

# Research Reports in Belizean Archaeology



Volume 4  
2007

# *Research Reports in Belizean Archaeology Volume 4*

*Archaeological Investigations in the Eastern  
Maya Lowlands: Papers of the 2007  
Belize Archaeology Symposium*

Edited by John Morris, Sherilyne Jones, Jaime Awe and Christophe Helmke



Institute of Archaeology  
National Institute of Culture and History  
Belmopan, Belize  
2007

This work is licensed under a modified Creative Commons Attribution-Noncommercial-No Derivative Works 3.0 Unported License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-nd/3.0/>. You are free to electronically copy, distribute, and transmit this work if you attribute authorship. You must attribute the work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work). For any reuse or distribution, you must make clear to others the license terms of this work. Nothing in this license impairs or restricts the author's moral rights.

Editorial Board of the Institute of Archaeology, NICH  
John Morris, Sherilyne Jones, Jaime Awe and Christophe Helmke

The Institute of Archaeology, Belmopan, Belize  
Jaime Awe, Director  
John Morris, Associate Director, Research and Education  
Brian Woodye, Associate Director, Parks Management  
George Thompson, Associate Director, Planning & Policy Management  
Sherilyne Jones, Research and Education Officer

Cover design: Christophe Helmke  
Frontispiece: Terminal Classic Sahcaba Molded-carved vase from Pook's Hill (Photograph by Christophe Helmke).

Back cover: Late Classic Panel 2 from Xunantunich – dated paleographically to AD 780-820 (Photograph by Christophe Helmke).

Layout and Graphic Design: Sherilyne Jones, Christophe Helmke.

ISBN 976-95165-3-8

Copyright © 2007 Institute of Archaeology, National Institute of Culture and History, Belize.  
All rights reserved. Printed by Print Belize Limited.



## ACKNOWLEDGEMENTS

We wish to express our sincerest thanks to every individual who contributed to the success of our fourth symposium, and to the subsequent publication of the scientific contributions that are contained in the fourth volume of the Research Reports in Belizean Archaeology. A special thanks to Print Belize and the staff for their efforts to have the Symposium Volume printed on time despite receiving the documents on very short notice.

We extend a special thank you to all our sponsors. To the staff and management of our sister Institution, within NICH, Institute of Creative Arts (ICA), we thank you for your assistance and for graciously hosting the 2006 symposium. We are grateful to the Protected Areas Conservation Trust, Belize Tourism Board, Esso Standard Oil S.A. Ltd, Print Belize Ltd., Old Belize Cultural & Historical Center, Belize Electric Company Limited (BECOL), Galen University, Fort Street Tourism Village, Belize Communication and Security Ltd., and various other institutions that provided financial and logistical assistance.

We are especially grateful to the Honorable Francis Fonseca, Attorney General, Minister of Labor, Education and Culture whose dedication to education and continuous support constantly encourages us. Thanks to the Honorable Mark Espot, the previous Minister of Culture for his tremendous support of the Institute of Archaeology. A special thanks Mr. Yasser Musa, President of the National Institute of Culture and History for his constant encouragement to improve the professional capacity of our institution and for ensuring that the volume gets published. Thanks also to Mr. Victor Espot, Administrator, and the Board of Directors of NICH who provided considerable funding to ensure the success of our symposium and the subsequent publication of this volume. We extend a special thank to the staff and management of the Bliss Center of Creative Arts and the Institute of Creative Arts (ICA), thank you for your assistance and for graciously hosting the 2006 symposium. We are grateful to the Institute of Social and Cultural Research (ISCR), our sister institution in NICH, for providing our ISBN number.

Meetings of this scope are never possible without professional participation. We therefore thank all of our colleagues who took time from their busy schedules to attend and present papers in our symposium. The various themes of their papers serve to reflect the diversity of Belizean Archaeology, and provide a wealth of scientific information to the people of Belize. Thanks to our guest speaker, Dr. Nancy Adamson of Galen University in Belize.

