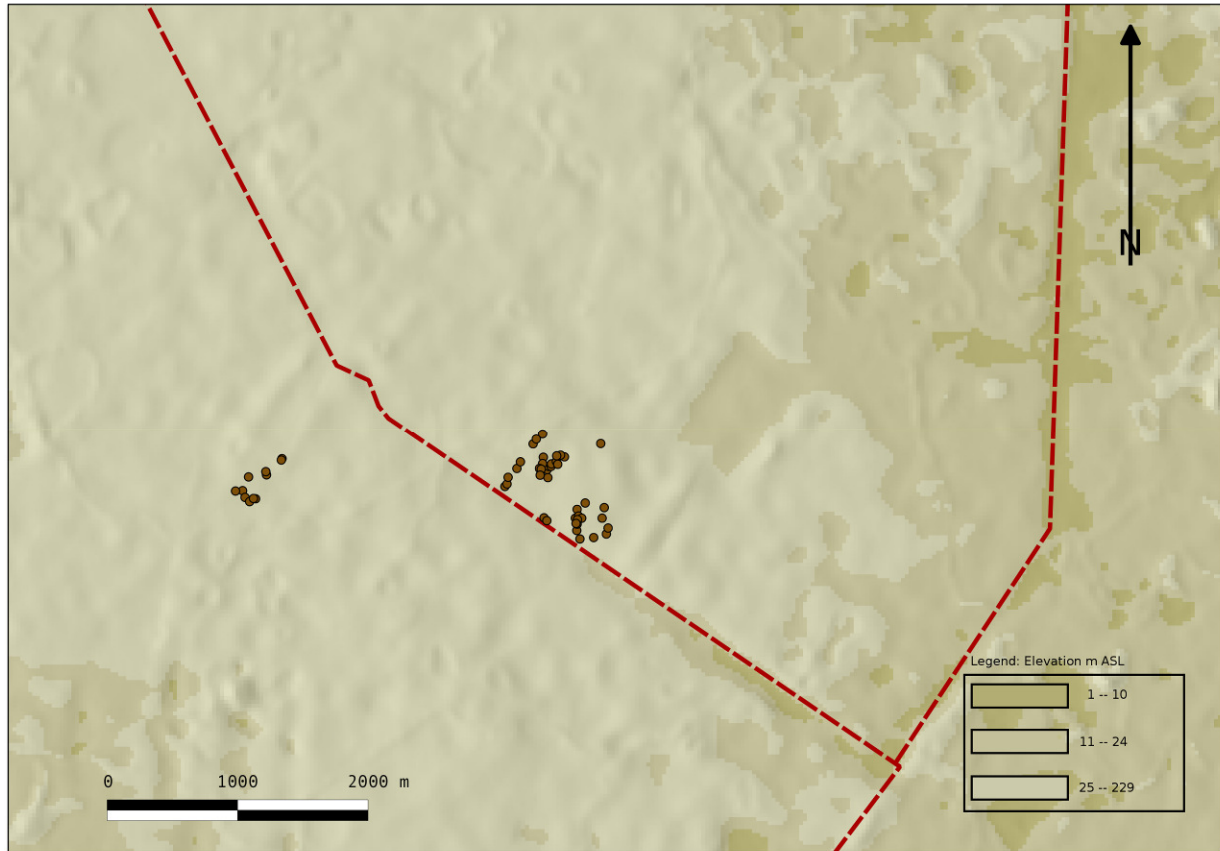


Figure 2. Map of the Settlement Zone Surrounding Ka'Kabish

CHAPTER 2

THE FINAL PUSH AT KA'KABISH: INVESTIGATIONS IN PLAZA D

by Cara G. Tremain

*Department of Anthropology
Trent University*

INTRODUCTION

Work in Group D during the 2010 field season included a multi-unit excavation in the plaza (hereinafter referred to as Plaza D), which took place over a three week period. Plaza D was selected for excavation in order to investigate the chronology of occupation at Group D. The excavation units were situated to the east of Structure D-4, and to the north of Structure D5a (see Figures 1 and 2). Mapping of this plaza area with a total data station also took place during the field season (Figure 2).

DESCRIPTION

Group D is the largest architectural unit at the site, containing 19 structures. The structures sit on an elevated platform, roughly five metres high, possibly once connected to Group F via a stairway or ramp on the northwest plaza edge (Haines 2007:14; 2010:11). Structures D1 to D7 form a restricted plaza area in the northwest of Group D, known as Plaza D, and this is considered to be the main plaza within the Group (Haines 2007:11). Almost all structures around Plaza D have suffered from repeated acts of looting.

METHODOLOGY

An area measuring 4m x 4m was set up for excavation, with the intention of stepping the unit in to 2m x 2m as the excavation deepened. The excavation unit was split into four quadrants, labelled by their direction: north-west (NW), north-east (NE), south-west (SW), and south-east (SE). Profile and plan maps of the north and east walls were drawn prior to when unit was stepped in, and when the unit reached bedrock. All maps were drawn on a scale of 1:20cm.

The units were dug in stratigraphic levels, following distinct visible soil and architectural layers. All excavated soil was screened through a ¼ inch mesh to increase the recovery of artefacts. A full collection strategy for lithic and faunal material was employed but a partial artefact collection strategy was employed for ceramics.

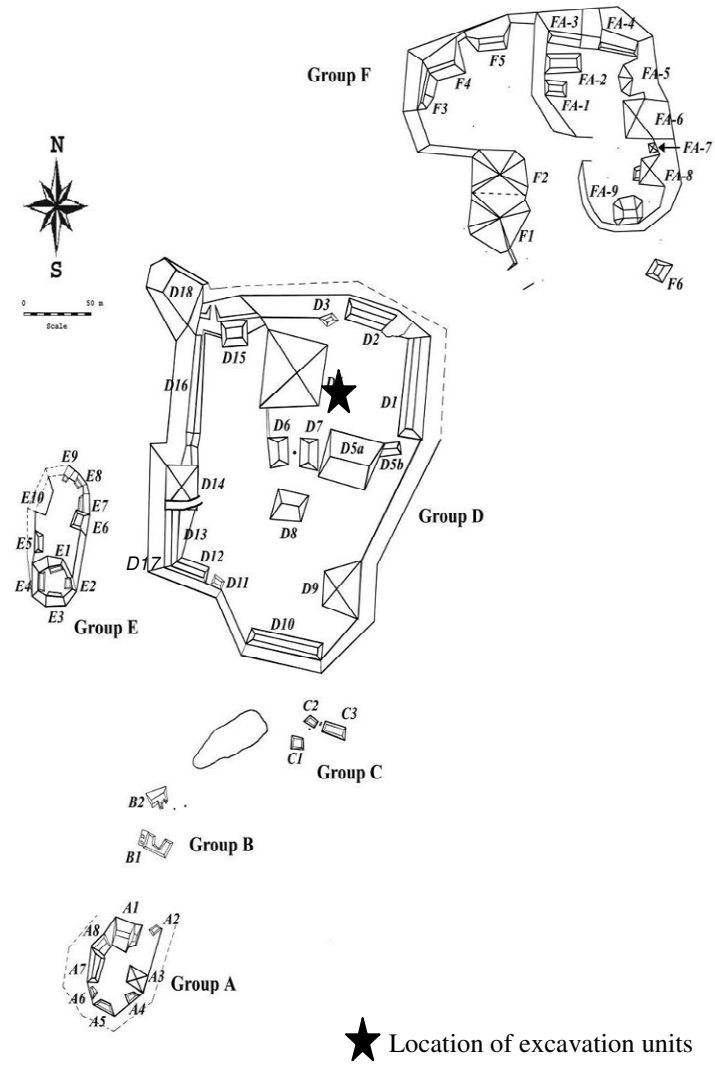


Figure 1. Location of Plaza D excavation units at Ka'Kabish.

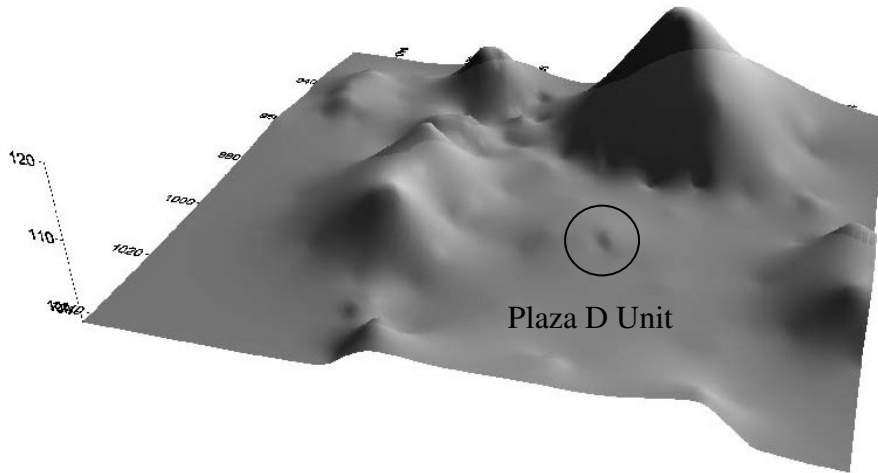
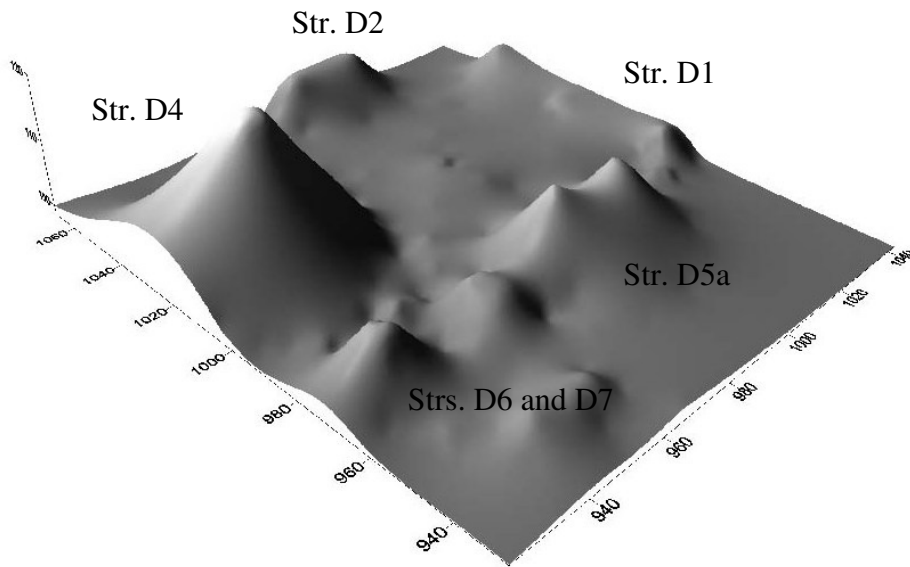


Figure 2. Contour map of Group D main plaza.
The top image is on a northeast-southeast axis, and the bottom image is on an east-west axis.

PLAZA D EXCAVATION

In total, eight plaza floors were uncovered before the excavation units reached bedrock (Figure 3). These floors have been labelled Plaza D-I (the earliest) to Plaza D-VIII (the most recent).

Plaza D-VIII

The first plaza floor was encountered at roughly 20-30cm below the surface. This floor was poorly preserved, and was only encountered partially in the NE and SW units. Below this floor were layers of sub-flooring construction aggregate, and both small and large rock ballast. Artefacts associated with this floor include sherds dating to the Early, Late, and Terminal Classic periods, and lithic tools manufactured from chert, chalcedony, obsidian, and ground stone.

Plaza D-VII

The unit was stepped in at the re-plastering of a second floor, roughly 130cm below the surface, to create a 2m x 2m unit. The re-plastering was poorly preserved and not encountered across the entire unit. The plaster sat directly on top of the second floor, roughly 130-140cm below the surface. This floor was well preserved, measuring 6-8cm in thickness. Below this floor was sub-flooring construction, consisting of fist-sized ballast and black soil. Artefacts associated with this floor include sherds dating to the Late Pre-Classic and Early Classic, and lithic tools manufactured from chert, chalcedony, and obsidian.

Plaza D-VI

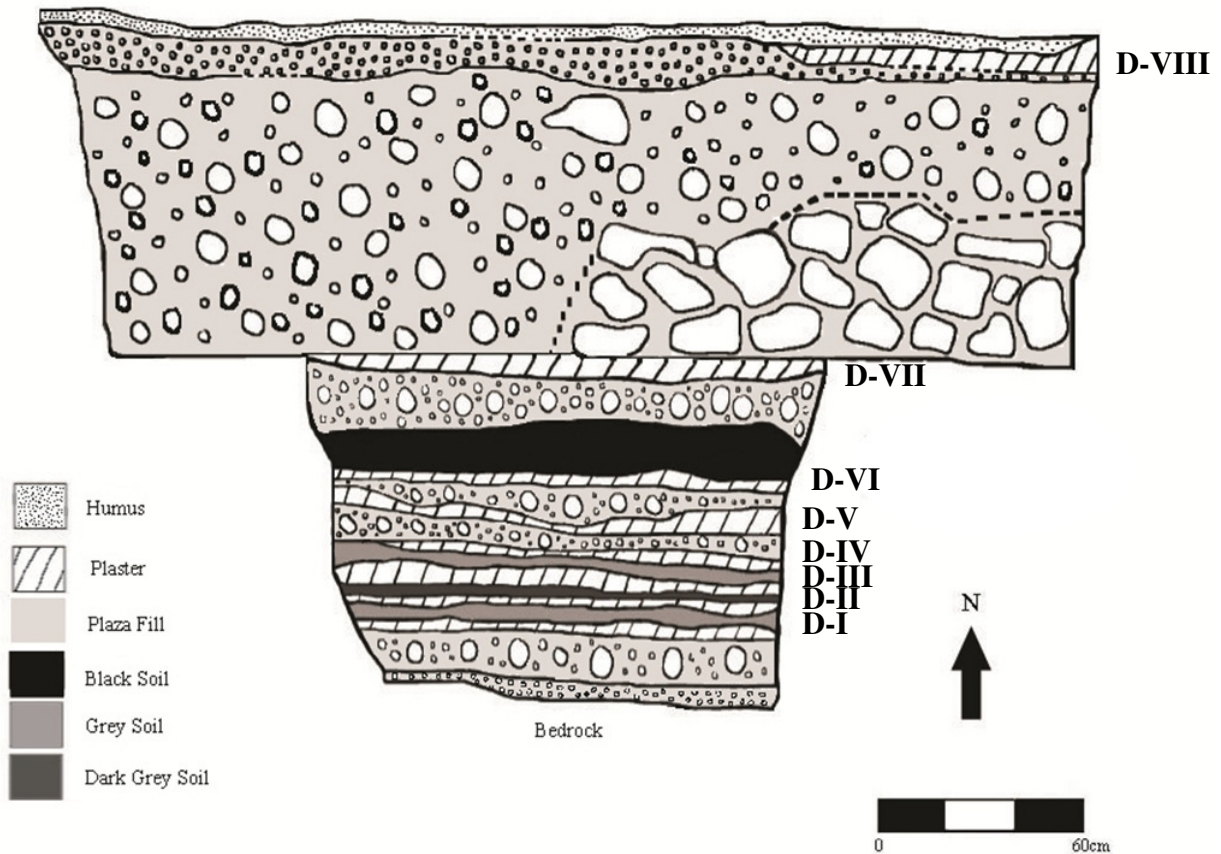
A third floor was encountered at a depth of roughly 170cm below the surface. It was well preserved, with a thickness of 4cm. Below this floor was a layer of sub-flooring construction, consisting of fist-sized ballast. Artefacts associated with this floor include sherds dating to the

Plaza D-V

A fourth floor was encountered at a depth of roughly 180-190cm below the surface. The floor had been re-plastered, but both the re-plastering and floor itself were poorly preserved and not encountered across the entire unit. The floor measured 4-8cm where visible. Below this floor was a layer of sub-flooring construction, consisting of fist-sized ballast. Artefacts associated with this floor include sherds dating to the Late Pre-Classic.

Plaza D-IV

A fifth floor was encountered at a depth of roughly 195-200cm below the surface. The floor was well preserved and measured 2-4cm. Below this floor was a thin layer of grey soil. Artefacts associated with this floor include sherds dating to the Late Pre-Classic.



*Figure 3. Profile Map of Plaza D Excavation Unit, North Wall.
Late Pre-Classic.*

Plaza D-III

A sixth floor was encountered at a depth of roughly 205-210cm below the surface. The floor was well preserved and measured 6-8cm. Below this floor was a thin layer of dark grey soil. No diagnostic sherds or lithic tools were collected.

Plaza D-II

A seventh floor was encountered at a depth of roughly 215cm below the surface. The floor was well preserved and measured 2-4cm. Below this floor was a thin layer of grey soil. Artefacts associated with this floor include one diagnostic sherd dating to the Late Pre-Classic.

Plaza D-I

An eighth floor was encountered at a depth of roughly 225cm below the surface. The floor was the best preserved of all and measured 4-6cm. Below this floor was sub-flooring construction consisting of fist-size ballast and small aggregate with dirt. Artefacts associated with this floor include a possible ceramic adorno and seven small shell disk beads.

The excavation continued until reaching bedrock at roughly 240-250cm below the surface, revealing a total of eight plaza floors.

OBSERVATIONS

The most noticeable observation is the significant change in construction practices between Plaza D-VII and Plaza D-VIII, which appear to date to the Late Pre-Classic and Terminal Classic periods respectively. Prior to the construction of the seventh floor, the layers of material between the floors are relatively thin and increase the height of the plaza only minimally. Therefore there appears to have been a significant change in Group D in the Terminal Classic, prompting a much larger construction effort for the final plaza floor.

CONCLUSIONS

The change in construction practices in Group D can be understood when looking at the larger region of Northern Belize. What is interesting about this region is the strong contrast between the continuity and discontinuity in occupation of sites during the Terminal Classic. The sites of La Milpa, Blue Creek, and Altún Ha all show evidence of abandonment, whilst the sites of Lamanai, Chau Hiix, and El Pozito show evidence of occupation into the Post-Classic (Andres 2005:21; Guderjan 2004:248; Hester *et al.* 1991:67; Pendergast 1986:224-226; Scarborough and Valdez 2003:10). Population expansion at sites in Northern Belize around the time of the collapse is thought to be due to an influx of people coming from the Petén area of Guatemala (Barrett and Scherer 2005:105; Chase and Rice 1985:1). Perhaps the increase in construction fill and effort at Ka'Kabish signifies an increase in population at the site in the Terminal Classic.

The change in construction practices at Ka'Kabish mirror similar changes that took place at La Milpa just prior to the Terminal Classic. La Milpa is considered to have been a modest sized centre in the

Early Classic, but major construction in the Late Classic altered the site to one of grander proportions (Hammond and Tourtellot III 2003:97-98). Therefore Group D may also have been altered to grander proportions in the Terminal Classic, perhaps stimulated or aided by a population increase.

The events taking place in the neighbouring regions during the Terminal Classic would no doubt have had an effect on the inhabitants of Ka'Kabish. Witnessing the failure and depopulation of neighbouring sites could have been a stimulus for this "final push" in Group D, perhaps fashioned to demonstrate political power, or to supplicate the deities, in an attempt to avoid a similar fate to nearby sites.

ACKNOWLEDGEMENTS

I would like to thank Dr. Helen Haines for providing me with the opportunity to participate in the Ka'Kabish 2010 field season, and for her input and suggestions. I would also like to thank Dr. Jim Aimers, Dr. Paul Healy, and Dr. Gyles Iannone for their input and suggestions. Danielle Budhoo, Alec McLellan, Laura Heath, and Maxime Lamoureux St-Hilaire were great co-workers and contributors to the investigations in Group D and also deserve recognition. Lastly, I would like to thank the residents of Indian Church, Belize, for taking great care of the Ka'Kabish team and contributing significantly to the investigations.

REFERENCES CITED

Andres, Christopher R.

2005 *Building Negotiation: Architecture and Sociopolitical Transformation at Chau Hiix, Lamanai, and Altun Ha, Belize*. Ph.D. dissertation, Indiana University Bloomington. University Microfilms, Ann Arbor, Michigan.

Guderjan, Thomas H.

2004 Public Architecture, Ritual and Temporal Dynamics at the Maya Centre of Blue Creek, Belize. *Ancient Mesoamerica* 15:235-250.