Several editors and anonymous reviewers gave of their time and made constructive criticisms that enhanced our end product. George Thompson assistance in doing line editing and reviewing of all the bibliographic references is always invaluable and appreciated.

Finally, it should be noted that our successes are a direct result of the tremendous effort expended by the entire staff of the Institute of Archaeology. Special thanks must be given to Enrique “Jack” Itza, Melissa Badillo, Jorge “Stakey” Can, Darcy “Billy” Correa, Claudia Elena, Nick Foster, David Griffith, Rafael Guerra, Delsia Marsden, Joyce Tun-Quewell, Wayne Moore, George Thompson Program Chair and Brian Woodye, Executive Chairperson of the Symposium. We are grateful for your patience, expertise and invaluable help. The fourth volume of the Research Reports in Belizean Archaeology is a testimony to your dedication and your ability to address the challenges of our institution.

John Morris, Sherilyne Jones and Jaime Awe

Belmopan, Belize, June 2007



# CONTENTS

	page
SECTION ONE: THE TERMINAL CLASSIC PERIOD .....	1
1. <i>Terminal Classic Maya of Belize: Key Issues and Questions</i> John M. Morris, Gyles Iannone and Jaime J. Awe .....	3
2. <i>“This is the End”: Archaeological Transitions and the Terminal Classic period at Caracol, Belize</i> Arlen F. Chase and Diane Z. Chase .....	13
3. <i>Fighting the Inevitable: The Terminal Classic Maya of the Upper Roaring Creek Valley</i> Jaime J. Awe and Christophe G.B. Helmke .....	28
4. <i>The Ancient Maya Drought Cult: Late Classic Cave Use in Belize</i> Holley Moyes .....	43
5. <i>On Drought and the “Collapse” of the Ancient Maya</i> Gyles Iannone .....	55
6. <i>Late and Terminal Classic Occupation of Pusilha, Toledo District, Belize Site Planning, Burial Patterns and Cosmology</i> Geoffrey Braswell .....	67
7. <i>Commoner Ritual and Socio-Political Life in a Late Classic Neighborhood: Archaeological Investigations at the Northeast Group, Chan Site, Belize</i> Chelsea Blackmore .....	79
8. <i>Unexpected Discoveries in Chau Hiix Settlement: Suggestions for Terminal Classic Residence in North Central Belize</i> A. Sean Goldsmith .....	89
9. <i>The Curse of the Ware: Using Ceramic Systems in Belize</i> James J. Aimers .....	101

	<b>page</b>
10. <i>Fresh Volcanic Glass Shards in the Pottery Sherds of the Maya Lowlands</i> Anabel Ford and Frank Spera .....	111
11. <i>The Classic to Postclassic Transition in the Sibun Valley, Belize: Defining Terminal Classic Ceramic Assemblage</i> Eleanor Harrison Buck and Patricia McAnany .....	119
12. <i>The Terminal Classic in the Three Rivers Region</i> Lauren Sullivan, Brett Houk and Fred Valdez, Jr., .....	135
13. <i>Terminal Classic Events: Colha, Belize and the Central Maya Lowlands</i> Fred Valdez, Jr. and Palma Buttles .....	147
14. <i>Factors of Stress and Processes leading to the End of the Classic Period at Blue Creek</i> Thomas H. Guderjan and Coleen Hanratty .....	155
<b>SECTION TWO: GENERAL RESEARCH REPORTS</b> .....	167
15. <i>The Middle Formative Ideological Foundations of Kinship: The Case from Cahal Pech</i> James Garber, Jennifer Cochran and Jaime J. Awe .....	169
16. <i>From House to Holy: Formative Development of Civic Ceremonial Architecture in the Maya Lowlands</i> Terry Powis and David Cheetham .....	177
17. <i>Rockshelter Excavation in the Caves Branch River Valley</i> Gabriel Wrobel, James Tyler and Jessica Hardy.....	187
18. <i>Fifteen years of Settlement Pattern Surveys in the Three River Region of Northwestern Belize: What have We Learned</i> Hubert R. Robichaux .....	197
19. <i>Hinterland Settlement in Northwestern Belize: Excavations at the Medicinal Trails</i> David M. Hyde and Shelley L. Fischbeck .....	213
20. <i>Investigations of Akab Muclil: A Late Hinterland Settlement in Northwestern Belize</i> Antonio E. Padilla, Molly Morgan and Jon C. Lohse .....	221

---

# 1 **TERMINAL CLASSIC MAYA OF BELIZE: KEY ISSUES AND QUESTIONS**

*John Morris, Gyles Iannone and Jaime Awe*

---

*Recent archaeological investigations in Belize provide new, and significant, insights to the Terminal Classic (A.D. 800-1050) and subsequent collapse of ancient Maya civilization, but many key questions remain unanswered. Excavations over the past two decades at the Maya centers of Caracol, Minanha, Xunantunich, Cahal Pech, Pusilha, La Milpa, Colha, Blue Creek, Chau Hiix, and other subterranean sites, both informs general phenomena surrounding the collapse and provides specific and varied examples. Research at these Belizean Maya sites document an increase of population and over-settlement of the region in the three centuries just prior to 1050 A.D. In the succeeding two hundred years before and after the Terminal Classic period the lowland Maya at these sites experienced a severe decline in many facets of their civilization including but not limited to population numbers, sophisticated technology, architectural constructions, erection of stelae, disruptions in long distance trade networks, and fewer artistic traditions. Evidence for this decline in Late Terminal Classic Maya architecture, ceramic and technological achievements, as well as evidence of increased warfare and migration, is reviewed and issues requiring further research are highlighted.*

## **Introduction**

Investigations by archaeologists in the past two decades have revealed that many of the hallmarks once attributed to the collapse of the Classic Maya (A.D. 300-900) have their antecedents in the period known as the Terminal Classic (A.D. 800-1050) and perhaps even much further in antiquity than previously assumed. Cleavages and societal fractures in the preceding Late Classic Period (A.D. 550-750) (see Demarest 2004; Martin and Grube 2000; Sharer 1994) may also shed light on the demise of the ancient Maya. In particular, there are strong indications that ancient Maya society was a highly ranked and stratified one during the Late Classic period (Chase and Chase 1993; Hammond 1986), but that many of the socio-political and economic institutions were (became) unwieldy. Maya scholars however, very rarely contemplate on the fragility of the base on which ancient Maya society was constructed. Clearly, the creation and emergence of a complex civilization is an extremely important process and should be thoroughly examined. Maya culture history research does not focus on the

fundamental structures that enabled Maya society, which is unfortunate because we may be able to tease out the salient characteristics from within that underpin the ancient Maya collapse.

The Terminal Classic period is a very short time span, roughly three times less than either the preceding Classic, or the succeeding Postclassic period. Despite its short length, the Terminal Classic period also remains one of the most enigmatic and controversial eras in the history of the ancient Maya. It marks an important period of political, economic, and social transformation throughout Mesoamerica that is mostly in reference to “dramatic collapses”. During this period, Maya centers in the Peten core area were declining, whereas polities to the north in the Yucatan region were on the rise. A recent book on Maya archaeology entitled *The Terminal Classic* edited by Demarest, Rice and Rice (2004) show how the ancient Maya collapsed but it spends far too much ink on warfare and social discontent and other paradigms such as environmental determinism that are strongly emphasized at the expense of

other competing analyses and overviews. Are these accurate portrayals of what we know about the Terminal Classic Maya? The answer is a partial “yes”, but with the important caveat that with more data our thinking of how, why, and when the Maya collapsed is improving. Furthermore, investigations in Belize over the last few years are helping to correct this long-standing imbalance in reporting and information on the Terminal Classic and subsequent “collapse” of the ancient Maya.