Haines, Helen

2007 The 2007 Spring Mapping Project of the Ka'Kabish Archaeological Research Project (KARP). Manuscript on file with the Institute of Archaeology, NICH, Belize.

2010 The 2009 Spring Mapping Project of the Ka'Kabish Archaeological Research Project (KARP). Manuscript on file with the Institute of Archaeology, NICH, Belize.

Hester, Thomas R., Harry J. Shafer, and Thena Berry

1991 Technological and Comparative Analyses of the Chipped Stone Artifacts from El Pozito, Belize. In *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*, edited by Thomas R. Hester and Harry J. Shafer, pp. 67-83. Prehistory Press, Madison, Wisconsin.

Hammond, Norman G., and Gair Tourtellot III

2003 Viewsheds and Watersheds: Topography and Cosmology in the Planning of the Classic Maya Cityscape of La Milpa, Belize. In *Espacios Mayas: Representaciones, Usos, Creencias*, edited by Alain Breton, Aurore Monod Becquelin and Mario Humberto Ruz, pp. 93-110. Universidad Nacional Autonoma de México, Mexico City.

Pendergast, David M.

1986 Stability through Change: Lamanai, Belize, from the Ninth to the Seventeenth Century. In *Late Lowland Maya Civilization: Classic to Postclassic*, edited by Jeremy A. Sabloff and E. Wyllys Andrews V., pp. 223-249. University of New Mexico Press, Albuquerque, New Mexico.

Scarborough, Vernon L. and Fred Valdez Jr.

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

CHAPTER 3

A LIGHT AT THE END OF THE TUNNEL: MAPPING OF LOOTERS' TRENCHES IN STRUCTURE D-4

By Cara G. Tremain

*Department of Anthropology
Trent University*

INTRODUCTION

Structure D-4, the largest structure at Ka'Kabish, has suffered from relentless bouts of looting. Concern with the destruction caused to this structure by looting has previously been reported (Pendergast 1991), but action has never before been taken. One of the primary concerns of the 2010 field season was to retrieve information from Str. D-4 by clearing and mapping its looters' trenches, which took place over a four week period. The objective was to define the chronological building sequences of the structure without having to create any further damage from excavation.

DESCRIPTION

Str. D-4 rises approximately 21 metres above the plaza floor, making it the focal point of Group D. The form and size of the structure indicate that it is a temple-pyramid. It lies on the west of what appears to be the main plaza group at the site, with the ballcourt (Strs. 6 and 7) to the south, a range structure (D5a) and small structure (D5) to the south-east, a long range structure (D1) to the east, and another range structure (D2) and small structure (D3) to the north-east (Figure 1). (An examination of one of the looters' trenches during an investigation by the Maya Research Program in 1995 reported at least three construction phases, the second earliest of which appeared to have been built on top of a cave (Guderjan 1996:117). Haines (2005:6) has suggested that the original form of Str. D-4 may have consisted of two parallel structures, between which existed a deep hole, which were then merged into one large building in a succeeding construction. Eight looters trenches of various sizes exist in this structure. The largest three are closest to the base, with the other five trenches located close to, or on, the summit of the structure.

METHODOLOGY

Work took place in the three large looters' trenches on the eastern side of the structure close to the base, identified as the North, Middle, and South Trenches (Figure 2). Profile maps were created for each side of the trench walls and plan maps were created for the trench floors (Figure 3). During mapping, interesting or potentially dateable material was removed from the building construction to aid dating of the construction phases. In most instances, structural instability meant it was not possible to map the entire length of the trenches. To gain an idea of the size of the unmapped areas, a tape measure was carefully laid along the trench floor to the limits of the trench and the remaining distance was recorded. All maps were drawn on a scale of 1:20cm.

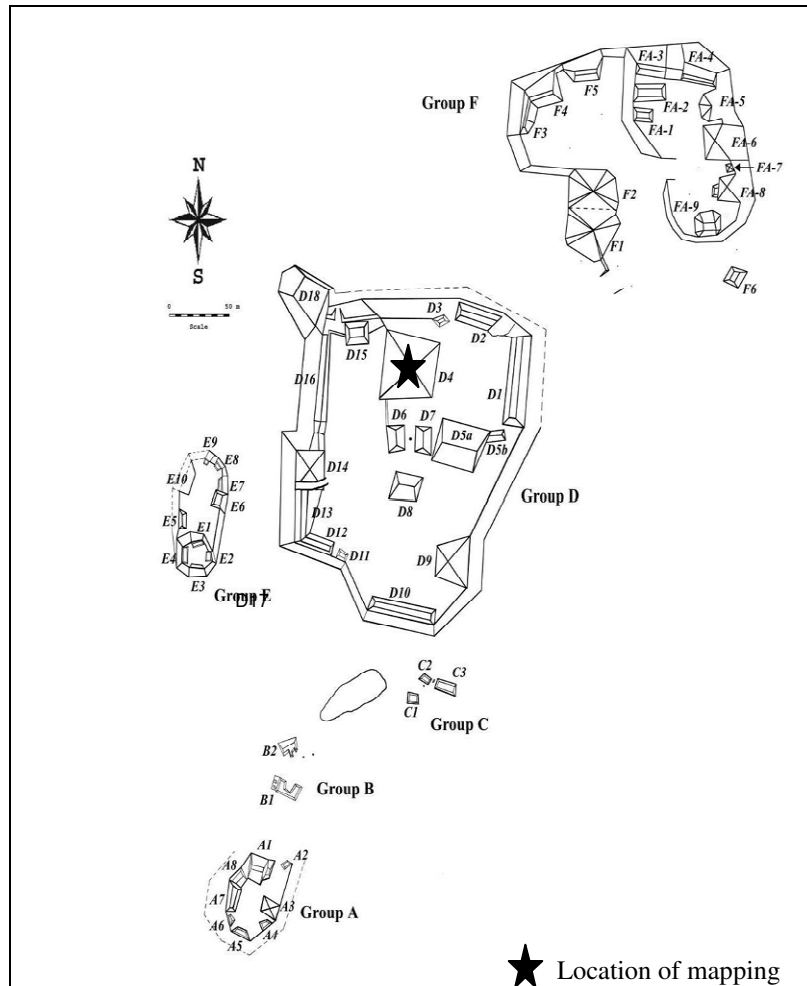


Figure 1: Location of mapping investigations in Structure D-4.

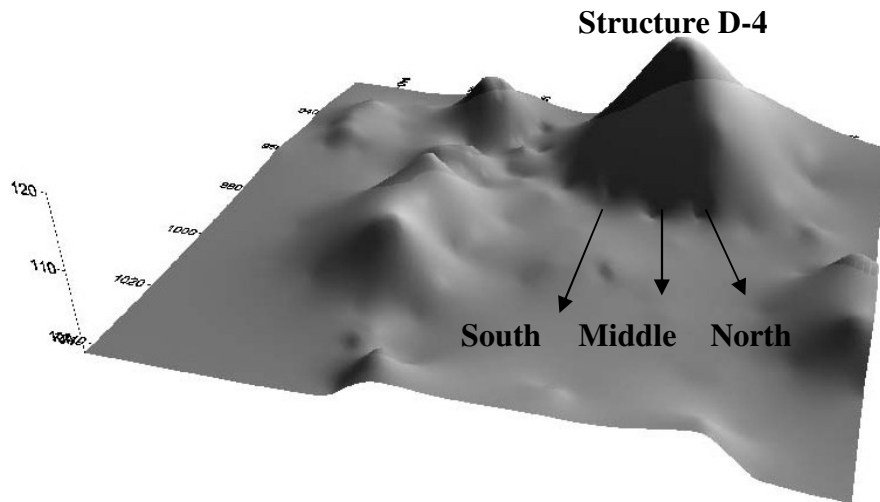


Figure 2: Contour map of Group D plaza.

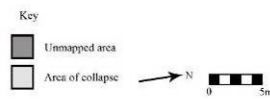
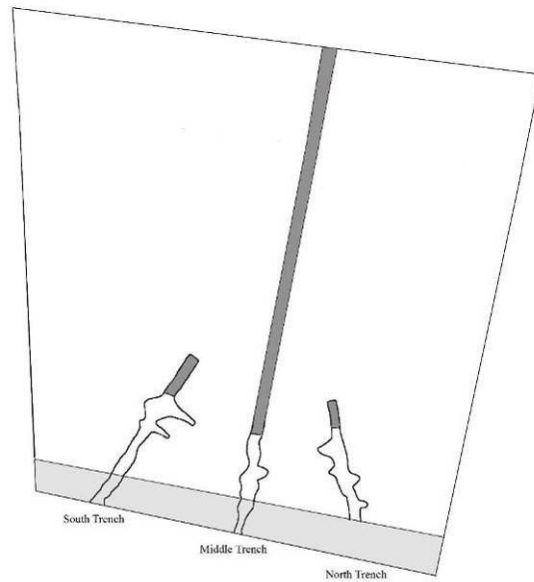


Figure 3. Plan maps of the South, Middle and North looters' trenches within Structure D-4. The trenches are shown to the correct scale, shape, and orientation.

The methods used for artefact collection were consistent across all trenches. All cleared soil was screened through a ¼ inch mesh to increase the recovery of artefacts. A full collection strategy for lithic and faunal material was employed but a partial artefact collection strategy was employed for ceramics.

South Trench

Back dirt was removed from an opening roughly five metres by one metre into the structure. Plan mapping took place for roughly 12m of the trench while profile mapping took place for roughly 15m. The profile maps (Figures 4 and 5) show that the outer construction was mainly large areas of white marl, in which there were large cut-stone blocks of masonry. These large stones covered a plaster surface of what appears to be an earlier construction. This interior plaster surface, on which some traces of red pigment were discovered, coats other large cut-stone masonry blocks within an area of grey marl and small-sized aggregate. The construction deeper into the tunnel was a mixture of dirt, and small to large-sized aggregate.

Middle Trench

Back dirt was removed from an opening roughly two metres by one metre into the structure. Due to the fact that the looters had made this trench much deeper, some plaza floors in connection with the structure were visible. Although information for roughly 9.5m of the trench was recorded, the length is considerably longer.

This trench was the longest of the three because it ran through the entire structure. Mapping for the entire length could not take place because fallen construction fill has created a large cavern in the centre of the trench, in which a great number of bats have taken residence. Nevertheless, information about the construction on the eastern side of the structure was recorded on video camera by Helen Haines, using the entrance to the trench on the west side of the structure. It was confirmed that the two halves of the trench met in the middle when light from the eastern opening could clearly be seen from the western side. Construction fill on the western side is reported to be similar as the eastern side, with no evidence of additional construction episodes.

The profile maps (Figures 6 and 7) show that the outer construction was composed of large amounts of white marl, in which there were large cut-stone blocks of masonry. This white marl covers a thick plaster surface of what appears to be an earlier construction. This plaster surfaces coats other large cut-stone masonry blocks within an area of grey marl and both small and large aggregate. There is another thick plaster surface deeper into the tunnel, coated by large aggregate. This plaster surface coats another area of grey marl with large aggregate.

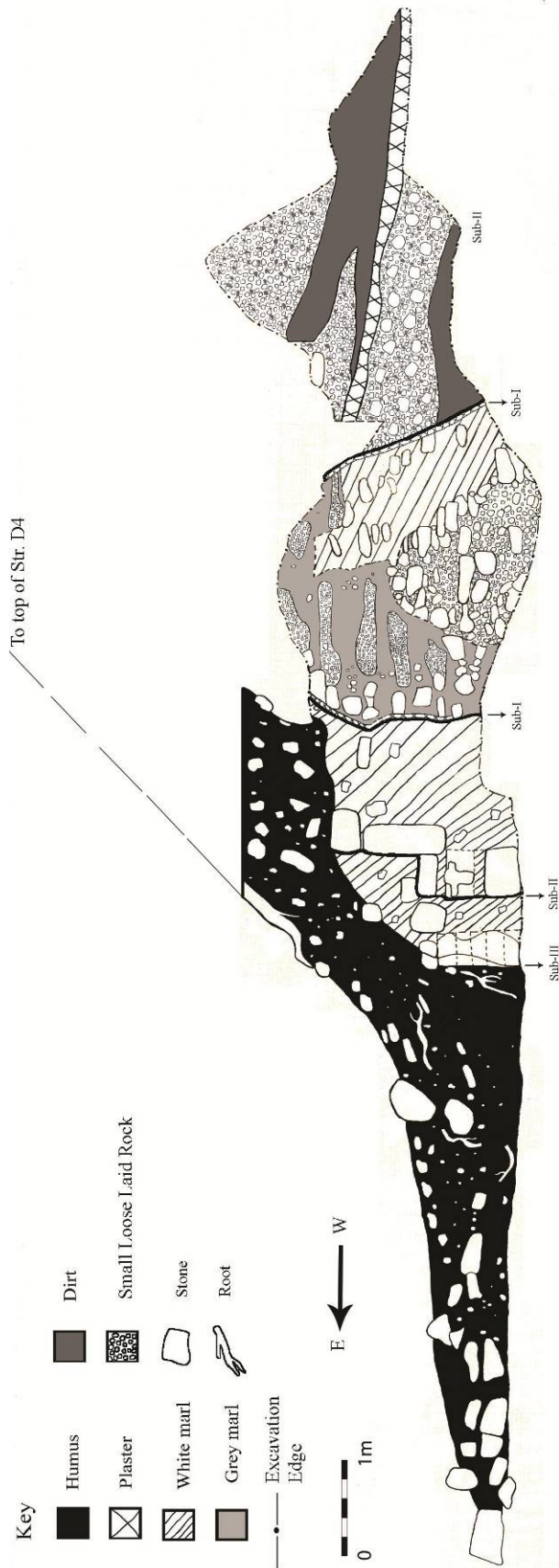


Figure 4. Profile map of Structure D-4 South Looters' Trench, South Wall.

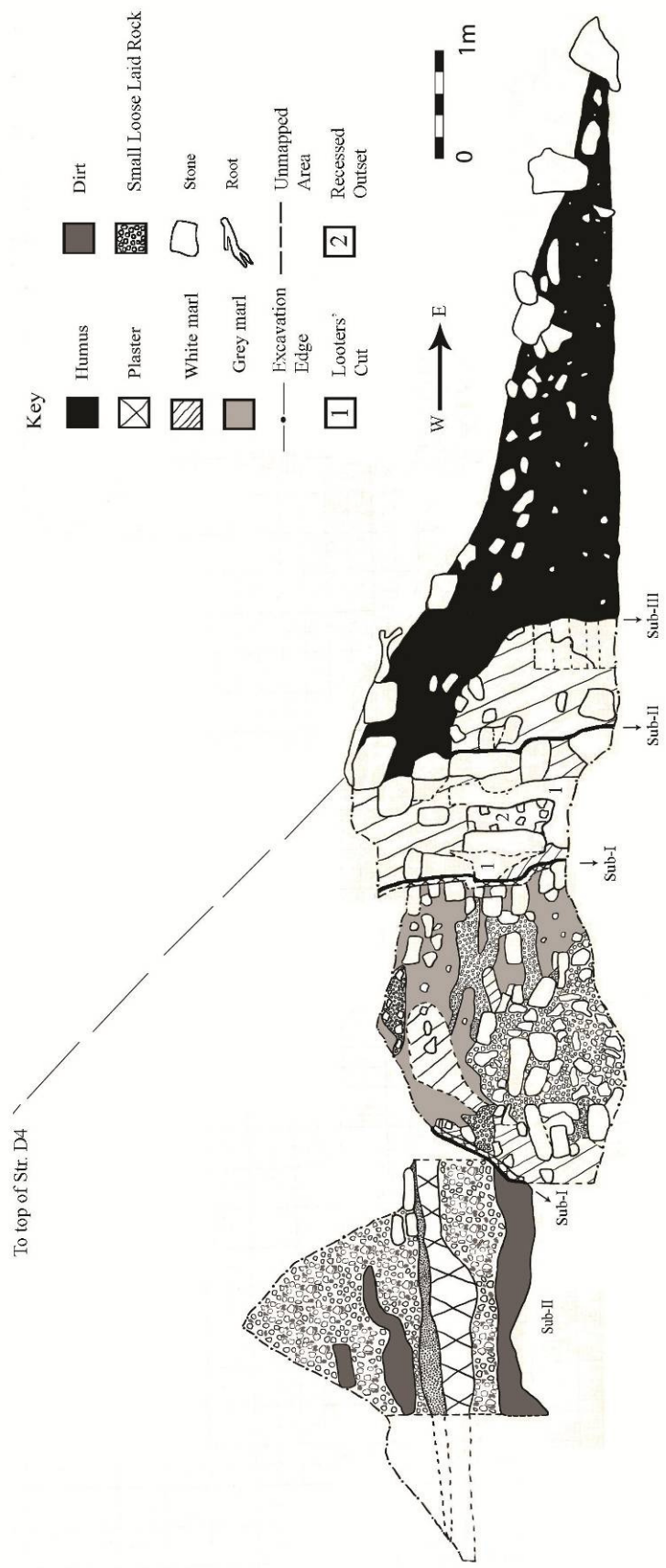


Figure 5. Profile Map of Structure D-4 South Looters' Trench, North Wall

North Trench

Back dirt was removed from an opening roughly one and a half metres by one metre into the structure. Profile and plan mapping took place for roughly 8.6m of the trench. The profile maps (Figures 8 and 9) show that the outer construction was mainly large areas of white marl, in which there were large cut-stone blocks of masonry. This white marl covers an area of grey marl. Within the grey marl was both small aggregate and large cut-stone masonry blocks. It covers a plaster surface which appears to be an earlier construction. Behind this plaster surface was white marl coating an area of grey marl, which contained both small and large aggregate.

OBSERVATIONS

Str. D-4 appears to have had three different construction episodes, which have been labelled Sub-I, Sub-II, and Sub-III. The numbers correspond to temporal constructions, with Sub-I referring to the earliest construction, and Sub-III to the latest (or most recent) construction. There was a paucity of artefacts inside the construction fill of this structure, making dating difficult.

Sub-I

It appears that Sub-I was a fairly small and narrow construction, and is very clearly visible by thinly preserved plaster walls in the profile maps. The construction consists of small to large aggregate coated predominately with grey marl. This aggregate and marl appear to have been enclosed with large cut stones, and then covered in a layer of thin plaster. The traces of red pigment discovered on the plaster surfaces in the South trench correspond with this construction.

Artefacts associated with Sub-I include a lithic tool manufactured from chert. An unusual ceramic that was collected from within the Sub-I building construction of the South trench was a ceramic roller stamp (Figure 10). This particular style of roller stamp is the 'Stacked Parallel Line variety' (Smith 2009:59). The design on the roller stamp at Ka'Kabish is very similar to one found at the Middle Pre-Classic site of La Blanca in Guatemala (Love 2006:5; Smith 2009 Figure 14, image 125). Consequently, the roller stamp at Ka'Kabish is also likely to date to the Pre-Classic period and suggests that the Sub-I construction dates to the Pre-Classic period.

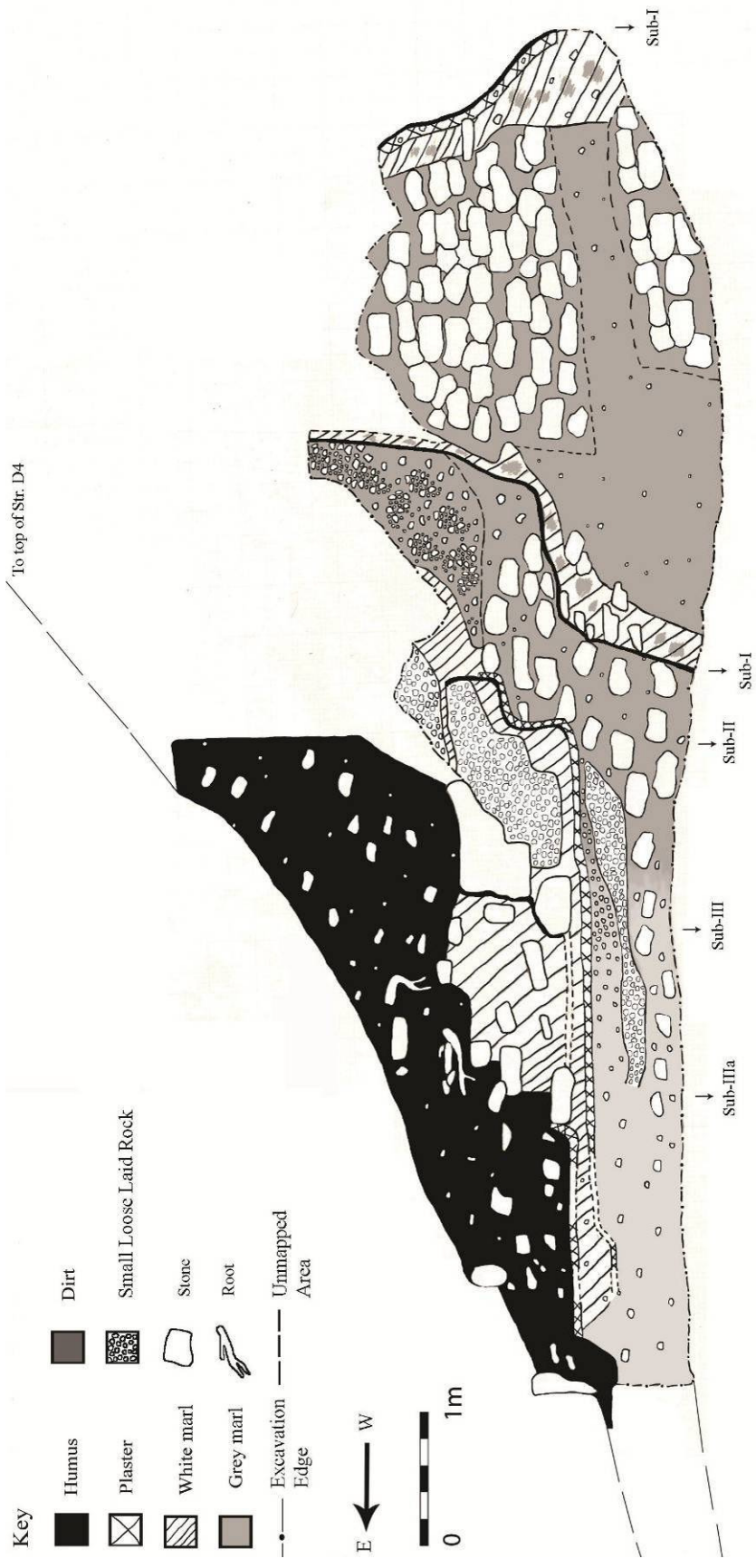


Figure 6. Profile Map of Structure D-4 Middle Looters' Trench, South Wall

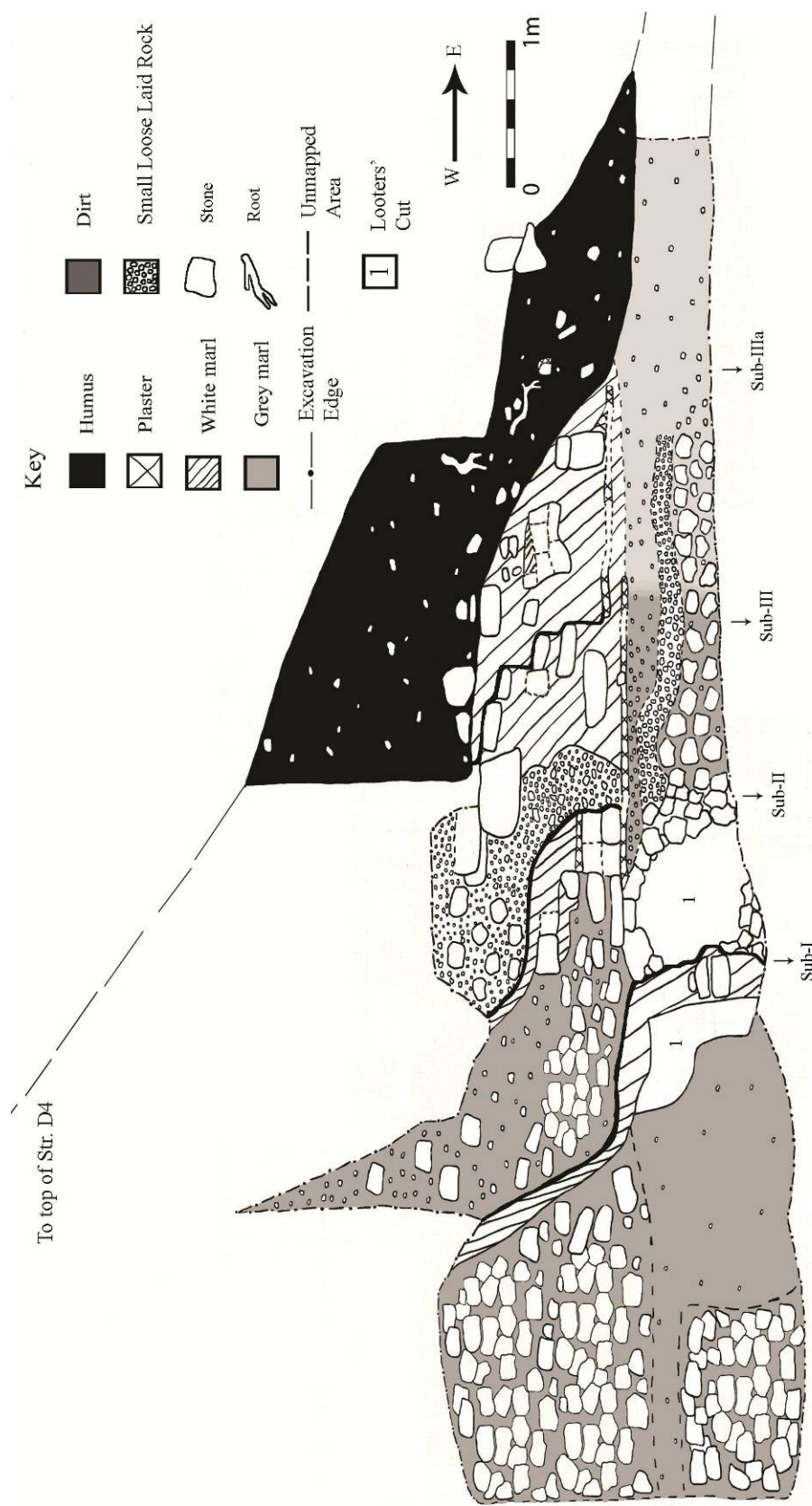


Figure 7. Profile Map of Structure D-4 Middle Looters' Trench, North Wall

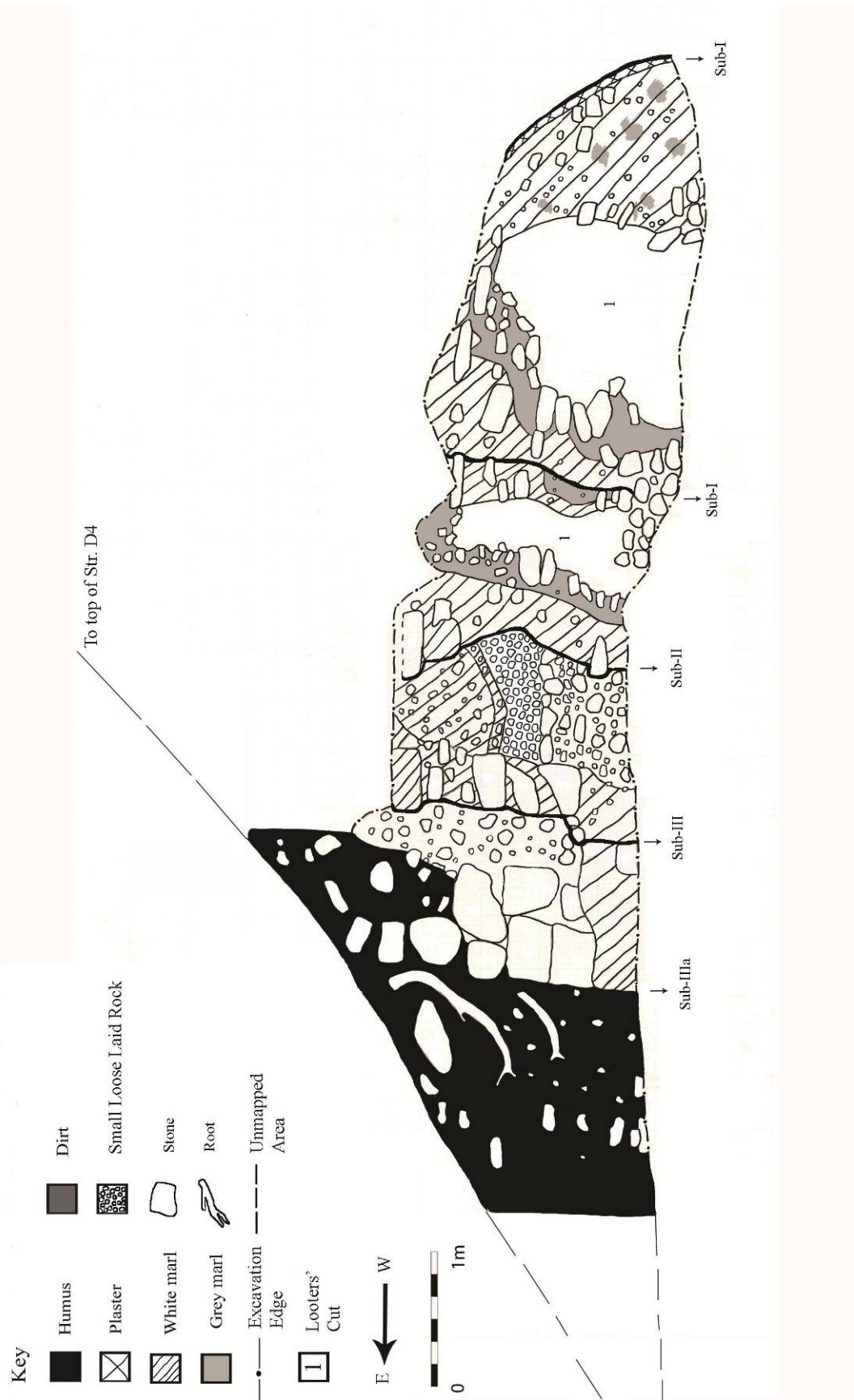


Figure 8. Profile Map of Structure D-4 North Looters' Trench, South Wall

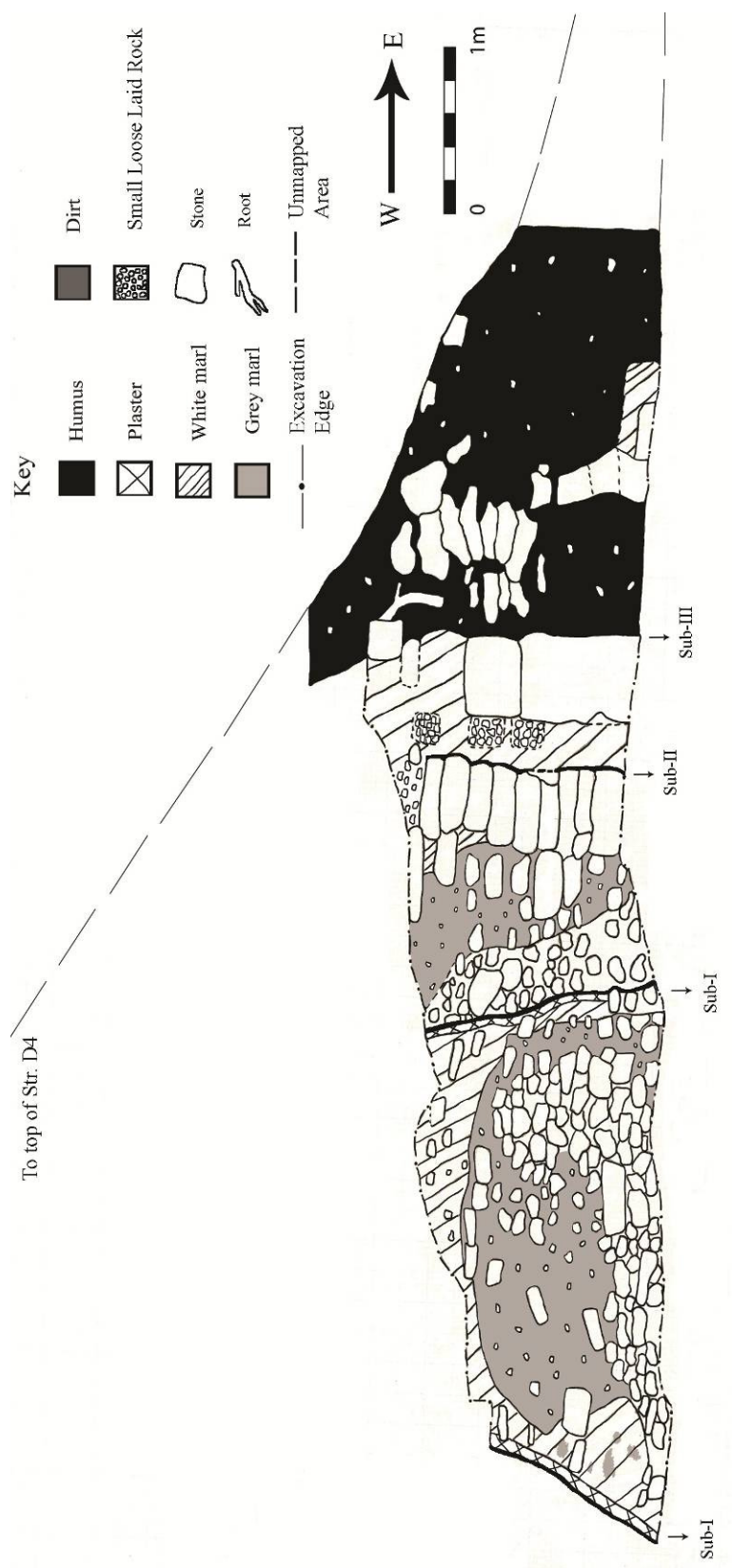


Figure 9. Profile Map of Structure D-4 North Looters' Trench, North Wall

Sub-II

Sub-II was a much larger construction and expanded Str.D-4 in terms of size, but the bulk of construction appears to have been on the west side of the structure. This indicates that the structure expanded in a westerly direction and only minimally in an easterly direction. At the eastern side of the structure the construction of Sub-II consists of small to large aggregate held together with grey marl, which is then coated with white marl. At the western side of the structure construction consists of layers of dirt, and small to medium sized aggregate held together in places with grey marl. Evidence for a stair associated with this structure can be seen in the profile maps of the Middle trench. Artefacts associated with this construction include sherds which appear to be diagnostic of the Late Pre-Classic or Early Classic, but were not confidently assigned to these periods, and lithic tools manufactured from chalcedony.

The plaza floors visible in the Middle trench correlate to this construction. Comparison of elevation levels and construction fill strongly suggest that these floors are related to the eighth plaza floor (Plaza D-VIII) uncovered in the plaza excavation unit in Group D. This plaza floor has been dated to the Terminal Classic based on recovered ceramics, which would suggest that the Sub-II construction also dates to the Terminal Classic period.

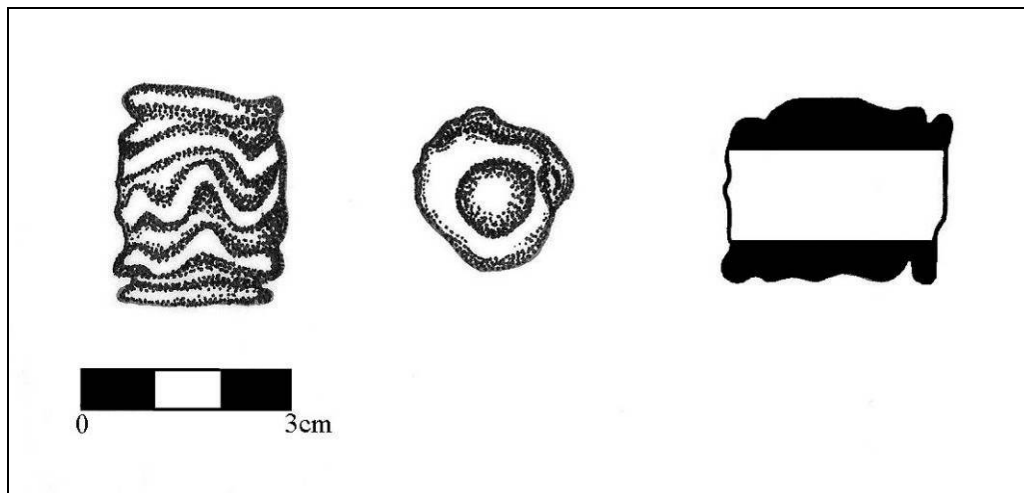


Figure 10. Ceramic Roller Stamp from Structure D-4, Sub-I.

Sub-III

The divide between Sub-II and Sub-III is only visible at the eastern ends of the profile maps, where the latter appears to have increased the size of Str. D-4 with large cut stones and small to medium sized aggregate layered with white marl. This divide can clearly be seen in the Middle and North profiles, but not the South profiles. The Middle Trench profile also shows evidence for what appears to be a re-plastering of Sub-III stair, since there is an extended area of white marl, and it has been distinguished by applying the term Sub-IIIa. Since it does not appear in the South or North profiles, it appears that this re-plastering took place only on the stair of Str. D-4. No diagnostic ceramics were recovered from this construction, but the dating of Sub-II suggests the Sub-III construction is likely to date to the Terminal Classic period or later.

When points of measurement taken during the mapping process are plotted onto the plan map, an idea of the position of each construction can be gained (Figure 11). When the position of trenches is removed from this plan map, it results in an even clearer idea of the position of each construction (Figure 12). The outset stair associated with Sub-III is clearly visible with the latter image, and shows the stair side and stair-side outset.

CONCLUSIONS

In more ways than one, there was a light at the end of the tunnel during the mapping of Str. D-4. The mapping of this structure has demonstrated that even heavily damaged structures and sites can provide valuable information. Consequently, although the effects of looting are negative, we can still provide a positive outcome.

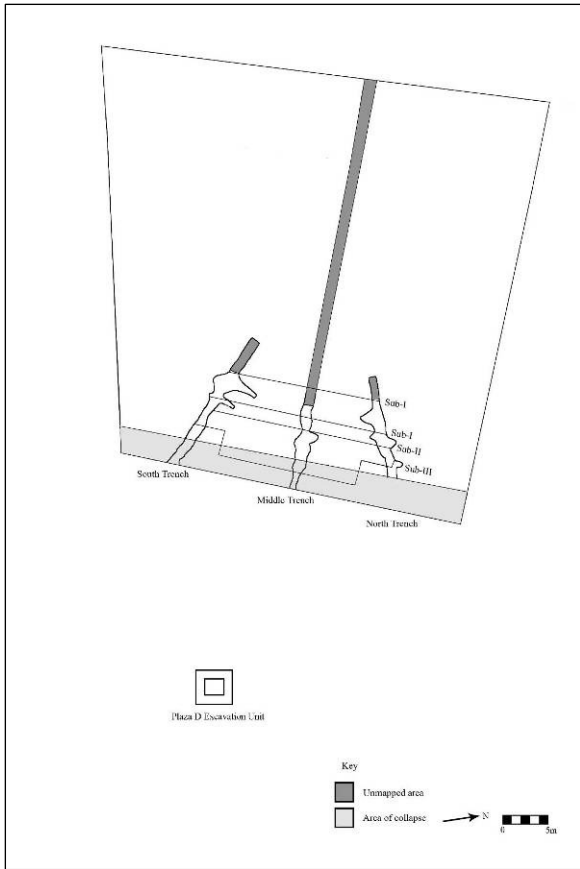


Figure 11. Measurements of Sub-I, Sub-II, and Sub-III imposed on top of the plan map.