We must point out that while there have not been as many detailed, large-scale, studies of Terminal Classic Maya sites, as we have seen for Classic centers, several sites in Belize (Pusilha, Xunantunich, Caracol, Colha, Lamanai and La Milpa) have generated useful data that can be used to analyze the Terminal Classic Maya. The site of Xunantunich (Belize), in particular, has produced crucial details on the Terminal Classic Maya (Leventhal 1997). The construction and occupation of Xunantunich beyond A.D. 1000 is indicative of a vibrant culture desperately trying to hang on to its glorious past. Lecount (1999, 2005) detailed analysis and refinement of ceramic changes in the Late and Terminal Classic provides scholars with a useful tool to compare and contrast with their own findings. New research in caves by the BVAR (Awe et al 2003, 2005.) has also yielded important information on the issue of environmental degradation (read drought) that occurred in the Belize Valley and its implications for the Maya collapse. Despite these advances there remain many more questions than answers about the Terminal Classic Maya cultural development and demise.

### **Terminal Classic Maya of Belize:**

Mayanists often query when were the latest Terminal Classic settlements recorded in Belize? Did the Maya collapse simultaneously at most lowland Maya sites? Was this demise punctuated or gradual?

Research at various sites has been consistent on responding to these questions. Complex societies, like the ancient Maya, were not homogenous. Thus, change can (and did) occur differentially in various places and at different times and we cannot assume that these changes are uniformly mirrored across the rest of that society. Let us examine two areas of Belize. At Pusilha located in Southern Belize, Braswell (Braswell et al 2005 and this volume) has recovered Terminal Classic pottery from surface and floor contexts. He notes that Late Classic Pusilha was a Tepeu-sphere site sharing much with southern Peten, but little with the Belize Valley. However at the end of the 8<sup>th</sup> and early 9<sup>th</sup> centuries at Pusilha, Belize Red from the Belize Valley was imported which demonstrates exchange relations with new regions during this time period. Fine Orange was also imported or manufactured locally, and carved drinking vessels of the Brandy Snifter form also suggest ties with the northwestern Maya lowlands. But the crude and un-standardized Postclassic ceramic assemblage represents a sharp break from Classic traditions. Braswell argues that Pusilha may have been founded at the beginning of the Late Classic period by factions who sought southern Belize as a haven against political troubles in the Peten. Braswell notes that at the end of the Terminal Classic violence permeated the society as his investigations reveal that several individuals were left dead on the largest platform at Pusilha.

In the Sibun Valley which is closer to the center of the country the situation differs. In a sense our questions takes on added import because ethnic considerations impinge on our analysis. Who were the people and settlers of the Terminal Classic in this area? McAnany et al. (2004) based on analyses of some of the late pottery and architecture from Sibun and several other sites in the region argue that the Belize Sibun settlers were Maya but heavily

influenced by Chichen Itza. McAnany (2004) proposes that by the end of Terminal Classic these people living in the Sibun River Valley had become totally amalgamated and fully incorporated in the culture of northern Yucatan. Evidence indicates that during the Terminal Classic period a rich assemblage of foreign traits, namely circular architecture appear to overlie the local traditions which were Peten affiliated such as stela and altar dedication. McAnany and Harrison Buck recent excavations in the Sibun Valley at Pechtun Ha, Oshon, and Obispo exposed examples of Chichen Itza style of circular architecture; these represent the southernmost examples found in the eastern lowlands.

Excavations also recovered Terminal Classic ceramic types associated with Tepeu/Spanish Lookout (Roaring Creek Red dishes, Belize Red dishes and plates. Analyses of the ceramics also demonstrate that Garbutt Creek Red bowls were replaced by a variety of large basin and bowl forms with thick bolstered rims, some containing northern-style polychrome and incised designs. The form and rim treatment is argued to be reminiscent of florescent medium Puuc and Chichen slate ware basins. Clearly, the circular structures in the Sibun Valley shares similarities with other examples from Maya lowlands, especially the Terminal Classic round structures at Uxmal (Kowalski et al. 1996), Nohmul (D. Chase and A. Chase 1982; Hammond 1985) as well as the early phases of the Caracol at Chichen Itza (Pollock 1936; Rupert 1935 [fig 3]). McAnany points out that overarching similarity found in nearly all Terminal Classic circular architecture in the lowlands is the presence of a low plinth or step construction that surrounds the perimeter of the building