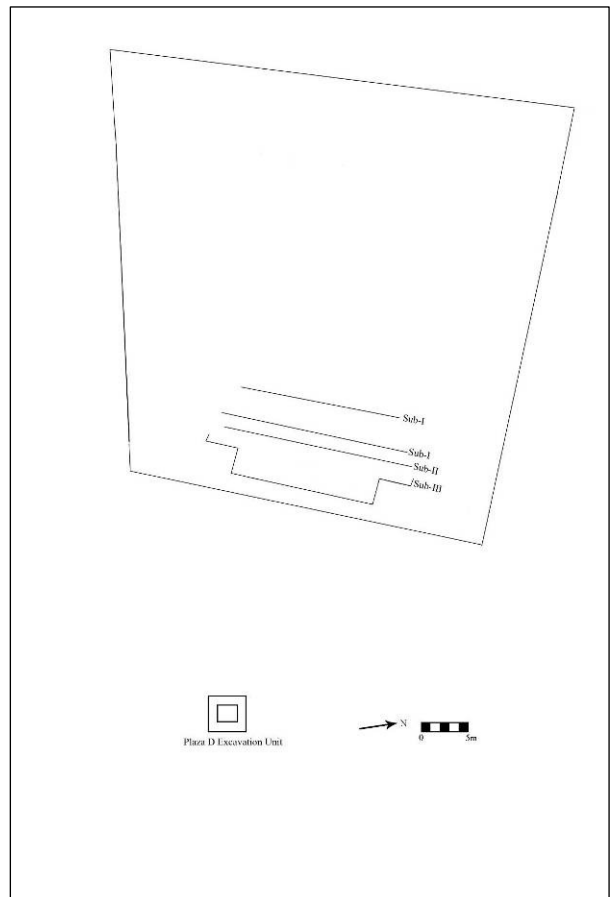


Figure 12. Measurements of Sub-I, Sub-II, and Sub-III imposed on top of the plan map, with the position of trenches removed.

ACKNOWLEDGEMENTS

I would like to thank Dr. Helen Haines for providing me with the opportunity to participate in the Ka'Kabish 2010 field season, and for her input and suggestions. I would also like to thank Dr. Jim Aimers, Dr. Paul Healy, Dr. Gyles Iannone, Dr. James Connolly for their assistance and suggestions. Danielle Budhoo, Alec McLellan, Laura Heath, and Maxime Lamoureux St-Hilaire were great co-workers and contributors to the investigations in Group D and also deserve recognition. Lastly, I would like to thank the residents of Indian Church, Belize, for taking great care of the Ka'Kabish team and contributing significantly to the investigations.

REFERENCES CITED

Guderjan, Thomas H.

1996 Ka'Kabish: Mapping of a Maya Center. In *Archaeological Research at Blue Creek, Belize: Progress Report of the Fourth (1995) Field Season*, edited by Thomas H. Guderjan, W. David Driver and Helen R. Haines, pp. 117-120. Maya Research Program, San Antonio.

Haines, Helen

2005 The June 2005 Reconnaissance of Ka'Kabish, Orange Walk District. Manuscript on file with the Institute of Archaeology, NICH, Belize.

2007 The 2007 Spring Mapping Project of the Ka'Kabish Archaeological Research Project (KARP). Manuscript on file with the Institute of Archaeology, NICH, Belize.

Love, Michael

2006 The Context and Associations of Monument 3 from La Blanca, Guatemala. Electronic Document <http://www.famsi.org/reports/05051/05051Love01.pdf>, accessed January 31st 2011.

Pendergast, David M.

1991 And the Loot Goes On: Winning Some Battles, But Not the War. *Journal of Field Archaeology* 18(1):89-95.

Smith, Suzanne Lee

2009 Patterns in Seal Iconography: A Frequency Model. Unpublished M.A. Thesis, Department of Anthropology, Texas State University San Marcos, Texas.

CHAPTER 4

EXCAVATION AND MAPPING OF STRUCTURE D-9

by Cara G. Tremain

*Department of Anthropology
Trent University*

INTRODUCTION

Although originally not intended to be part of the field season, looting of Structure D-9 between 2009 and 2010 emphasized the vulnerability Ka'Kabish continues to have at the hands of looters. Investigation in the structure was deemed necessary in order to preserve and record as much information as possible, before any more was lost at the hands of looters. The clearing and mapping of the looters' trench in Str. D-9 took place over a two week period, with the objective of defining the chronological building sequence. Excavation of the western face of the structure took place in unison with the mapping.

DESCRIPTION

Lying on the southeast corner of Group D, Str. D-9 is the second largest building in the group rising approximately 8.5m above the plaza floor (Figure 1). The form and size of the structure indicate that it is a temple-pyramid. A long range structure (D-10) lies to the south-west, and a small range structure (D-8) lies to the north-west. Consequently, Str. D-9 sits in a relatively open plaza area, with access from the north, south, and west sides. Two looters' trenches exist in this structure. One is a shallow trench in the upper east corner near the summit, and the other is a large tunnel which penetrates the structure about halfway up the western side.

METHODOLOGY

The area of excavation was roughly 9m by 2m, on a slope of 60 degrees. The area was dug in stratigraphic levels, following distinct visible soil and architectural layers. All excavated or cleared soil was screened through a ¼ inch mesh to increase the recovery of artefacts. A full collection strategy for lithic and faunal material was employed but a partial artefact collection strategy was employed for ceramics.

Profile and plan mapping took place over a distance of roughly 18m (Figures 2 and 3). Profile mapping took place for the north wall of the trench, because time constraints meant that only one trench wall could be mapped in detail. Due to the near identical construction on the south trench wall we are

confident we have captured the construction details for a proper interpretation of the construction events. Structural instability meant that it was not possible to map the entire length of the looters' trench. To gain an idea of the size of the unmapped area, a tape measure was carefully laid along the trench floor to the limits of the trench and the remaining distance was recorded. During mapping, interesting or potentially dateable material was removed from the building construction to aid dating of the construction phases. All maps were drawn on a scale of 1:20cm.

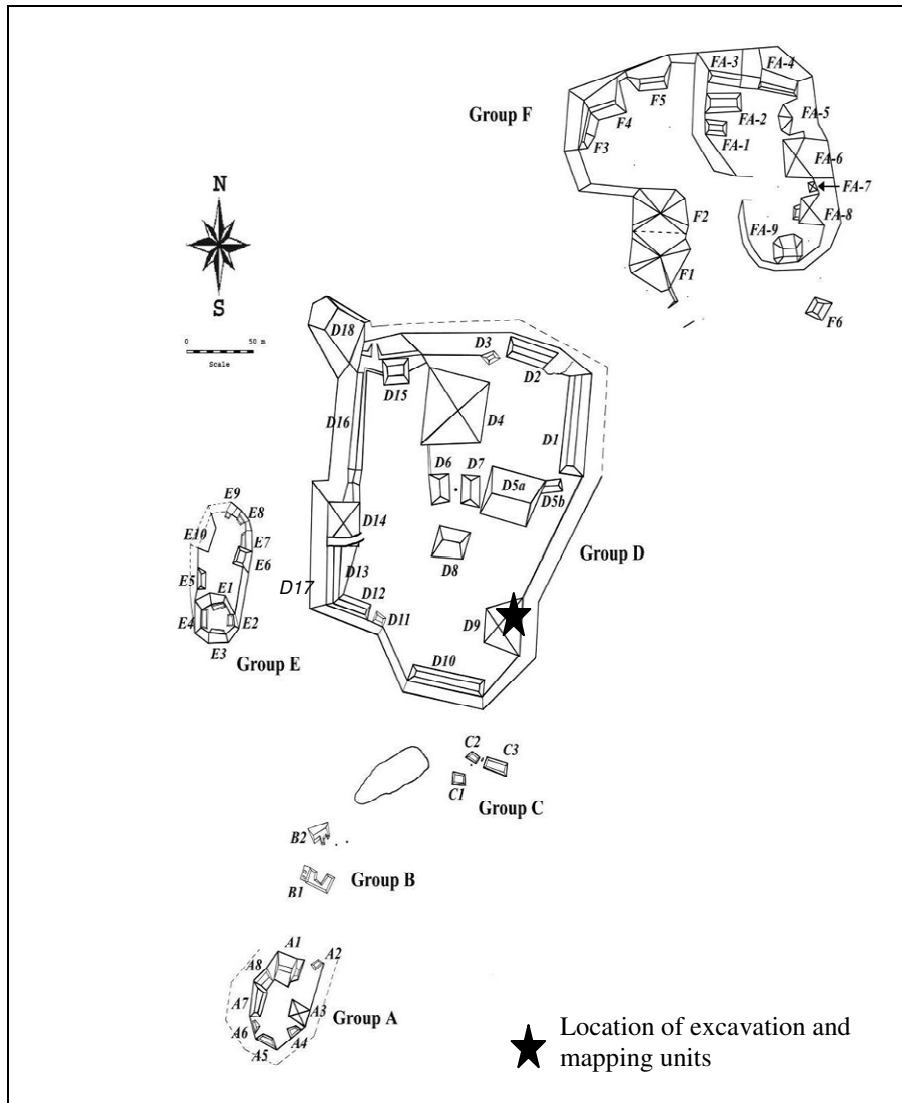


Figure 1. Location of excavation and mapping units at Str. D-9.

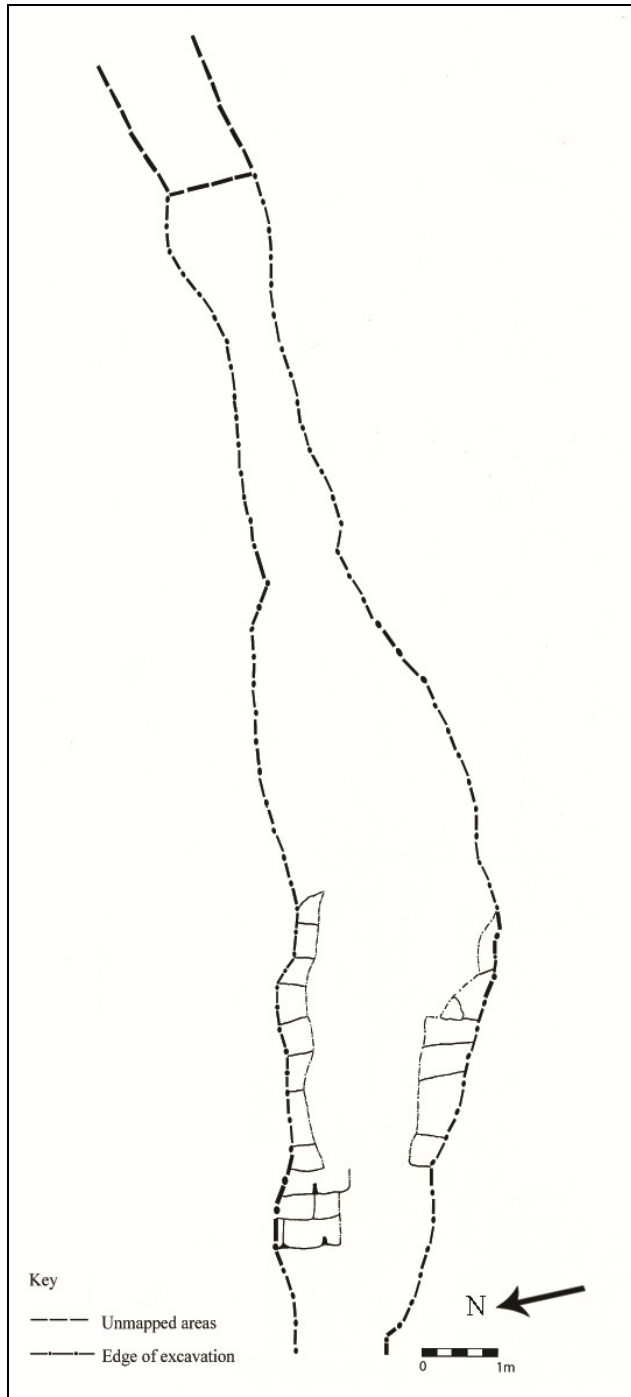


Figure 2. Plan map of Str. D-9 Looters' Trench.



Figure 3. Profile Map of Str. D-9 Looters' Trench, North Wall

EXCAVATION

Excavation began by removing the humus layer (level 1). Artefacts associated with this layer include lithic tools manufactured from chert and chalcedony, and sherds dating to the Middle Pre-Classic, Late Pre-Classic, and Early Classic. Below the humus layer was a layer of white fine construction fill (level 2), in which a stair began to be exposed (level 3). The latter two levels were classified as “collapse” because they are assumed to be mainly layers of collapse from the areas of higher elevation, as well as containing some backfill from the looters. Artefacts associated with these layers include sherds dating to the Middle Pre-Classic, Late Pre-Classic, Early Classic, and Late Classic, and lithic tools manufactured from chert, obsidian, and ground stone.

Excavation revealed 13 (possibly 14) steps visible on the north side of the stair. Only 11 of these were mapped on the plan map because the nature of the looters’ trench did not allow for these to be accurately measured. The south profile of the stair was not fully uncovered due to safety. On exposure of the stairs at the base of the structure, another looters’ trench was discovered running underneath the plaza floor (originally reported in the 1995 Maya Research Program report [Guderjan 1996], but had been obscured by fallen dirt from the looters). Investigation of this trench revealed at least seven visible plaza floors within a depth of 1.75m.

MAPPING

Based on observations made during mapping of the looters’ trench, Str. D-9 is believed to have had four different construction episodes. These have been labelled Sub-I, Sub-II, Sub-III and Sub-IV. The roman numerals correspond to temporal constructions with Sub-I referring to the earliest construction, and Sub-IV to the latest (or most recent) construction.

Sub-I

Sub-I is the most ambiguous construction because it is a very thick (roughly 60cm) plaster surface. Because of the amount of plaster devoted to it, it is unusual and may represent an important type of construction. Although the category of architecture is unknown, it will be treated as the earliest construction of Str. D-9 at present. A recent looters’ hole exposes the construction beneath Sub-I, where there is evidence for another plaster surface. Artefacts associated with Sub-I include sherds dating to the Late Pre-Classic, and lithic tools manufactured from chalcedony and ground stone.

Sub-II

Above Sub-I is the construction of Sub-II, which appears to have been part of a stair. Sub-II appears to have been re-plastered or re-modelled and this has been distinguished by applying the terms Sub-IIa

and Sub-IIb. The former refers to the earliest construction, and the latter to the later re-plastering/ re-modelling. The construction of Sub-IIa consists of small to large aggregate coated in places with grey marl. There is evidence of five plaster floors within this construction, which are re-plasterings of one another. There is evidence of burning below the earliest of these floors. Sub-IIb consists of a layer of white marl atop the stairs of Sub-IIa, suggesting that this is re-plastering/re-modelling rather than large expansion of the structure. Artefacts associated with the Sub-II construction include sherds dating to the Late Pre-Classic.

Sub-III

Sub-III also appears to have been part of a stair, based on the stepped portions of thin plaster visible in the profile map. It is distinguished from Sub-II by a thick layer of grey marl and small aggregate. There is no evidence of re-plastering of this construction.

Sub-IV

This is the latest construction and corresponds with the excavated final stair. It consists of small to large aggregate coated in places with grey mortar marl. Two plaster floors corresponding with this construction have been exposed by the looters. Small and medium-sized aggregate separate these floors, and perhaps originally connected to the Sub-IV staircase.

OBSERVATIONS

Several stages of construction took place within Str. D-9. Sub-I and Sub-II constructions appear to date to the Late Pre-Classic periods. Based on ceramics recovered from levels 2 and 3 of the excavation, which likely contained backfill from the looters' trench, Sub-III may date to the Early Classic, and Sub-IV to the Early or Late Classic. Unlike Str. D-4, abundant artefacts were placed in the construction fill of this structure.

CONCLUSIONS

Despite the continued looting at Ka'Kabish, we have been able to successfully salvage some information from Str. D-9 before any further information is lost. Consequently we can remain optimistic that there is more to learn about the structure and the site, despite the constant looting activities.

ACKNOWLEDGEMENTS

I would like to thank Dr. Helen Haines for providing me with the opportunity to participate in the Ka'Kabish 2010 field season, and for her input and suggestions. I would also like to thank Dr. Jim Aimers, Dr. Paul Healy, Dr. Gyles Iannone, Dr. James Connolly for their assistance and suggestions. I would also like to thank Danielle Budhoo for her contributions to the mapping and excavation of Str. D-9. Lastly, I would like to thank the residents of Indian Church, Belize, for taking great care of the Ka'Kabish team and contributing significantly to the investigations.

REFERENCES CITED

Guderjan, Thomas H.

1996 Ka'Kabish: Mapping of a Maya Center. In *Archaeological Research at Blue Creek, Belize: Progress Report of the Fourth (1995) Field Season*, edited by Thomas H. Guderjan, W. David Driver and Helen R. Haines, pp. 117-120. Maya Research Program, San Antonio, Texas.

CHAPTER 5

EXPLORATIONS OF TOMB FA-6/1

by Danielle Budhoo

*Department of Anthropology
Trent University*

INTRODUCTION

Initially, when the opportunity to excavate Tomb FA-6/1 arose, the expectation was that the tomb was a painted room that had been re-used as a burial chamber. The tomb had been looted, but there was a remote possibility that the looters of Str. FA-6 had missed the burial by tunneling too high into the vaulted room. Unfortunately, because the looters had encountered the burial, and had thoroughly looted both the skeletal remains and artifacts which might have accompanied the remains, we must focus attention on the grave itself. Using these architectural comparisons, in addition to analyzing the relatively sparse amounts of artifacts that were discovered in the looters backfill inside of the tomb will allow us to draw broader conclusions about Ka'Kabish than from simply reporting on the scant contents of the looted tomb.

TOMB FA-6/1

The tomb is buried in Structure FA-6 which is located in the northern side of Ka'Kabish in the acropolis of Group F (Figure 1). It is situated between Str. FA-5, which is approximately 7.5 metres tall, and the much smaller Str. FA-7, which is only 1.5 metres tall. Str. FA-6 is 4 metres south of Str. FA-5 and is rectangular in shape. Str. FA-6 is 27 metres long, north-south, and 20 meters from east-west. It is 9 meters tall, and like some of the other structures on the east side of the acropolis, the east wall of Str. FA-6 merges with the elevated acropolis platform, forming a steep drop from the temple-pyramid to terrain below the acropolis.

Str. FA-6 has been subject to much looter activity, which has been documented in the initial survey of Ka'Kabish (Guderjan 1996), and as of the 2010 field season, the structure had three looter tunnels on the west side, another on the south, and the longest on the east side. This looter tunnel on the east side of Str. FA-6 (Figure 2), allowed access to the grave, FA-6/1, without having to cause further destruction to the edifice (Figure 2). Because Str. FA-6 appears well over 9 metres tall from this side, due to the added height of the acropolis platform, the looters may have assumed it was the midline of the front of a temple-pyramid, instead of the rear, even though it was low on the structure, and approximately

at the same elevation of the Group F acropolis surface.

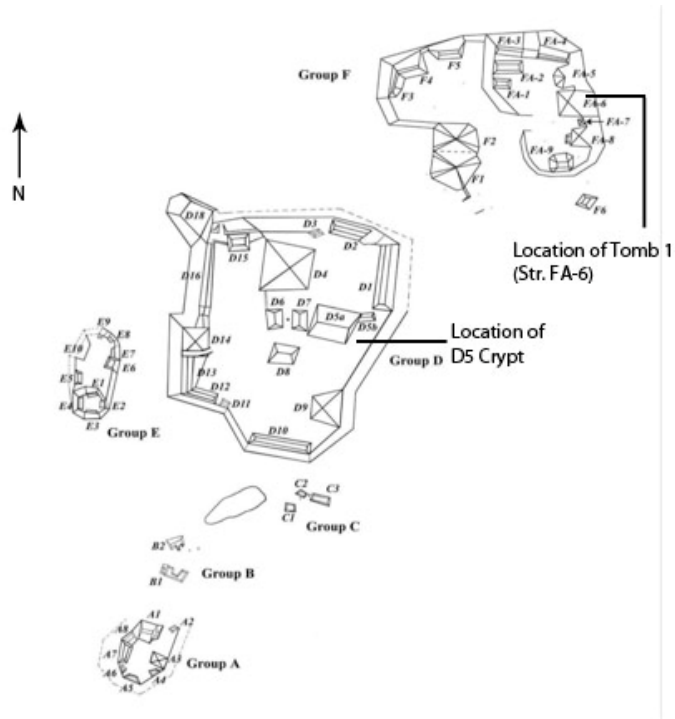


Figure 1. Ka'Kabish site map showing Str. FA-6 at the north end of the site (From Haines 2009).