The 8<sup>th</sup> century Maya has been characterized as a period of decentralization in which subordinate lords accrued greater powers and figured more prominently in political affairs (e.g. Culbert 1991:325; Fash

1991; Fash and Stuart 1991:172; Schele 1991a;78, 1991b; Stuart 1993:332, 336, 349). Powerful centers such as Caracol and Naranjo were clearly affected by this changing sociopolitical landscape. Caracol erected only one inscribed monument between 680-798 A.D. (Martin and Grube 2000:95), and Naranjo produced only one monument (Stela 20-746 A.D.) between 726-780 A.D. (Martin and Grube 2000:78-79). Minanha royal court came into prominence during a period of regional balkanization but eventually we observed the demise of this royal court at the same time when there is a return to prominence of Caracol and Naranjo; epigraphic records tells us that when Caracol and Naranjo reentered the arena of regional politics at the end of the 8<sup>th</sup> century, they moved quickly to restore their old territories. This involved both centers undertaking military campaigns and/or initiating diplomatic missions within their borderlands, at places such as B'ital and Ucanal (A. Chase 2004:330; Martin and Grube 2000). As Iannone documents, the filling in of elite residences prior to actual site abandonment occurred as part of the Terminal Classic collapse sequence and this has been documented at a number of other centers, including Xunantunich (Lecount et al 2002:44), at La Milpa (Hammond 1999a: 13, 1999b and Lamanai (Graham 2003). These filling events suggest that one of the first consequences of the infamous Maya collapse was often the effacement of both the physical and social ruling houses of many lowland centers. Interestingly, Stela 11 at Copan, the latest monument at the site, may refer to just such an obliteration of a "founder's house" (Martin and Grube 2000:212; Stuart 1993:344-346), an event which has also been interpreted by David Stuart (1993:346) as a possible metaphorical reference to the end of Copan's ruling line. These events suggest that the collapse itself may have had a punctuated quality that has yet to be incorporated into our

model building

### **The Collapse of Ancient Maya Civilization**

As Norman Yoffee (2005:132) points out, “the subject of collapse’ has been a focus in the writings of historians and philosophers for at least two millennia [sic]” (see also Tainter 1988; Yoffee and Cowgill 1988). Although a late addition to this realm of inquiry, laypeople and academics alike have still spent the past two centuries attempting to solve the mystery that is the ancient Maya ‘collapse’. Nevertheless, what forced the southern lowland Maya to desert their cities, and abandon many of their cultural practices, continues to be one of the most hotly debated archaeological topics, both inside and outside academia. This wide- ranging interest in the collapse cannot be simply attributed to our innate attraction to a mystery. Nor is it entirely rooted in the romantic draw of “lost cities in the jungle.” There is, in addition to these two stimuli, a very strong realization that the dramatic demise of the once successful southern lowlands city-states carries with it lessons that must be heeded by contemporary society (Diamond 2005:525; Yoffee 2005:132). For this reason, Arthur Demarest (2004:7) contends that research into the collapse is one of “the very areas where Maya archaeology can make a general contribution to social science.” Yoffee (2005:132) concludes that, “Collapse studies in archaeology are important...if for no other reason than to show that the suppositions and ‘common knowledge beliefs’ that many people have had about collapse are extremely questionable.”

So, the question remains, what have we learned about the collapse of ancient states given our longstanding preoccupation with the topic? In the case of the ‘fall’ of the Maya city-states during the Late Classic to Terminal Classic Transition, there is general consensus on a number of issues. For one, there is near universal agreement with respect to the

material correlates of the collapse. These include: a decline in the erection of monuments, along with their associated dynastic texts and iconography of rulership; the demise of polychrome ceramic production; the abandonment of many forms of inscriptional art; the termination of elite building programs, in some case abruptly- in mid construction; a cessation in the construction of elaborate tombs; a drastic alteration in the form of governance; and, significant migrations and population losses (Culbert 1973, 1988; Chase and Chase 2004:15; Demarest 2001:106; Demarest et al. 2004a:569; Iannone 2005; Lucero 2002; Lowe 1985; Robichaux 2002:341; Webster 2002).