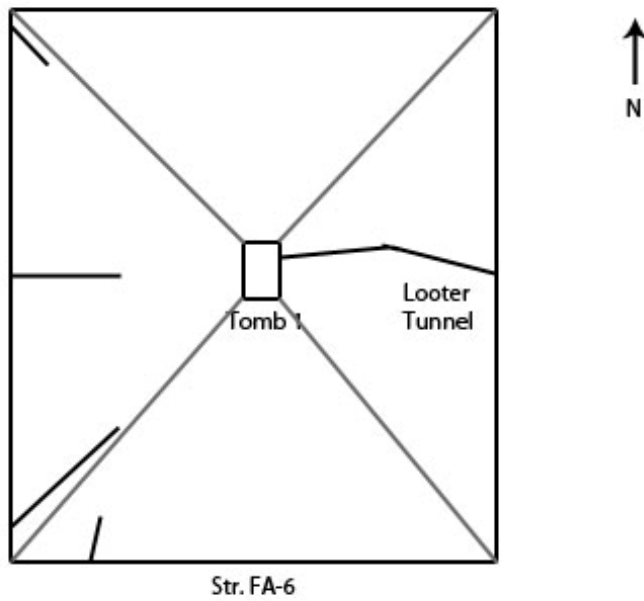


Figure 2. Approximate locations of looter tunnels in Str. FA-6

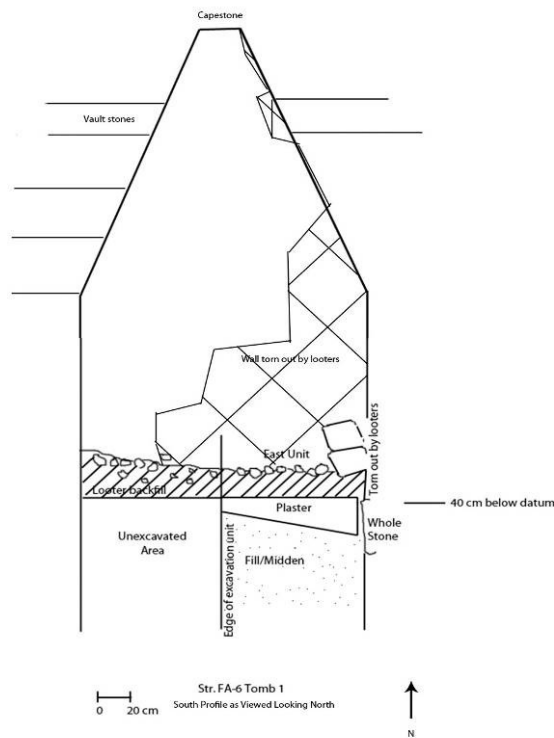


Figure 3. Profile of Tomb Fa-6/1

The dimensions of FA-6/1 are 3.6 metres long (north-south) by 1.3 metres wide (east-west), and the room was precisely oriented north-south, lengthwise. The ceiling of the tomb is 2.35 from capstone to a surface composed of looters' fill and collapse, and was vaulted, as suggested by the beam sockets on the eastern side of the room. There were approximately eight voids in the eastern wall, and these appear to have been beam sockets based on their location above the vault soffit. Other evidence of vaulting in FA-6/1 was the angled vault stones placed below the capstone, although this evidence was missing or destroyed on the north side by looters by the 2010 field season. The form of the tomb roofing strongly suggests vaulting, even in the absence of clear, cut vault stones. Looters had destroyed parts of the east and west walls, and had created a small alcove on the south wall next to the looters' entrance tunnel.

The western wall of the tomb was constructed with a narrow doorway and passageway that was 0.75 metres wide and 0.96 metres high from fill to the lintel. A passageway continued for approximately 2.5 metres into construction fill, and the walls appeared to have been constructed with cut stone, but the ceiling beyond the tomb doorway appeared to be construction fill (Figure 4). It was previously thought that the passageway was the original, formal entrance to the tomb, and further that the tomb was housed in a Late Pre-Classic structure (Haines 2009).



Figure 4. Str. FA-6/1 doorway on western wall as viewed from main chamber.

Small areas of the walls of FA-6/1 were painted a vivid orange-red over plaster and sections of this painting were found on the east wall and in the north-west corner of the room, suggesting much of the tomb interior was once painted. During excavation near the eastern wall, many small fragments of red-painted yellowish white plaster were encountered, and this again suggests that more of the tomb's surface was likely plastered and painted, however most of this painted plaster was not preserved on the tomb walls. The east wall, south of the looter tunnel, was also painted orange-red, and three glyphs in a darker brown-red were located on this surface (Figure 5).

The glyphs were analyzed by epigrapher Christophe Helmke of the University of Copenhagen, who argues that they record a portion of the name of the individual who was interred in the tomb, in a tradition similar to the painted tombs at Rio Azul (Adams 1990:93). Based on the damaged remnants of glyphs on the wall, Helmke (2010) suggests that it is likely that the entire tomb was not only painted orange-red, but also decorated with a much larger mural. The glyph fragments, he notes, were painted on a red-orange background, with the glyphs painted subsequently with a darker red-brown paint that seems to have bled into the background paint, indicating that the glyphs were painted while the stone surface paint was still wet. Helmke's (2010) analysis of the glyphs also proposes the name of the individual was a combination of the glyphs *K'awiil*, *jo'l*, and *chan*, meaning lord, skull, and sky, respectively.

Interestingly, stylistically and grammatically, the glyphs correspond with those of the Early Classic period, which is also the time indicated by the C^{14} dating of the charred wood from the ceiling shaft of the tomb.

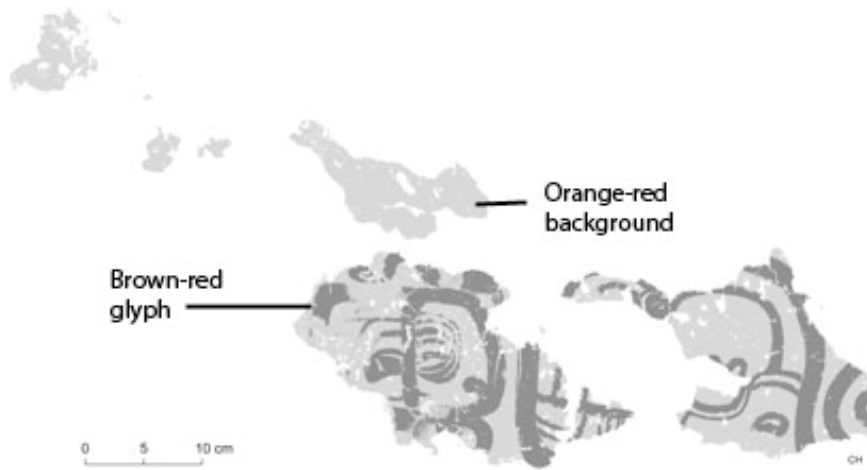


Figure 5. Str. FA-6/1 glyphs from east wall (Helmke 2010).

In the east wall of the tomb, south of the looters tunnel, a small area between several of the painted stones of the wall and the rest of the structure had been cleared by the looters as if to continue the tunnel around the outside of the room, but it appears that they abandoned this effort after less than half a metre. There was also a small trench started on the north wall of the tomb, presumably in order to find any wall caches that might have been associated with the tomb (Pendergast:1990). Large stones from the ceiling and the wall collapse prevented further investigation of these trenches due, again, to the potential instability of the fill.

There was a re-entry shaft in the south section of the tomb ceiling that was investigated in previous seasons (Haines 2000, 2009). Based on a visual inspection, Haines (2007) suggests that the construction of the re-entry shaft is consistent with other tombs built in the Maya lowlands which contained layers of wood, obsidian, chert, and shell, as well as dirt and plaster (Chase and Chase 1998, Haines 1995, Haines 1995; Guderjan 1991; Trik 1963; Smith 1950). Charred wood from the shaft provided a C^{14} date which ranged from 417 AD – 533 AD, with an intercept age of AD 475.

On the plastered floor of the tomb was a thick 5-15 centimetre layer of light grey, soft soil. Although there were no artifacts found on the floor surface, in 1994 the Maya Research Program collected obsidian blades which were then reported in a Ph. D. dissertation by Dr. Helen Haines (2000). Previous reports suggests that these blades likely came from the filled re-entry shaft in the ceiling of the tomb as looters searched for a cache (See Stuart 1998), resulting in the obsidian blades either falling from

the ceiling or being removed by the looter and abandoned on the surface.

EXCAVATION METHODOLOGY

Due to the potential instability of the tomb, we decided to open a small unit in the north end of the chamber, and descriptions of these units are provided later in this chapter. The initial size of the first excavation (Level 1, Unit 1) was over 1.5 m². The dimensions of the excavation were chosen to avoid disturbing any of the rubble created by the earlier looting, and to prevent further instability of the structure. Looters had damaged the north and south walls, as well as a painted section next to the tunnel on the eastern wall. Several of the roofing stones of the ceiling had also been pulled down to reveal layers of ballast material, as well as evidence for ancient Maya re-entry of the tomb.

Surface Fill (Level 1)

Once the size of the excavation unit was established, and unit lines were laid out, we used trowels to excavate the first level. This layer may have consisted of back dirt moved throughout the tomb by looter activity and further tunneling in the structure, although some of the material may have been dust sifted down from the ceiling over time. All soil collected from Unit 1 was screened through 2.5 cm mesh, and all ceramics, lithics, and bone were collected and labeled by unit and level. A plaster floor of the tomb was discovered beneath the first level causing the size of the unit within the tomb to slightly reduced in size (0.97 meters by 0.85 meters) in order to keep excavation time to a minimum and lessen the chance of disturbing the damaged walls and ceiling.

Plaster Tomb Floor (Level 2)

Level 2 of the unit was subdivided into 4 equal-sized units. This level was a cultural level, approximately 10-15 centimeters deep, depending on the thickness of the plaster surface. Red pigment that appeared to be a powder was found on the surface of the plaster. In addition, charring occurred all over the plaster floor surface of the tomb, and was particularly concentrated in the north-west corner of the tomb (Figure 6).

Samples of both the red pigment and the charred material were collected for analysis and results are pending. Within the second level, there were also pieces of charcoal imbedded throughout the plaster, and samples of this charred wood were also carefully collected for later analysis and potential radiocarbon dating. In order to excavate through the plaster floor, we used the trowel's edge rather than rock hammers in order to avoid causing reverberations that might destabilize the structural integrity of the tomb.

Interestingly, the plaster surface that composed the floor of the tomb did not join with eastern

wall. The loose construction fill of which Str. FA-6 was composed was found beneath the tomb walls, but not beneath the plaster floor of the chamber. This suggests that Tomb FA-6/1 was not simply an earlier room that had been reused as initially assumed. It appears to have been intentionally built as a burial unit.

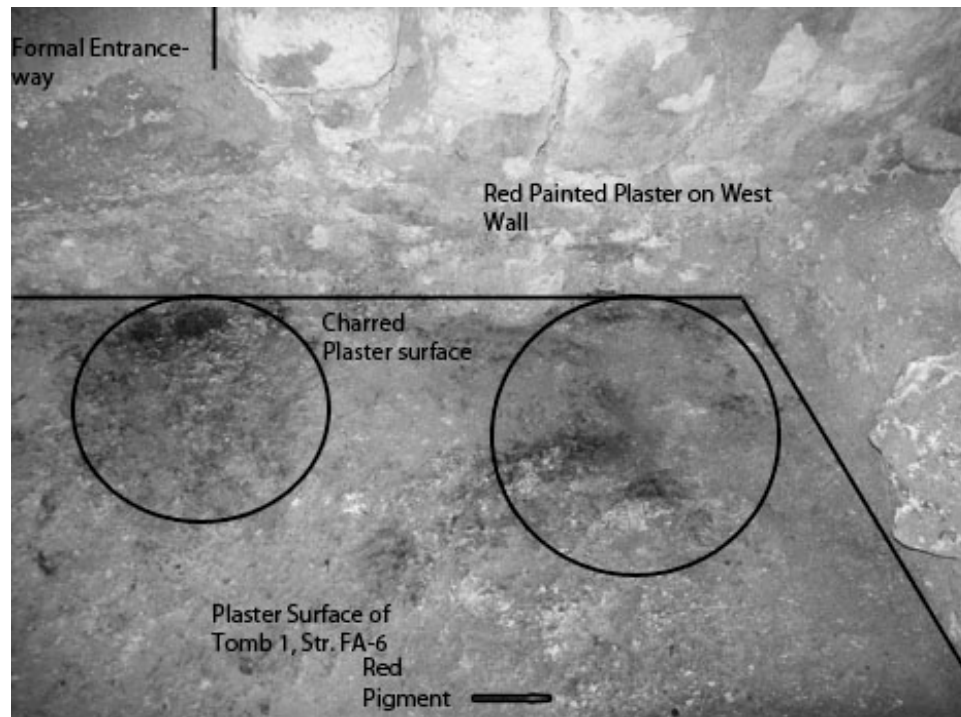


Figure 6. Charred floor in northwest corner of FA-6/1

Midden (Level 3-7)

Level 3 of Unit 1 cut below the plaster floor, and extended into a dark matrix, which contained large amounts of ceramic material but with few lithics. Further levels were excavated through the ballast, in 10-centimeter intervals to a depth of 1.76 m deep (Level 7). At this depth, excavation of FA-6/1 was closed as ceramic material was becoming increasingly sparse and due to concerns regarding the stability of the area.

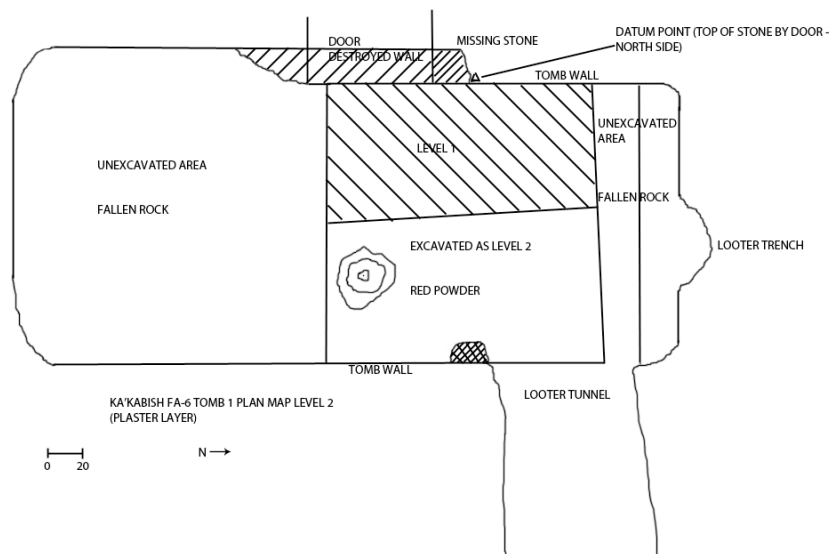


Figure 7. Plan map of FA-6/1 at Level 2

ARTIFACT ANALYSIS

A variety of material was collected for analysis. This material included, ceramics, lithics, and bone, as well as carbon, and red pigments. Samples of carbon were taken from the plaster flooring of FA-6/1, and this was sent to the NSF Arizona AMS dating facility at the University of Arizona to undergo radiocarbon dating, the results of which have yet to be returned.

Ceramics

Ceramics were washed and sorted for diagnostic features, and were then analyzed by Dr. James Aimers, University of New York Geneseo, the ceramic specialist for the Ka'Kabish Archaeological Research Project. Dr. Aimers used type-variety analysis in which ceramics were categorized into wares, groups, types, and varieties (Gifford 1976).

During the course of the excavation, 768 sherds were recovered. Twenty-six of these were from the construction fill of the looters tunnel, and four sherds were from the formal entranceway passage of Tomb FA-6/1. Ninety-two of the sherds found were excavated from the Level 1, directly atop the tomb's plaster floor surface (Figures 7 and 8).

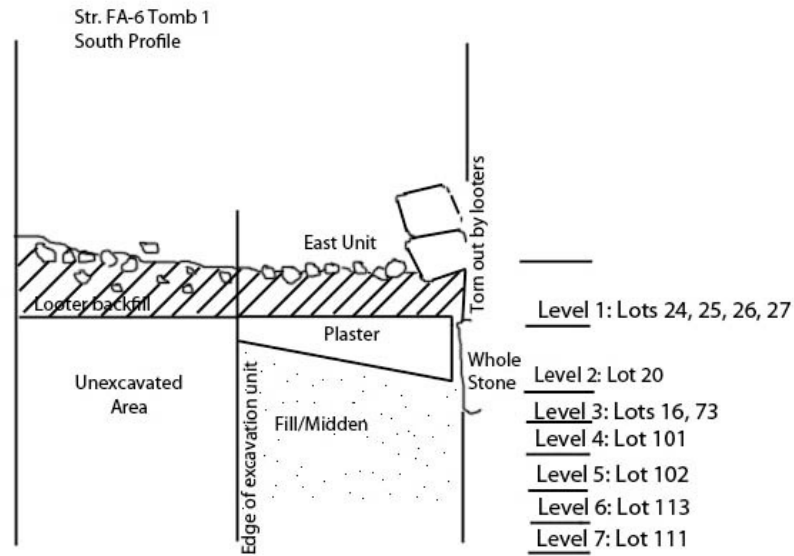


Figure 8. Str. FA-6/1 Lot numbers by excavation level

The remaining sherds from the tomb excavation were from the levels (3-7) beneath the plaster floor of the tomb. Dr. Aimers dated some of these sherds to the Late Pre-Classic or Early Classic period, and it is likely that the majority of this material came from vessels, which had accompanied the burial, and had simply not been removed by the looters because they were only pottery fragments. The lot numbers for each level are shown in Table 1.

The sherds that were found above the plaster floor were generally dated to the Early Classic period, and these ceramics had likely accompanied the individual interred in the FA-6/1 tomb. The deeper excavation levels beneath the tomb's plaster floor revealed ceramics from the Late Pre-Classic and Proto-Classic periods, suggesting that the tomb may have been constructed on the F Group acropolis after a buildup of these ceramic types had occurred. Unfortunately, we do not know how deep into the acropolis the tomb in FA-6 was burrowed, and whether the acropolis ceramic levels corresponded with those found beneath the FA-6/1 tomb floor.

Level (Lot #)	Ceramic Ware/Group/Type
Level 1 (24,25,26,27)	Dos Arroyos, Dos Hermanos Red, Sierra Polvero, Pucte Brown
Level 2 (20)	Sierra Puletan Red, Unslipped Pucte Brown, Balanza or Polvero Moceled
Level 3 (16, 73)	Dos Arroyos, Aguacate, Polvero, Sierra Red, Sierra Polvero, Flor Cream, Fowler Orange-Red, Caldero Buff Polychrome, Minanha Red, Lagartero Puncated, Dos Hermanos Red, Puletan Red on Unslipped, Aguila Orange
Level 4 (101)	Sierra Red, Aguila Orange, Yaloche Cream Polychrome, Minanha Red, Guacamallo Red on Orange
Level 5 (102)	Sierra Red, San Antonio Golden Brown, Polvero Black, Aguila Orange
Level 6 (113)	San Felipe Brown, Bullet Tree Red Brown?
Level 7 (111)	Red Lipped Cream

Table 1 Tomb FA-6/1 ceramics by level and ware

Ware	Ceramic Complex	Period
Dos Arroyos, Dos Hemanos, Pucte Brown, Balanza, Fowler Orange-Red, Minanha Red, Aguila Orange	Hermitage	Early Classic
Sierra Red, Polvero, Flor Cream	Barton Creek	Late Pre-Classic
Aguacate	Floral Park	Proto-Classic
San Antonio Golden-Brown, San Felipe Brown	Mount Hope	Late Pre-Classic-Proto-Classic

Table 2 Ceramic wares from FA-6/1 listed with ceramic complex and period

Lithics

Lithic material was initially sorted into raw material, chalcedony or chert, before being sorted into object class, such as primary flake, secondary flake, shatter, etc. No formal stone tools were found in the painted tomb or from the deposit below the tomb floor. Flakes were determined by the presence of a bulb of percussion, and were then classified based on the amount of cortex on the surface. Most of the material collected fell into the categories of flake or flaked pieces. A total of 66 pieces of lithic material

were found through the excavation of FA-6/1. Over half of this material was chalcedony rather than chert (Table 3), which is the more typical stone tool material of the Maya lowlands (McAnany 1989; Shafer and Hester 1983; Hester and Shafer 1984).

Level	Chalcedony Flakes	Chert Flakes	Chalcedony Debitage	Chert Debitage
1	26	5	0	1
2	0	0	1 (Fire Cracked)	1
3	12	7	0	2
4	2	0	0	0
5	0	0	0	0
6	1	0	0	0
7	4	3	0	0
Total	44	15	1	4

Table 3 Lithic flakes from FA-6/1

Thirty-six obsidian flakes were discovered only in three levels of the painted tomb. Most of these were blade fragments; no cores or cortex were found. During the 2010 field season excavation, specifically, 34 obsidian blades were collected in Level 1, however, it is quite possible that due to looter disturbance, stray blades were buried in deeper layers. One blade was found in Level 2, and another blade was found in Level 4. Haines reported in her Ph. D. dissertation that 431 fragments of obsidian were collected from the surface of the chamber floor, and these fragments appear to have been a part of the re-entry shaft with layers of shells, chert flakes, and carbon (Haines 2000:156). All of the discovered obsidian was visually assessed (for tests of the accuracy of visual sourcing see Braswell et al. 2000) by Helen Haines for origin, and seven (19%) were concluded to have originated from El Chayal, Guatemala, with one (3%) blade from San Martin Jilotepeque, Guatemala.

Bone

The few faunal remains that were discovered were fragmentary. These included two fragments of marine shell, and one bone (a small spine) was noted. Eight other bone remains, including cranial bone, were exported to Canada, to Trent University for identification. All pieces were confirmed to be being human in origin, and the tooth fragments were sent to Doctor Anne Keenleyside (Trent University) for positive identification. The remains, which were subjected to laboratory testing described in the following sections, consisted of human cranium fragments, a premolar, a first molar, and a second molar. Further orientation of the teeth could not be determined without the mandible and maxilla to which the

teeth would have belonged.

The human skeletal material recovered from FA-6/1 was determined by Dr. Keenleyside to be suitable for laboratory analysis. Once permission was obtained from the Institute of Archaeology in Belize to conduct destructive testing on the teeth and cranial fragments, I began preparation for testing these materials in consultation with Dr. Keenleyside. The cranial fragments underwent collagen extraction for for nitrogen and carbon isotope analysis. Unfortunately, due to poor preservation of the bone, the samples became sediment, and subsequently yielded no viable results.

The teeth were prepared for carbon isotope analysis by extracting carbonate from tooth enamel. This is done in order to analyze carbon and oxygen values following the method outlined in Koch et al. (1997). The two molars from FA-6/1 were cleaned then enamel was then ground from the teeth then bleached to remove organic contaminants from the teeth samples. Once cleaned and prepared the sample was then sent to McMaster University for final isotopic analysis. The results of these tests are still pending.

Red Pigments

Red pigment from the surface of the plaster floor of FA-6/1 and the walls of the tomb were collected. These samples were sent to the University of Western Ontario X-ray Fluorescence Laboratory for spectral analysis. Despite the appearance of red pigment to the naked eye, XRD test results from the University of Western Ontario indicated that the samples contained only calcite and quartz and not cinnabar or hematite as sometimes is found in ancient Maya burials (Chase, A 1992; Ruz 1965). Because the test results were surprising, the samples have been sent to the McMaster Nuclear Chemistry Laboratory for further XRF and SEM testing. The results from these additional tests are still pending.

SUMMARY

Evidence from the tomb suggests that it was constructed during the Early Classic period. It has yet to be determined if the carbon from the ceiling shaft is related to the construction of the tomb or part of a later re-entering. However, based on the material recovered from the midden the window of time for creation for the tomb, should the shaft be post-construction, is either the 4th or 5th centuries AD. This places the tomb firmly in the 'Dynasty building' phase of the Early Classic, the point in time when we see the great lineages of Tika (AD 379) and Copan (AD 426) being installed. Whether the tomb at Ka'Kabish is that of a dynastic founder or even member is indeterminate. While it is unlikely that we will ever know for certain the exact position of the tomb's inhabitant, it is clear that he was a person of importance to the community.

REFERENCES

- Adams, R. E. W.
1990 Archaeological Research at the Lowland Maya City of Rio Azul. *Latin American Antiquity* 1(1):23-41.
- Braswell, G. E., J. E. Clark, K. Aoyama, H. I. McKillop and M. D. Glascock
2000 Determining the Geological Provenance of Obsidian Artifacts from the Maya Region: A Test of the Efficacy of Visual Sourcing. *Latin American Antiquity* 11(3):269-282.
- Chase, A. F.
1992 Elites and the Changing Organization of Classic Maya Society. In *Mesoamerican Elites: An Archaeological Assessment*, edited by D. Z. Chase and A. F. Chase, pp. 30-49. University of Oklahoma Press, Norman.
- Chase, D. Z. and A. 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 S. D. Houston, pp. 299-332. Dumbarton Oaks, Washington.
- Gifford, J. C.
1976 *Prehistoric Pottery Analysis and the Ceramics of Barton Ramie in the Belize Valley*. Memoirs of the Peabody Museum of Archaeology and Ethnology Volume 18, Cambridge.
- Guderjan, T. H.
1991 *Maya Settlement in Northwestern Belize: The 1988 and 1990 Seasons of the Rio Bravo Archaeological Project*. Maya Research Program and Labyrinthos Press.
- 1996 Kakabish: Mapping of a Maya Center. In *Archaeological Research at Blue Creek, Belize. Progress Report of the Fourth (1995) Field Season*, edited by T. H. Guderjan, W. D. Driver and H. R. Haines, pp. 117-120. Maya Research Program, St. Mary's University, San Antonio.
- Haines, H. R.
1995 *Summary of Excavations at the Temple of the Masks. In Archaeological Research at Blue Creek Belize. Progress Report of the Third (1994) Field Season*.
- 2000 Intra-site Obsidian Consumption and Distribution Patterns in North-Western Belize and the North-Eastern Peten, Guatemala, Institute of Archaeology, University of London, London.
- 2007 Report to The Institute of Archaeology, NICH, Belize, of the 2007 Reconnaissance of Ka'Kabish, Orange Walk District. Report on file with the Institute of Archaeology, Belmopan, Belize.
- 2009 *The 2009 Spring Mapping Project of the Ka'Kabish Archaeological Research Project*. Submitted to The Institute of Archaeology, NICH Archaeology Museum and Research Centre.
- Hester, T. R. and H. J. Shafer
1984 Exploitation of Chert Resources by the Ancient Maya of Northern Belize, Central America. *World Archaeology* 16(2):157-173.
- McAnany, P. A.

1989 Stone-Tool Production and Exchange in the Eastern Maya Lowlands: The Consumer Perspective from Pulltrouser Swamp, Belize. *American Antiquity* 54(2):332-346.

Pendergast, D. M.

1990 *Excavations at Altun Ha, Belize, 1964-1970* 3. Royal Ontario Museum, Toronto.

Ruz, L. A. (editor)

1965 *Tombs and Funerary Practices in the Maya Lowlands*. Handbook of Middle American Indians, vol 2. University of Texas Press, Austin.

Shafer, H. J. and T. R. Hester

1983 Ancient Maya Chert Workshops in Northern Belize, Central America. *American Antiquity* 48(3):519-543.

Smith, A. L.

1950 *Uaxactun, Guatemala: Excavations of 1931-1937*. Carnegie Institute of Washington.

Stuart, D.

1998 "The Fire Enters His House": Architecture and Ritual in Classic Maya Texts. In *Function and Meaning in Classic Maya Architecture*, edited by S. D. Houston, pp. 373-425. Dumbarton Oaks Research Library and Collection, Washington DC.

Trik, A. S.

1963 The Splendid Tomb of Temple 1 at Tikal, Guatemala. *Expedition* 6:2-18.

CHAPTER 6

SURVEY AND SETTLEMENT HISTORY AT KA'KABISH, BELIZE

by Alec M' Lellan

*Department of Anthropology
Trent University*

INTRODUCTION

Investigations of settlements surrounding ancient Maya monumental centers have been conducted at numerous sites, such as Tikal, Caracol, Pacbitun, Quirigua, among others. These studies have helped archaeologists understand the occupational history of these sites, while providing holistic portrayals of ancient Maya communities. This report summarizes the results of the 2010 field season, which focused on a survey of settlements surrounding the ancient Maya site of Ka'Kabish, Belize. At this point, these results are preliminary in nature and require further analysis. A second field season will be conducted in the summer of 2011 to contribute to the study of Ka'Kabish's settlement zone. The results of these investigations will be published as a Master's Thesis for Trent University.

THE NATURE OF THE SETTLEMENT ZONE

The ancient Maya site of Ka'Kabish is located on a limestone ridge in North-Central Belize. The landscape of the area has undergone significant development over the course of the last several decades. The core of the site was damaged during the construction of a modern road, which connected the two contemporary towns of San Filipe and Indian Church. During this phase of modern development, at least one ancient structure was completely destroyed, while two others structures and a section of the south plaza were removed (Haines 2005). These structures were used as a temporary quarry for the construction of the road. Likewise, many of the structures located in the core of Ka'Kabish have been subjected to frequent looting. These activities have left noticeable scars on the architecture, permanently creating trenches often straight into, if not through, the center of most of the ancient structures. These looting operations continue to be pursued in the area and can likely be attributed to the ongoing growth of several communities surrounding the site. However, as Helen Haines (2005:2) has noted, the most noticeable danger to the preservation of the site is from encroaching farmland operations.

The investigation of the settlement surrounding Ka'Kabish was conducted in two specific locations, each of which was currently undergoing agricultural development. These two locations were controlled by two different landowners, who held very different opinions about the importance of ancient

Maya archaeological materials. This is important because the farming tactics employed by these owners ultimately shaped the nature of the preservation found in their fields. For example, one of the owners, who will be referred to as Blanco, seeks to situate his agricultural developments in such a way as to avoid any unnecessary damage to the archaeological record. In comparison, the other owner, who will be referred to as George, cleared large portions of the jungle prior to assessing the archaeological value of the landscape, thus, plowing, and sometimes bulldozing, significant ancient Maya structures. Also, while one owner seemed to view us as a comical nuisance, the other shared topographical information and showed us material evidence that he had found in his fields. This demonstrates an increasingly relevant point, especially when considering the continued agricultural development of the area: collaboration between archaeologists and landowners is vitally important, as it allows for more complete reconstructions of the past.

Blanco's fields are roughly 1 km south of the site core. These fields are significantly smaller and more segregated than George's fields, and generally range from 20-50 m in width, and 40-100 m in length. Blanco has been agriculturally utilizing the land for a longer period than George, as the latter had recently removed the jungle and was in the process of planting corn. Between each of Blanco's fields is a tree line that has been consciously kept to noticeably divide several plots of land. Often these tree lines contain the remains of ancient Maya mounds. One particular field (BF1) contains a cenote, which Blanco has assured us, is constantly replenishing throughout the year. Each field, as noted, has been recently cleared of produce and plowed. The plow usually reaches a depth 15 cm. Thus, cultural materials are sometimes brought to the surface through the continued use of the area. Although this presents an opportunity to gather significant quantities of material, usually the quality, or preservation, is lacking.

George's fields are roughly 0.8-1.5 km southeast of the site core. As mentioned, these fields are significantly larger and less segregated than Blanco's fields, generally ranging from 200-500 m in width, and 400-800 m in length. They have recently been cleared of jungle. After cutting down the primary growth, it is ignited, and then a crew of between 10-20 people walk the fields, while removing large rocks and other unwanted debris. This process was ongoing during our survey of the landscape. A Mennonite drove a tractor up and down the fields, while several non-Mennonites followed the vehicle, tossing unwanted materials into a large wagon. Following this process, corn was planted. Similar to Blanco's fields, these clearing procedures allowed for 100% visibility of the archaeological materials. Mounded structures were easily identified, and were usually accompanied by significant concentrations of ceramic and other materials. On a side note, as we conducted our survey and surface collections, corn was planted and began to grow. Following several weeks of investigation, the location of mounds became even more easily identifiable, as corn did not grow very well when it was planted on top on these structures. Perhaps, it may be more feasible to avoid planting crops in these areas, which, as a result,

might improve the preservation of the archaeological materials, especially in cases where structures have been bulldozed to plant corn on the remains of platforms.

Finally, as already mentioned, during the 2010 field season, several of Blanco's sugarcane fields were cleared for production. This presented an opportunity to survey and map large sections of the landscape. Likewise, George's clearing also presented an opportunity to survey and map large areas, with nearly perfect visibility. These cleared areas helped to define the limits of the survey zone; however, at the same time, these areas restricted the extent of the survey zone. Areas that had been recently planted, or were currently growing crops, were avoided. Thus, patches of the landscape have been archaeologically investigated, while others still require further survey. It is hoped that by continuing this strategy over several subsequent field seasons, a mosaic of interlocking survey patches will be created that will fully represent Ka'Kabish's settlement zone

SETTLEMENT STUDIES: GOALS AND RESEARCH QUESTIONS

Similar to Ashmore's (2007) study of settlement at Quirigua, most settlement pattern analyses seek to examine evidence of settlement distributions, "the way in which man disposed himself over the landscape on which he lived" (Willey 1953:1). Along with distributions, settlement studies can also help to define the occupational history of a site, as well as to determine the function of structures in ancient societies. The settlement pattern study conducted at Ka'Kabish focused on determining the domestic occupation history of the populations surrounding the site core. I attempted to address the following questions: How long was the settlement occupied? How dense was the occupation? Did areas of settlement remain occupied following the collapse of the monumental core zone, and if so, for how long? I also investigated issues of social and economic organization (i.e. community density, craft specialization), as well as if there were any links between Ka'Kabish and its neighboring site, Lamanai.

METHODOLOGY

Survey/Collection Strategies

Evidence of settlement surrounding Ka'Kabish was surveyed by a group of 3 people, walking in 5 m intervals. The size and extent of the survey zone was determined by the natural boundaries of the agricultural areas under investigation. Surveying locations were restricted by the ability to obtain permission from landowners, as well as the conditions of the fields (which needed to be cleared of crops). Ceramic, lithic, and faunal remains were collected from noticeable material-culture concentrations. These concentrations needed to roughly contain at least 5 pieces of material for every 30 cm, as smaller concentrations were less likely to represent permanent occupations. Concentrations were visibly represented by flagging each individual artifact prior to collection. Collection strategies focused on

visibly diagnostic artifacts that were larger than 5 cm in diameter. “Visibly Diagnostic” referred to artifacts that represented the neck, rim, or base of a vessel, or included bichrome, or polychrome features. Ceramic analysis was conducted by Dr. Jim Aimers.

Test-Pit Excavations

Analysis of collected materials helped to establish the chronology of the settlement zone. However, these dates related to the last periods of occupation. To expand on this chronology, we needed to conduct test-pit excavations at particular sites, with an interest in providing a representative sample of the area. However, due to weather conditions and landownership issues, we were unable to conduct test-pit excavations during the 2010 field season. During the 2011 field season, we plan to complete these test-pit excavations. To provide a representative sample of the settlement zone, settlement units will be labelled with a settlement unit type, using the classification model developed by the Xunantunich settlement survey (Ashmore et al. 1994). This model defined 7 types of settlement based on the number, arrangement, and height of the structures. For example, a type 2 settlement unit is defined as 2-4 mounds, which are informally arranged, and less than 2 m high. This model allows test-pit samples to be representative of the differing forms of social organization, while more accurately reflecting the built-environment of the ancient Maya. Also, by applying this model to the Ka’Kabish settlement data, we will be using a classificatory scheme that has been used at other sites, allowing for broader, regional, comparisons. I intend to test-pit excavate between 10-20% of the mounds uncovered through surface survey.

Recording/Mapping

Ceramic scatters and platform constructions were mapped by taking GPS coordinates. Aster satellite imagery and aerial maps were used to visually represent the distribution of settlement. A Theodolite was used to map Blanco’s field, including evidence of material concentrations, and other features such as road’s, fence lines, and water sources. The length, width, and height (if applicable) of ceramic scatters and platform structures was recorded. The primary orientation of these remains, if visible, was noted. I also recorded the approximate distance of the archaeological remains from known sources of water. Finally, I noted disturbance factors such as plowing, and the growth of crops, as well as the percentage of land that was visible (as sometimes secondary growth obscured areas that may have contained archaeological materials).

DATA

Prior to discussing some of the data recovered through survey and surface collections, I must stress that this data is preliminary in nature and requires much more elaboration. As this season was the first of two, the organization and analysis of a bulk of the data will be conducted over the course of the 2011-2012 year. It will be fully synthesized and printed as part of a Master's thesis for Trent University before the end of 2012.

My data is primarily comprised of settlement distributions. Figure 1 portrays the settlement zone surrounding Ka'Kabish. Each point represents either a scatter or a mound. The dotted red lines represent roads. The cluster of features on the left side of the map represents scatters or mounds detected through surface surveys of Blanco's fields, while the features on the right side of the map represent scatters or mounds found in George's fields. The site core is located north of these archaeological features, near the bend in the road. Blanco's fields contain 10 scatters, and 1 mound. The scatters usually range in size from 10-25 m in length, and 5-20 m in width. The mound was 15 m long, 6 m wide, with a height of roughly 1-2 m. The artifacts that were found in Blanco's fields were mostly comprised of ceramic materials, with some lithic evidence. These scatters were largely found surrounding the cenote and dropped off in frequency as we moved further from the source of water.

George's fields contain 37 mounds and 3 scatters. One of these scatters was comprised almost completely of lithic materials. This scatter was 6 m wide, and 5 m long. The other 2 scatters were small, ranging from 5-10 m in length, and 5-10 m in width and contained only ceramic materials. The 37 mounds generally range from 5-25 m in length, and 5-25 m in width. The height of these mounds range from 0.5-5 m in height. The mounds in George's fields can be largely grouped into distinct two clusters; however, this is visually emphasized on the map due to the nature of the survey zone. Between these two clusters of mounds was an area undergoing development by the local Mennonite communities and thus, was not surveyed. However, it is interesting to note that the southern cluster of mounds is dominated by one structure that is much larger than the rest of the mounds. This mound is 40 m long, 25 m wide, and roughly 5 m high. One structure was also noted that was not part of the survey zone: GF2 – Periphery – M1. This mound was recorded due to its size – 50 m long, 20 m wide, and roughly 3-5 m high – and because it had recently been bulldozed by the landowner. This offered an opportunity to collect subsurface ceramics, which added to the chronological data of the settlement zone. Preliminary ceramic analysis has determined that this structure was occupied as early as the Early Classic.

This is one of the most important details of the settlement survey - determining the chronology of the site. Although a majority of the ceramic analysis is yet to be conducted, preliminary study has determined that parts of the settlement zone were occupied during the Late Pre-Classic, and continued to be occupied into the Post-Classic. By the end of the next field season, these dates will be properly

analyzed, with maps representing particular periods of time. This will allow us to investigate the social dynamics of the site, while taking into consideration periods of growth and decline. However, at this point, this data still needs to be processed and analyzed.

Finally, as has been noted, the material inventories of structures often reflect the activities that were pursued during certain periods of time (Gonlin 2004:227). Through an analysis of the artifacts found at particular mounds, archaeologists can often determine the function of a structure. In the settlement zone, we found spindle whorls, net sinkers, manos, metates, serving vessels, flakes, scrapers, obsidian blades and fragments of eccentrics. These were almost always associated with particular structures, being found either on, or close by, the mounds. For future study, these material remains will be analyzed to determine the social activities that were present in the settlement zone. However, this data needs to be complemented by the intensive excavation of certain structures in the settlement zone. It is difficult to properly define the function of a building based solely on surface collections and test-pit excavations.

DISCUSSION

Several interesting trends can be observed through a preliminary analysis of the settlement distributions. First, as has been mentioned, as we moved away from the water source the density of occupation decreased. This would be expected if we were moving away from the site. However, as shown in Figure 1, we were moving towards the site core. Secondly, we were generally surprised by the density of occupation found in George's fields. Not only was this area heavily occupied, but there is also evidence of large variances between the sizes of the mounds, and the number of ceramics found on, and surrounding, each mound. Tables 1, 2, and 3, show the number of ceramics associated with each archaeological feature. In George's fields, we also found evidence of what may have been a lithic workshop. GF1 – S1 was slightly mounded, with heavy concentrations of lithic materials. An analysis of these materials will help to determine whether tools were being created, or reworked. However, the inclusion of this feature may indicate a degree of craft specialization, possibly demonstrating an important economic aspect of the community.

CONCLUSIONS

At this point of the study, there are still many questions to answer. How did the settlement change over time? Following the collapse of the monumental core, what happened to the surrounding settlement? These issues, which largely deal with the chronology of the site, need to be addressed in

order to fully understand the domestic occupation history of Ka'Kabish. In the 2011 field season, we will be conducting further investigation of the settlement zone, adding to the data collected in the 2010 field season. This work will increase the area of survey, possibly adding many more mounds and scatters to the study. By the end of 2012, we will have a clear understanding of the settlement chronology of the geographical area south of the site core. These results will allow us to come closer to a chronological reconstruction of the history of the ancient Maya site of Ka'Kabish.