Most Mayanists would also agree that the collapse was not an abrupt political fragmentation that impacted all of the city-states in the southern lowlands simultaneously. Rather, it was a protracted process that played itself out over three centuries, beginning around 750 A.D., and ending approximately 1050 A.D. (Rice et al. 2004:8). For some city-states the collapse was both rapid, and final. For others, and for support populations in general, the decline was often more gradual. Decades of site-specific and regional analyses have made it quite clear that the Late Classic to Terminal Classic transition was also highly variable in character- there is no “one-size-fits-all” collapse sequence for the southern Maya lowlands (Demarest 2001:106; Iannone 2005; Rice et al. 2004:10). Nevertheless, it is also believed that various local collapse sequences can be combined to develop a broader, macro-regional understanding of the decline (e.g., Iannone 2005; Rice et al. 2004:11). Finally, although a few dissenters remain (e.g., Gill 2000), most scholars now view the collapse as a widespread sociopolitical and socioeconomic transformation that was most detrimental to the elite sector of ancient Maya society. In other words, what really “collapsed” in the southern lowlands was the

Classic period style kingship institution and all of its constituent components (Demarest 2001:106; Iannone 2005, 2006; Rice et al. 2004:9).

Notwithstanding the aforementioned points of consensus, a number of contentious issues remain when it comes to the study of the ancient Maya collapse. On a theoretical level, there continues to be considerable debate as to how to characterize the collapse itself. After decades of referring to the demise of the southern lowland city-states as a “collapse,” it has recently become vogue to downplay the significance of the changes that occurred during the shift from the Late Classic to the Terminal Classic period. As such, while there are still authors who continue to refer to the collapse era as a “demographic disaster as profound as any other in human history” (Haug et al. 2003:1733; see also Gill 2000:313), others are reluctant to follow suit, opting for less loaded, less apocalyptic terms- such as cultural transitions, transformation, or realignment (see also Cowgill 1988; Demarest 2001:105-106; Rice et al. 2004:6, 8; Sabloff 1992:108).

One strand of this terminological debate can be traced to the results of individual archaeological projects: those working in regions where the Late Classic to terminal Classic transition was violent and abrupt in character- such as the Petexbatun Region (e.g. Demarest 2004:101), are more at ease with the term “collapse” than those whose data support more subtle transformations (e.g, D. Chase and A. Chase 2004:26; Rice and Rice 2004). Here it is profitable to return to the seminal work of Joseph Tainter (1988:193), who argues that a “Collapse is fundamentally a sudden, pronounced loss of an established level of sociopolitical complexity.” As noted earlier in this paper, there is near universal acceptance that the key feature of the Late Classic to Terminal Classic Transitions was the demise of the institution of kingship in the

southern lowlands. In other words, the upper tier of the ancient Maya sociopolitical hierarchy was truncated (see also Rice et al. 2004:9). This pronounced loss of ...an established level of sociopolitical complexity” was even felt at centers such as Lamanai, which has often been held up as one of the exceptions to the rule with respect to the “collapse” (Pendergast 1986). In our view, there is enough data to support the idea that, in terms of their greater degree of sociopolitical clout, the elite that ruled 8<sup>th</sup> century Lamanai were very different than their 9<sup>th</sup> and 10<sup>th</sup> century counterparts. For this reason, we remain quite comfortable with the term ‘collapse,’ as long as it is used in the manner that Tainter suggests.

Finally, of greatest significance is the fact that Mayanists continue to vociferously debate the reason behind the fall of the southern lowland city-states. As Tainter (1988:194) once pointed out: “Collapse theorists have taken to heart the Maoist dictum to let a hundred schools of thought contend.” This statement definitely rings true for Maya archaeology. Over the years, explanations for the ancient Maya collapse have run the gamut from the external to the internal, from the environmental to the social; from the unicausal to the multicausal (see Rice et al. 2004). This diversity in explanatory positions is partially the result of the infamous archaeological disease known as “mysiteitus” the most pronounced symptom of which is the delusion that one’s microcosm is everyone’s macrocosm. The greater variety of opinions on the collapse are thus, at least partially, the result of site-specific and/or regional databases and developmental sequences for the Late to Terminal Classic transition being projected as proxies for the southern lowlands in their entirety (Demarest 2004a: 546-547).