REFERENCES CITED

Ashmore, W.

2007 *Settlement Archaeology at Quirigua, Guatemala*. University of Pennsylvania Museum Publication, Philadelphia.

Ashmore, W., S.V. Connell., J.J. Ehret., C.H. Gifford., L.T. Neff, and J.C. Vandenbosch

1994 The Xunantunich Settlement Survey. In *Xunantunich Archaeological Project: 1994 Field Season*, edited by R. Leventhal, pp. 248-288. Unpublished report on file with the Institute of Archaeology, Belmopan.

Gonlin, N.

2004 Methods for Understanding Classic Maya Commoners: Structure Function, Energetics and More. In *Ancient Maya Commoners*, edited by J. C. L. a. F. V. Jr, pp. 225-254. University of Texas Press, Austin.

Haines, H.

2005 *Report to the Institute of Archaeology, NICH, Belize of the June 2005 Reconnaissance of Ka'Kabish, Orange Walk District*. Unpublished report on file with the Institute of Archaeology, Belmopan.

Willey, G. R.

1953 *Prehistoric Settlement Patterns in the Viru Valley, Peru*. Bureau of American Ethnology Bulletin 155, Washington, D.C.

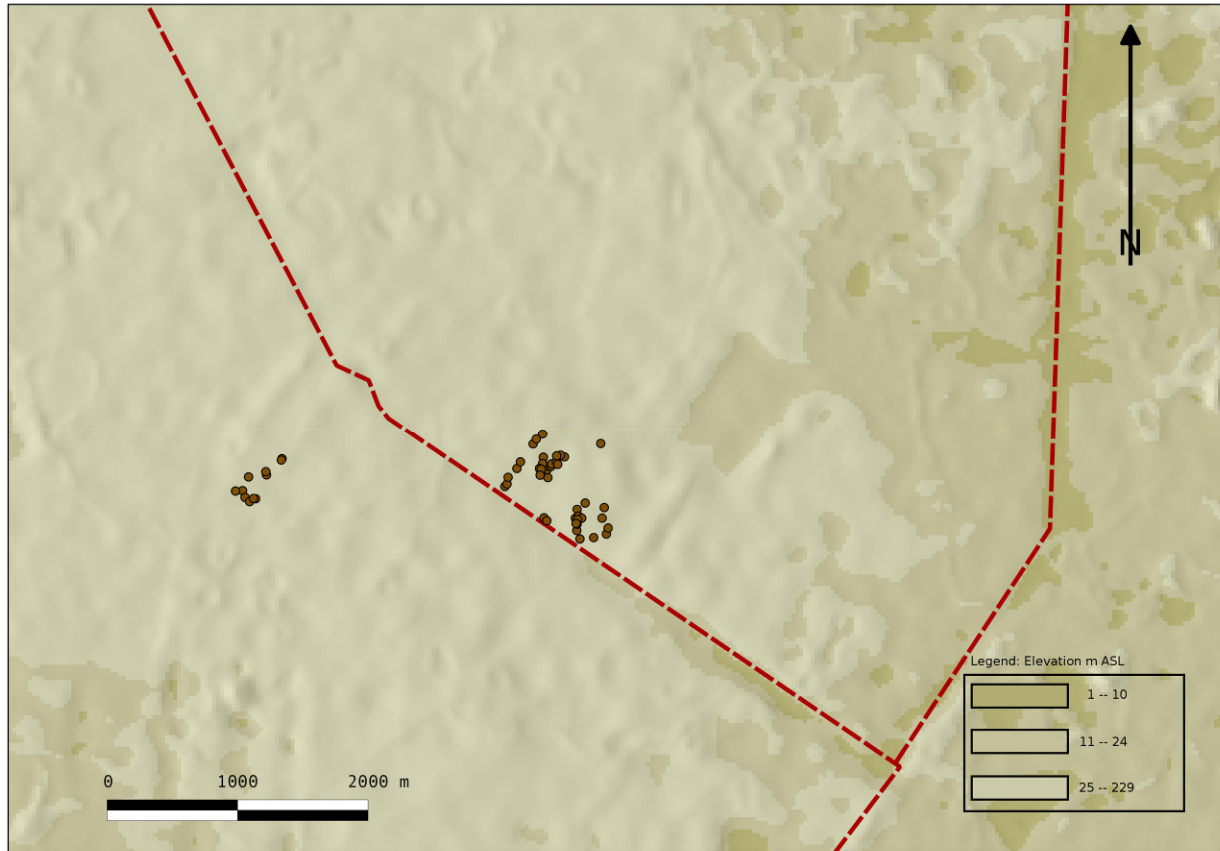


Figure 1 – Map of the Settlement Zone Surrounding Ka'Kabish

Blanco's Fields	
Feature	Number of Ceramics Collected
BF1 – S1	130
BF1 – S2	19
BF1 – S3	19
BF1 – S4	22
BF1 – S5	40
BF2 – S1	16
BF2 – S2	37
BF3 – M1	37
BF4 – S1	27
BF5 – S1	57
BF5 – S2	90

Table 1 – Ceramic Density in Blanco's Fields

George's Field 1	
Feature	Number of Ceramics Collected
GF1 – M1	56
GF1 – M2	66
GF1 – M3	31
GF1 – M4	38
GF1 – M5	44
GF1 – M6	67
GF1 – M7	60
GF1 – M8	60
GF1 – M9	89
GF1 – M10	25
GF1 – M11	37
GF1 – M12	31
GF1 – M13	21
GF1 – M14	123
GF1 – M15	18
GF1 – M16	18
GF1 – S1	5

Table 2 – Ceramic Density in George's Field 1

George's Field 2	
Feature	Number of Ceramics Collected
GF2 – M1	21
GF2 – M2	50
GF2 – M3	16
GF2 – M4	15
GF2 – M5	16
GF2 – M6	12
GF2 – M7	40
GF2 – M8	15
GF2 – M9	12
GF2 – M10	33
GF2 – M11	10
GF2 – M12	13
GF2 – M13	22
GF2 – M14	25
GF2 – M15	18
GF2 – M16	29
GF2 – M17	35
GF2 – M18	10
GF2 – M19	11
GF2 – M20	16
GF2 – M21	13
GF2 – S1	6
GF2 – S2	14
GF2 – Periphery – M1	263

Table 3 – Ceramic Density in George's Field 2

CHAPTER 7

KA'KABISH ARCHAEOLOGICAL PROJECT 2010: REPORT ON THE POTTERY

by James J. Aimers

*Department of Anthropology
SUNY-Geneseo*

I examined pottery from the site of Ka'Kabish over a three-week period in late June and July 2010. The goal of the examination this season was to gain insight into the basic temporal placement of the site with particular reference to structures D-4, D-9, and FA-6. Type: variety-mode classification was used to place the pottery into classes (wares, groups, types, and varieties) which can be compared with those of other sites. Insights gained this season will help us to refine research questions and formulate excavation strategies in subsequent seasons.

METHODS

During excavation, sherds less than the size of a Belizean shilling (25 cent piece) were generally discarded unless they appeared to be unusual in some way. In primary contexts (e.g., burials and caches) a 100% collection strategy would be followed, but no such contexts were uncovered in 2010; all material came from collapse, construction fill, middens, and material associated with looters' trenches.

Sherds were assigned a Lot number at the end of each day. KKB was used to designate the site, followed by the Lot number (e.g., KKB 12). Lot numbers serve to identify any distinct contextual or associative unit (e.g., an excavation level in a unit, a distinct cluster of artifacts within a level, a cache, etc). Many Lots also contained lithic material, and sometimes other artifact classes (lithic, faunal etc) which were bagged separately. A Lot Record Book with detailed contextual information for each Lot was maintained by the project director, Dr. Helen Haines.

Pottery was washed and then laid out on tables in stratigraphic order (when possible given the order in which material was received) and subjected to a basic sorting into two categories: diagnostic and non-diagnostic (ND). Non-diagnostic sherds consisted mostly of unslipped pottery sherds, although plain slipped body sherds were often not diagnostic in terms of the research goals of this season (chronology and comparison). Non-diagnostic sherds were counted and bagged. The number of sherds (e.g., ND = 23) and the Lot number were written on a vinyl tag which was placed in the bag with the sherds. Eventually, the non-diagnostic sherds were placed at the bottom of a larger bag (or in one of more than

one bag) that contained all the sherds from the Lot. Thus, non-diagnostic sherds can be examined in the future although this is not planned.

Diagnostic sherds were labeled individually and then sorted into more specific taxa. One idiosyncratic category I use is “specials.” A “special” is a sherd that has diagnostic qualities (e.g., a rim sherd, or an unusual incised sherd) but I am currently unable to identify. Specials may become identifiable as my work at the site progresses, or they may be recognizable to other archaeologists. These are the only sherds in any Lot which are not “sub-bagged”-- this is so that they are easy to retrieve should other archaeologists wish to see them, or should I wish to re-examine them (when one opens a bag which contains a Lot, these are the only sherds that are loose). Index cards were created for diagnostic sherds about which I did have an opinion (and can be created later for “specials” which become diagnostic). These cards served as my notes, often showing evaluations of several different type-variety possibilities for a single sherd.

When assessing a given sherd or sherds based on published type-variety descriptions I generally consider 1) form; 2) surface treatment; and 3) paste/fabric. So, for example, a given sherd may have matched a published description in terms of form and slip (indicated by check marks) but not in paste (indicated by an X). Hopefully this makes my interpretive process more clear. In many cases after evaluating several published types I was unable to confidently assign a type-variety name to a given sherd or sherds (as one expects during the first season at a “new” site), but the index cards document my research progress and provide a starting point for subsequent investigation. Diagnostic sherds were bagged separately with their index card and combined with the other sherds from the Lot. Problematic, unusual, or diagnostic sherds were bagged with their index card and placed in what I have euphemistically called a “type collection” although at this point it is more accurately “a collection of sherds which interest me.” These were kept separate on metal trays. Each of these was photographed with their index card at the end of the season. I retained a copy of these photos and Dr. Haines has a set as well. The remainder of the pottery was stored in zinc boxes at the storage facility in Indian Church.

After classification, ceramic data were recorded on a paper ceramic record sheet. Basic type-variety (e.g., ceramic group name) and modal data (e.g., rim/lip forms, and measurements such as wall thickness and diameter) were included. Because the research goals of this season can be satisfied with basic type-variety classification, modal data is not very detailed. Modal data was most useful for the classification of eroded sherds from the settlement survey. For example, sherds places in the Blue Creek Striated Ceramic System have diagnostic barbed or “arrowhead” rims typically found in the Terminal Classic. In subsequent seasons as we uncover more primary deposits and robust stratigraphic sequences, modal data is expected to become more important (for example in seriating formal changes in pottery from the Late Pre-Classic to the Early Classic, see comment below). In the evenings the data were

transferred to a Microsoft Excel file to facilitate sorting in various ways. This Excel file is available from me or Dr. Helen Haines.

RESULTS

The 2010 excavations uncovered many pottery types and modes which are normally dated to the Late Pre-Classic (or Formative) and Early Classic period, and little from later periods. This was surprising given the site's proximity to Lamanai, which has robust Terminal Classic and Post-Classic deposits, and a relatively small Early Classic sample. At Ka'Kabish, a single sherd which may from a Zakpah Group pedestal dish (or "chalice") was found on the surface of Plaza D to the east of Structure D-4 (Lot KKB 129). These date to the Buk Phase (AD 960-1200/1250) at Lamanai. Two fragments of the rim of a brown-slipped dish which may have come from a pedestal dish was found in Lot KKB 151. The rim mode is Terminal Classic.

Most lots contained both Late Pre-Classic and Early Classic types and modes, suggesting that at least some Late Pre-Classic types and modes continue into Early Classic (Kosakowski and Sagabiel 1999; Sullivan 2002). Brady et al. (1999) and others (Reese-Taylor and Walker 2002) have argued that pottery characteristics generally associated with the Proto-Classic or Early Classic are grafted onto existing Pre-Classic characteristics rather than replacing them: "Too often forgotten . . . is the fact that the beginning of a new 'phase', 'period', or 'stage' in archaeology is defined by the appearance of new modes, types, wares, or other attributes-- not by the disappearance or replacement of existing ones which may continue well into or even through the new unit" (Brady et al. 1998: 32).

A Sierra Red outcurving dish with basal flange (KKB 16) is good evidence of a Pre-Classic slip mode combined with an Early Classic form mode (see also Kosakowski and Sagabiel 1999:132). Similarly a dark red (almost maroon) slip on Sierra Red outcurving dish with an interior thickened lip (KKB 26) looks like a late form mode, although (Gifford 1976:88) thought maroon slip indicated an early version of Sierra Red. Finally the consistent contextual association of Late Pre-Classic Early Classic types suggests contemporaneity. For example, KKB 76 contained a probable (Early?) Classic period tan-black-buff polychrome body sherd in a context which consisted almost entirely of types usually assigned to the Late Pre-Classic period. Hopefully, more stratified primary contexts in subsequent years will allow many of these questions to be addressed.

The most common polychrome pottery at Ka'Kabish appears to be from the Dos Arroyos Group although in most cases the sherds were small and it is possible that they could also be placed in the Ixcario Group or other orange-polychrome groups. The Dos Arroyos Group designation for most of the orange-polychrome sherds was based on paste and slip but particularly the typical large Early Classic basal flange (see basal flanged sherd from KKB 16).

During the 2010 season, material later than Early Classic was found mostly on the periphery (e.g., sherds of the Terminal Classic Blue Creek Striated System). This material was collected by Alec M^cLellan as part of his Master's thesis research and not all of this has been entered into the ceramic database. At this early date it seems that most Terminal Classic and Post-Classic activity occurred on the periphery of the site, although this could easily be the result of the sample in the site core.

CONCLUSIONS

In the broadest sense the results of the 2010 pottery investigations at Ka'Kabish suggest strong connections to the Chicanel and Tzakol ceramic spheres of the Petén in the Pre-Classic (or Formative) and Early Classic. This is very similar to the situation documented at La Milpa and Lamanai. One of the exciting things about the relatively large Early Classic sample is that it may help us to better understand the Early Classic at Lamanai and the region. The limited Terminal Classic and Post-classic finds suggest that during these times the site's affiliations were locally oriented or with the northern lowlands rather than the Petén. At this point it is difficult to say more than that about the later periods. In any event, the 2010 season provided a valuable starting point for further investigations of the occupation history of Ka'Kabish as well as its regional and inter-regional role.

REFERENCES CITED

- Brady, J. E., J. W. Ball, R. L. Bishop, D. Pring, N. C. Hammond and R. A. Housley
1998 The Lowland Maya "Protoclassic": A Reconsideration of Its Nature and Significance. *Ancient Mesoamerica* 9:17-38.
- Gifford, J. C.
1976 *Prehistoric Pottery Analysis and the Ceramics of Barton Ramie in the Belize Valley*. Memoirs of the Peabody Museum of Archaeology and Ethnology Volume 18. Harvard University, Cambridge.
- Kosakowski, L. J. and K. Sagabiel
1999 The Ceramic Sequence of La Milpa, Belize. *Mexicon* XXI(6):131-136.
- Reese-Taylor, K. and D. Walker
2002 The Passage of the Late Preclassic in the Early Classic. In *Ancient Maya Political Economies*, edited by M. A. Masson and D. Freidel, pp. 87-122. Altamira Press, Oxford.
- Sullivan, L. A.
2002 Dynamics of Regional Integration in Northwestern Belize. In *Ancient Maya Political Economies*, edited by M. A. Masson and D. Freidel, pp. 197-222. Altamira Press, Oxford.

CHAPTER 8

COMMENTS ON THE GLYPHIC TEXT OF TOMB 1, STRUCTURE FA-6, KA'KABISH, BELIZE

by *Christophe Helmke*

*Department of American Indian Languages and Cultures
Institute of Cross-cultural and Regional Studies
University of Copenhagen, Denmark*

Despite weathering and erosion, the mural is preserved in several contiguous fragments that still adhere to the east wall of the tomb (Figure 1). Based on what remains it is clear that the mural was once much more extensive and we suspect that the entirety of the tomb was once plastered over and embellished with a more extensive painted mural. One portion still exhibits the remains of two and part of a third glyph block (Figure 2). The glyph blocks are set side by side in a row and their spacing is regular suggesting that a glyphic clause was as rendered horizontally along the length of the tomb, instead of the more standard double-column format. Based on what is preserved it can be estimated that the average glyph block measures between 25 and 26 cm wide. The glyphs are provisionally designated from left to right as Xp1, Yp1 and Zp1, in keeping with the standards of the *Corpus of Maya Hieroglyphic Inscriptions* (Graham 1975). The fragments exhibit a background rendered in a dark reddish orange (Munsell: 10R 4/8), which was evidently applied in broad brushstrokes, with the glyphs rendered subsequently in deep reddish brown pigment (Munsell: 10R 1/10) with finer and controlled brushstrokes. In some areas the foreground and background have bled into each other suggesting that the glyphs were painted shortly after the background, while still moist. Due to this fresco application and extensive weathering the reading of the glyphic collocations is hampered.

Nonetheless, since the remaining glyphs appear to face to the viewer's left the text was probably intended to be read in the standard left-to-right reading order. The initial portion of the first collocation (Xp1) has blurred into the background which makes reading difficult, but it may represent a large and stylized celt sign, which is an undeciphered logogram (although Barbara MacLeod has suggested the reading **LEM**). Besides the celt sign, the right half of the collocation is composed of what appears to be three stacked elements, with the larger central sign exhibiting a two thin parallel lines forming a circular device, the whole topped by two scrolls. Only the broad outline of the suffix is still visible. Although too little remains for a conclusive reading, on the whole this combination of signs may render the logogram **K'AWIL** with a final phonetic complement **la** as the suffix. This spelling of the theonym as **K'AWIL-la**, yielding *k'awiil* (a.k.a. God K; see Taube 1992: 69-79) is consistent with the time period

attributed to the tomb on the basis of the C14 dating (Helen Haines pers. comm. 2010). In contrast, had the text been executed sometime between A.D. 747-849 then we could expect to find the spelling **K'AWIL-li** indicating the vowel-shortened form *k'awil*, especially in this part of the Maya lowlands (Stuart et al. 1999: II-16; Houston et al. 2004: 91-92, 96-97; Lacadena and Wichmann 2004: 116-119).

The second collocation (Yp1) is composed of two glyphs, the second of which may render a sign **JOL**, read *jo'l* 'skull', with the eyebrow providing the diagnostic markings of the sign. This element has been taken by Nikolai Grube (pers. comm. 2010) to record the logogram **CHAM** 'death' here functioning as a verbal root and plausibly recording the funerary rites that transpired within the tomb. Of the preceding glyph to this logogram little remains, and while it bears some resemblance to other known logograms may well record a vocalic sign **i**, which here could function as a conjunctive *i-chamiy* 'and (then) died'. This would indicate that the original clause recorded several verbal expressions in which the death event transpired later in the narrative. Of the final preserved collocation (Zp1) too little remains to identify what it originally rendered beyond the scroll of its lower left corner.

Based on the extant glyphs painted on the walls of Tomb 1 at Ka'Kabish, it would seem that the ancient Maya text recorded the theonym *lem k'awiil* quite possibly with a verbal construction *i-chamiy*. Although these readings are highly tentative on account of extensive weathering and damage the constituent elements provisionally identified are consistent with those found as part of proper names, or anthroponyms, and what may be a verbal construction. Due to its partiality, no positive match could be established for the nominal sequence with other previously reported anthroponyms, and based on present evidence it stands to reason that the name rendered that of the individual interred within the tomb, following the precedence of comparable texts from the Maya area. In terms of its execution the text can be said to be part of the tradition of painted tombs found at Río Azul in northeastern Guatemala (see Adams 1999; Acuña 2009), located to the west of Ka'Kabish, although the former date predominantly to the foregoing Early Classic. In sum, whereas the Ka'Kabish example is probably one of the later manifestations of this same tradition, it seems to record a typical funerary text as well as parts of the name of the interred.

REFERENCES CITED

Acuña, Mary Jane

2009 "Paisajes Cosmológicos Mayas: Las Pinturas Murales de Río Azul." *XXIII Simposio de Investigaciones Arqueológicas en Guatemala* (2008).

Adams, Richard E.W.