The diversity of interpretations for the collapse is also a direct result of the complexity of the problem at hand. As

indicated previously, the study of individual city-states suggests that the process of collapse was not the same for every site or region. Not only are the local time frames highly variable, but the circumstances, characteristics, and contributing factors also appear to have been equally diverse (see various papers in Demarest et al. 2004b; Iannone 2005). For this reason, it is understandable that a myriad of theories would emerge to explain the collapse.

Taken at face value, the variable data set does imply that a complex, multicausal model might best account for the collapse. In fact, most Mayanists appear to support this notion, as is attested by the vast majority of the papers contained in the recently published volume on the Terminal Classic edited by Arthur Demarest, Prudence Rice, and Don Rice (2004b). Importantly, recent cross-cultural treatments, such as those by Jared Diamond (2005) and Ronald Wright (2004), also support complex multicausal models for the collapse of early states. Nevertheless, uncausal models still abound. In fact, one of the more popular models in recent years one which has been offered as the eloquently simple panacea for all our collapse problems—is “the drought hypothesis” (e.g. Gill 2000)

One archaeological data set that presents challenges for the drought hypothesis is the infilling and/or termination of elite residential courtyards prior to total site abandonment. Excavations at Belizean centers such as Dos Hombres, Blue Creek, and possibly Punta de Cacao, have exposed large Terminal Classic deposits of ceramic sherds and other items on the floors and stairs associated with elite courtyards (Adams et al. 2004:337). These deposits, some of which, block the entrances to the courtyards themselves, are thought to represent acts associated with “termination” of the elite inhabitants themselves, as opposed to the actual architectural features that they are associated with (Adams 2004:338).

Even more dramatic is the total infilling of royal residential courtyards, and their associated rooms and residential buildings, during the early part of the Terminal Classic period. This practice has been recorded at La Milpa (Hammond 199a, 199b; Hammond and Thomas 1999), Lamanai (Graham 2004), and Minanha (Iannone 2005, 2006). At the latter center the royal residential courtyard and its associated buildings were swept clean prior to laying down a ca. 20cm thick layer of fine sediments over all of the architectural components. Large limestone slabs were then carefully laid upon all floor and stair surfaces, and sturdy construction pens were constructed to hold the ca. 5 meters of rubble that was required to bury all of the features associated with the late Classic royal residential compound (except the upper third of the largest pyramidal structure). Significantly, there are no signs of destruction associated with this event; the vaulted buildings were, for the most part, buried intact by laboriously carrying dry-stone fill through the narrow doorways and meticulously stacking it to the ceilings. Following this massive investment of organized labor, a rather impoverished Terminal Classic residential group was erected over the buried elite architecture. If droughts were the cause of the decline, and if things were as bad as the proponents of this model say, how come the Minanha Maya did such a careful, and labor intensive job of burying their Late Classic Royal residence? And why did they do this when a sizable population continued to reside at the center? The only reasonable answer is that, although the Minanha community survived into the Terminal Classic, its royal court—and by association the Minanha city-state itself—ceased to exist. In other words, the institution of kingship met its demise prior to any form of overall site abandonment.

This data conflicts with Gill’s model of drought induced famine. For example, Gill

(2000:374) argues that, “Famine is generally a class affliction. It hits the poor hardest and first...then disintegration begins with the lowest levels of society, including the peasants, and it proceeds from the bottom up.”

Elsewhere, he surmises that, “In the case of the Maya, due to the length and severity of the droughts, the flow of food and water was shut off, the people died from hunger and thirst, and the social system collapsed from the bottom up”(Gill 2003:371). The Minanha data, along with that from the other centers mentioned above, suggests the exact opposite.