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

Graham, Ian

1975 *Corpus of Maya Hieroglyphic Inscriptions, Volume 1: Introduction*. Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge.

Houston, Stephen, David Stuart & John Robertson

2004 "Disharmony in Maya Hieroglyphic Writing: Linguistic Change and Continuity in Classic Society." *The Linguistics of Maya Writing*, edited by Søren Wichmann, pp. 83-101. University of Utah Press, Salt Lake City.

Lacadena, Alfonso & Søren Wichmann

2004 "On the Representation of the Glottal Stop in Maya Writing." *The Linguistics of Maya Writing*, edited by Søren Wichmann, pp. 100-162. University of Utah Press, Salt Lake City.

Stuart, David, Houston Stephen & John Robertson

1999 "Recovering the Past: Classic Maya Language and Classic Maya Gods." *Notebook for the XXIIIrd Maya Hieroglyphic Forum at Texas*, pp. II.1-II-95. Department of Art and Art History, the College of Fine Arts, and the Institute of Latin American Studies, The University of Texas at Austin, Austin.

Taube, Karl A.

1992 *The Major Gods of Ancient Yucatan*. Studies in Pre-Columbian Art and Archaeology No. 32. Dumbarton Oaks Research Library and Collection, Washington D.C.

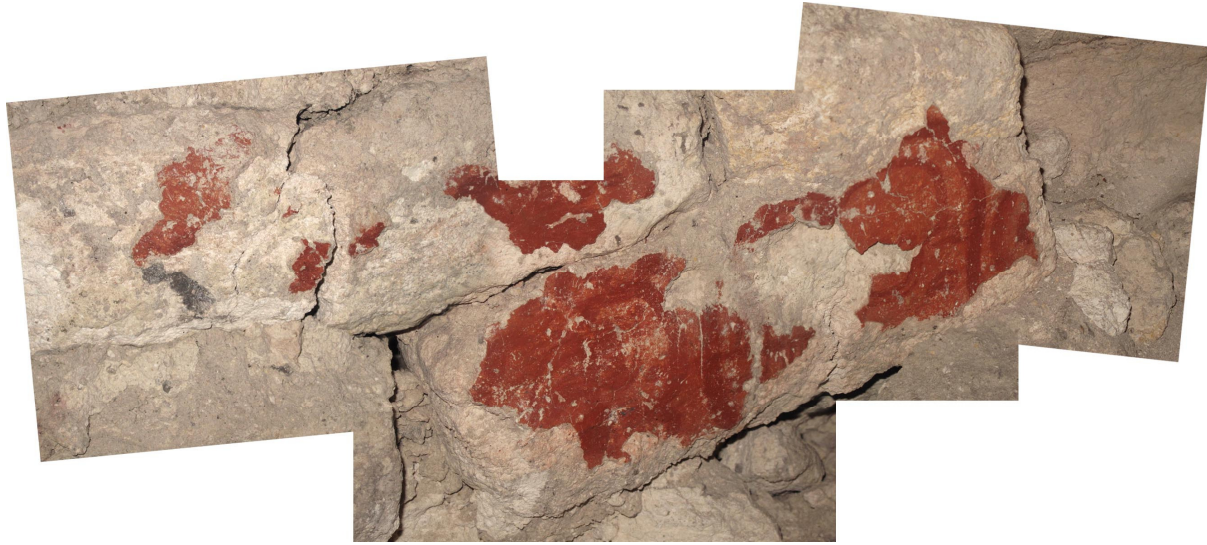


Figure 1. Composite photo of the extant glyphic mural found within Tomb 1 at Ka'Kabish. Photographs by Helen Haines, photomontage by Christophe Helmke.

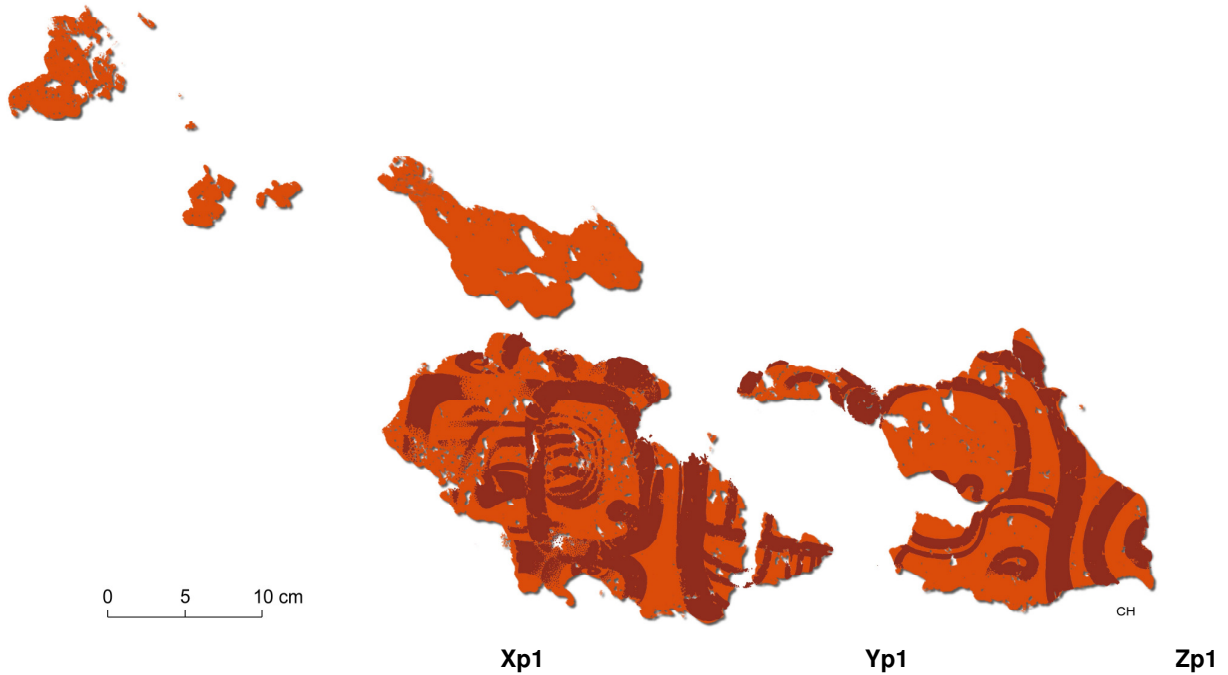


Figure 2. Drawing of the extant glyphic text found in Tomb 1 at Ka'Kabish. Drawing by Christophe Helmke based on an orthorectified image. Scale is approximate.

CHAPTER 9

SUMMARY DISCUSSION OF THE KA'KABISH SITE

by Helen R. Haines

*Department of Anthropology
Trent University*

Investigations undertaken during the 2010 field season greatly expanded our understanding of the site of Ka'Kabish both in terms of activities within the core area as well as in the settlement zone and periphery areas. These investigations have indicated that Ka'Kabish had a long and vibrant history with the core area likely being settled sometime during the early part of the Late Formative period (400-100 BC), possibly even during the latter part of the Middle Formative period (600-400 BC). This activity continued into the Terminal Classic period (AD 750-900/1000) with occupation in the settlement areas persisting through the Early Post-Classic period (AD 900/1000-1100) and likely into the Middle Post-Classic period (AD 1100-1300) (Guderjan 1996; Pendergast personal communication).

Research into Plaza D revealed that the earliest temple constructions which date to the Late Formative period, appear to have occurred with Structure D-9-sub I and Structure D-9-sub II (Tremain Chapter 4 this volume). Late Formative constructions were also found as part of the plaza in front of Structure D-4 as well as Structure D-4-sub I itself (Tremain Chapters 2 and 3 respectively). However, this later structure, while assuming the form of a pyramidal substructure in its penultimate phase, appears to originally to have been a range structure during the Formative period.

The Early Classic period appears to have been marked by the construction of at least one temple on the Group F acropolis. Radiocarbon testing of samples taken from both the ceiling as well as the floor of Tomb 1 in Structure FA-6 indicate that this building was constructed during the 5th century AD. Moreover, materials collected from excavation beneath the floor of the tomb indicated that the structure rested upon a midden deposited during the Late Formative and Proto-Classic periods, with some material potentially dating to the early facet of the Early Classic period.

Late Classic constructions were discovered overlaying the Plaza D area to the east of Structure D-4. Moreover, the penultimate, and likely also the ultimate phase, of Structure D-4 appears to have been constructed during this period. Terminal or Early Post-Classic materials in the form of sherds from a chalice vessel were recovered from the humus layer of Structure D-14 during the 2007 field season. This later material is indeterminate in terms of its interpretation: either the material was incorporated into the structure during its construction, indicating that building of monumental architecture was on-going during

the Terminal and Early Post-Classic periods, or the material could have been deposited as part of an offering after the building had been constructed and possibly after the site had ceased to be occupied. Both of these scenarios are equally likely given the nature of the vessel and the time period from which it hails. Further excavation of this structure is warranted to resolve this issue.

Occupation in the settlement zone appears to carry on long after activity at the site core ceased. This pattern of continued occupation parallels that found at Lamanai, where occupation, both in the surrounding areas and in the core, continues through the Post-Classic period and into the Contact Period (Graham 2004; Pendergast 1985, 1986). Although it is likely, based on their close geographical positioning, that relationships existed between these groups, the extent of these relationships and the time periods for when they might have taken place, have yet to be determined.

IMPLICATIONS OF RESEARCH

It is becoming clear that, contrary to original assumptions, Ka'Kabish was a centre of considerable complexity. While not of the scale of Lamanai, on-going survey and mapping has shown that it was also larger than initially ascribed. Moreover, the size and scope of the architecture is more in keeping with our ideas of what constitutes small polity centres, regardless of its close proximity to the site of Lamanai.

In the past, we have considered four potential models to explain the role Ka'Kabish might have had during the Maya Classic Period (Haines 2008, 2009). These models can be summarised as follows:

1. Centre for a mobile royal court from Lamanai;
2. Ideological or political seat for a heterarchically arranged polity with the economic seat being Lamanai (*cf.* Haines 2007a);
3. Suburban settlement for elites who may have 'worked' at Lamanai (*cf.* Haines and Patterson 2008).;
4. Autonomous polity centre.

As these theories have been presented, and reviewed, elsewhere (Haines 2010) the details by which they were evaluated will not be elaborated upon here. Rather we will focus our attention on the current prevailing model: that the site of Ka'Kabish was an autonomous, or at least a nominally autonomous, centre.

The idea that Ka'Kabish was an autonomous centre would serve to explain many of the architectural and ritual programs present at the site. The evidence of architectural and occupational continuity, albeit preliminary, indicates that the political situation at Ka'Kabish was fairly stable, complete with regular minor additions and modifications through the lifetime of the site (Haines 2007b), unlike other smaller centres situated with reach of larger, more powerful centres, and whose history of

fluctuating periods of autonomy and subordination is documented in their episodic construction programs (Culbert 1991; Grube 2000; Hammond 1991; Iannone 2005; Martin and Grube 2000).

The close physical distance between Ka'Kabish and Lamanai, however, raises some problematic considerations. The average physical distance suggested for primary centres elsewhere in the Maya realm is significantly greater than that between Ka'Kabish and Lamanai (Mathews 1991). Moreover, analysis of other sites in the Maya area have documented causeway terminus groups, which serve to unify and control a polity territory, at distances in excess of that between Ka'Kabish and Lamanai (Chase and Chase 2001:274). These dimensionality considerations suggest that either the geographic extent of polities in the north is significantly less than what is traditionally assumed and found at other sites, that Ka'Kabish was not an autonomous centre (a suggestion belied by the architectural and ritual evidence), or an alternative political model existed, one that was not based on our ideas of intra-political hierarchies.

This alternative political model is that Maya polities, as argued elsewhere more closely resembled city-states (Marcus 1989, 1994; Thompson 1954; Webster 1997), and that these were structured in a hegemonic arrangement in which cities retained autonomy but agreed, willingly or by coercion, to collaborate in a confederacy that acted under the direction of the ruler of the primate city (Haines 2010, 2011). The term hegemony has been used to explain the extent of political power and influence of many Maya sites including Tikal, Calakmul, Caracol, and even Dos Pilas; although the latter is also considered to have been part of the Calakmul hegemony at the same time as it is perceived to be founding its own hegemonic territory (see Martin and Grube 2000). What is central to this concept is the idea of *confederacy*, that is an alliance of confederates (allies or supporters) whether they be individuals or states, and as such, they appear to have retained considerable autonomy. This autonomy is reified through the ruler retaining the title *k'uhul ajaw* and all rights, privileges, and duties associated with that position, including the erection of carved monuments commemorating their activities. This model complements the idea that Ka'Kabish was an autonomous polity centre and explains the active program of religious and elite architecture constructed at the site (Haines 2010).

FUTURE RESEARCH

Despite the contributions made by the 2010 field season, it is clear that there are still many unanswered questions at Ka'Kabish. Future research at the site is needed in order to clarify the nature of some of the key structures as well as provide additional evidence as to the chronology of the site. In particular, questions need to be asked as to when the acropolis structure in Group F was constructed and more information needs to be gathered from the Formative and Early Classic midden that may lie beneath this structure. Additionally, we must still resolve the issue of when Structure D-14 was constructed, and buried, and if the Terminal/Early Post-Classic chalice vessel fragments were part of an offering or simply

material from the fill. The latter question also delves into pilgrimage issues and how the occupants of the surrounding settlement zone might have viewed the ruins after their possible abandonment. Information as to the final periods of construction for structures at the site may also be garnered by test pitting the humus layers on the tops of key structures around the site core and in the adjacent plazuela groups. It is my intent to apply to the Institute of Archaeology, NICH, Belize, for a permit to conduct this work as well as to continue investigating the site and surrounding area of Ka'Kabish.

Additionally, work is still required to complete a settlement transect between the southern groups mapped by M^cLellan and the core area of the site. Information from this work will greatly augment our understanding of population density in the surrounding area. It is also hoped that a second transect might be possible between Wall's fields to the east and Group F at Ka'Kabish. However, this work is more problematic as all the landowners have yet to be identified and contacted.

The goal of these projects is to create a more accurate picture of the occupation history and construction sequences at Ka'Kabish. I expect that work Ka'Kabish (site core, immediate settlement area, and extended settlement area) will, with the permission of the Institute of Archaeology, continue over the course of the next decade. To fund the various aspects of this research money was secured from the Social Science and Humanitarian Research Council of Canada. This grant supported our 2010 field season and will also support research during the 2011, and 2012 field seasons.

REFERENCES

Ball, Joseph W., and Jennifer T. Tashek

2001 The Buenavista-Cahal Pech Royal Court: Multi-Palace Court Mobility and Usage in a Petty Lowland Maya Kingdom. In *Royal Courts of the Ancient Maya: Volume 2 – Data and Case Studies*, edited by Takeshi Inomata and Stephan D. Houston, pp. 165 – 200. Westview Press, Boulder.

Chase, Arlen F., and Diane Z. Chase

2001 Ancient Maya Causeways and Site Organization. *Ancient Mesoamerica* 12: 273-281.

2003 Minor Centers, Complexity, and Scale in Lowland Maya Settlement Archaeology. In *Perspectives on Ancient Maya Rural Complexity*, edited by Gyles Iannone and Samuel V. Connell, pp. 108-118. The Costen Institute of Archaeology, UCLA, Los Angeles.

Chase, Diane Z., and Arlen F. Chase

2005 The Early Classic Period at Santa Rita Corozal: Issues of Hierarchy, Heterarchy, and Stratification in Northern Belize. In *Research Reports in Belizean Archaeology, Vol 2*, edited by Jaime Awe, John Morris, Sherilyne Jones, and Christopher Helmke, pp. 111-129. Institute of Archaeology, Belmopan, Belize.

Culbert, T. Patrick

1991 Maya Political History and Elite Interaction: A Summary View. In *Classic Maya Political History*, edited by T. Patrick Culbert, pp. 311-346. Cambridge University Press, Cambridge, UK.

Graham, Elizabeth A.

2004 Lamanai Reloaded: Alive and Well in the Early Post-Classic. In *Research Reports in Belizean Archaeology*, edited by Jaime Awe, John Morris, and Sherilyne Jones, pp. 223-242. Institute of Archaeology, NICH, Belmopan, Belize.

Grube, Nikolai

2000 The City-States of the Maya. In *A Comparative Study of Thirty City-State Cultures*, edited by Mogens Herman Hansen, pp. 547-565. Royal Danish Academy of Sciences and Letters, Copenhagen.

Haines, Helen R.

2007a Permit Application to Begin Reconnaissance of the Archaeological Site of Ka'Kabish, Orange Walk District, January 22, 2007 – March 3, 2007. On file with the Institute of Archaeology, Belmopan, Belize.

2007b Report to The Institute of Archaeology, NICH, Belize, of the 2007 Reconnaissance of Ka'Kabish, Orange Walk District. Report on file with the Institute of Archaeology, Belmopan, Belize.

2008 Causeway Terminus, Minor Centre, Elite Refuge, or Ritual Capital? Ka'Kabish, A New Puzzle on the Ancient Maya Landscape of North-Central Belize. In *Research Reports in Belizean Archaeology Volume 5*. Institute of Archaeology, NICH, Belize.

2010 Report to The Institute of Archaeology, NICH, Belize, of the 2009 Reconnaissance of Ka'Kabish, Orange Walk District. Report on file with the Institute of Archaeology, Belmopan, Belize.

2011 Hierarchy, Heterarchy, or Hegemony?: Reconsidering ideas about early Maya polity organisation. Anthropology Lecture Series, University of Toronto, St. George. February 4, 2011.

Haines, Helen R., and Clifford Patterson

2008 Suburbia, Maya Style?: Results of the Preliminary Investigations at Ka'Kabish and the Intermediary Settlement Zone in the Lamanai Periphery. Paper presented at the 73rd Annual Meeting of the Society for American Archaeology, Vancouver, British Columbia.

Hammond, Norman

1991 *Cuello: An Early Maya Community in Belize*. University of Cambridge Press, Cambridge.

Iannone, Gyles

2005 The Rise and Fall of an Ancient Maya Petty Royal Court. *Latin American Antiquity* 16:26-44.

Marcus, Joyce

1989 From Centralized Systems of City-States: Possible Models for the Epiclassic. In *Mesoamerica after the Decline of Teotihuacan, AD 700-900*, edited by Richard A. Diehl and Janet Catherine Berlo, pp. 201-208. Dumbarton Oaks Research Library and Collection, Washington D.C.

1994 Political Fluctuations in Mesoamerica: Dynamic Cycles of Mesoamerican States. *National Geographic Research and Exploration* 8:392-411.

Martin, Simon, and Nikolai Grube

2000 *Chronicles of the Maya Kings and Queens*. Thames and Hudson, London.

Mathews, P.

1991 Classic Maya Emblem Glyphs. In *Classic Maya Political History: Hieroglyphic and Archaeological Evidence*, edited by T. P. Culbert, pg. 19-29. Cambridge University Press, Cambridge.

Pendergast, D. M.

1985 Lamanai, Belize: An Updated View. *The Lowland Maya Postclassic*. A. F. Chase and P. M. Rice. Austin, University of Texas Press: 91-103.

1986 Stability Through Change: Lamanai, Belize, from the Ninth to the Seventeenth Century. *Late Lowland Maya Civilization: Classic to Post Classic*. J. A. Sabloff and E. W. Andrews V.: 223-249.

Thompson, J.E.S.

1954 *The Rise and Fall of Maya Civilization*. University of Oklahoma Press, Norman.

Webster, David

1997 City-States of the Maya. In *the Archaeology of City-States: Cross-Cultural Approaches*, edited by Deborah L. Nichols and Thomas H. Charlton, pp. 135-154. Smithsonian Institution Press, Washington and London.

FINAL WORD

Ka'Kabish, although greatly impinged upon by the modern world through encroaching agricultural activity and looting, can still reveal a great deal about ancient Maya political and social organisation. Continuing investigations are revealing that the site may have been more political important than previously thought. Moreover, this information reflects directly on our perceptions of Maya polity organisation and inter-site relations. Investigations into the surrounding, inter-site zone is showing that the area was more densely occupied than previously thought.

In conjunction with the extensive research previously conducted, and currently underway, at Lamanai, research at Ka'Kabish afford us an ideal situation for investigating and re-evaluating the nature of Classic period polity organisations. It is our belief that information gathered from Ka'Kabish stands to contribute meaningfully to our understanding of Classic Maya polity dynamics in this part of the ancient Maya world.