The first segment of society to meet their demise was the elite, and particularly the royalty. That the surviving communities were still relatively strong is implied by the amount of labor and organization that went into the infilling and termination events previously discussed. To quote Gill (2000:345), “...the construction of major formal buildings, or the lack thereof, can be an indicator of the vitality of a city and, by implication, of the population with a certain degree of vitality. Starving, thirsting wretches on the doorstep of death did not carry out these building acts.

In summary, the Terminal Classic droughts may have been difficult to overcome because of their severity. Nevertheless, the actual archaeological record provides no strong evidence for a pan-lowland famine. Equally important is the fact that the culture history clearly shows that some regions, such as the Petexbatum, may have collapsed prior to the onset of droughts, for various economic and political reasons. The initial collapse may have eventually put other areas in jeopardy, as migrants from the distressed region put demographic pressures on the city-states of the east. Indications are that these migrations began prior to the onset of any droughts, although aridity may have played a role in later demographic shifts.

## Conclusions

A heightened interest by scholars in

the Terminal Classic Maya has emerged (Demarest 2004; Rice and Rice 2003). What evidence is there for increasing social and political stress during the Terminal Classic period? We can point to the signs of extensive warfare and the construction of public (*versus* domestic) architecture for defensive purposes appearing by ca. 700 A.D. in the Belize Valley (Brown and Garber 2005) thus signaling that Maya society was undergoing cleavages and other social stress.

The rise of new city-states in the early 8<sup>th</sup> century - again prior to any proposed droughts- may have also put increased strain on the established tributary and exchange networks. Eventually, populations did begin to decline- although our understanding of the actual demographic losses continues to be hampered by the fact that our assessments of the Terminal Classic population levels are likely underestimations, given the fact that Late Classic ceramics continued to be used well into the Terminal Classic (D. Chase and A. Chase 2004:18-19; Demarest et al. 2004a: 550; Rice and Rice 2004:128; Sabloff 1973: 113-116). What is clear is that the elite, and particularly the royal segments of society, fell first. The collapse was therefore initially a top down process, a factor that once again contradicts the expectations of a collapse model based on drought and famine. Drought may have contributed to the decline of the institution of kingship, and eventually the whole population, but it was clearly a secondary cause.

Other recent excavations and analyses of Terminal Classic materials from Pusilha, Caracol, Sibun Valley sites, Belize River Valley Xunantunich, and the Three Rivers Region have resulted in new perspectives on the demise of ancient Maya civilization, and what is clearly one of the most fascinating stages of Mesoamerican cultural development.

In this regard, it is important that researchers not lose sight of what ought to be the major research goals- to understand the trajectory of

how and why politically and economically complex societies wax and wane; the how, why and when of ancient Maya “civilization” fall.

## References Cited

- Adams, Richard E. W., Hubert R. Robichaux, Fred Valdez Jr., Brett A. Houk, and Ruth Mathews  
2004 Transformations, Periodicity, and Urban Development in the Three Rivers Region. In *The Terminal Classic in the Maya Lowlands*, edited by Arthur A. Demarest, Prudence M. Rice, and Don S. Rice, pp. 324-341. University of Colorado Press, Boulder
- Awe, Jaime J., Cameron Griffith, and Sherry Gibbs  
2005 Cave Stelae and Megalithic Monuments in Western Belize. In *In the Maw of the Earth Monster: Mesoamerican Ritual Cave Use*, edited by James E. Brady and Keith M. Prufer, Pp. University of New Mexico Press, Albuquerque.
- Brady, James E.  
1994 The Role of Caves in Ancient Maya Cosmology. Paper presented at the “Earthly Matters II” Roundtable. Dumbarton Oaks, Washington, DC.
- Brady, James E. and Andrea Stone  
1986 Naj Tunich: Entrance to the Maya Underworld. *Archaeology* 39(6): 18-25.
- Chase, Diane Z., and Arlen F. Chase  
2004 Hermeneutics, Transitions, and Transformations in Classic to Postclassic Maya Society. In *The Terminal Classic in the Maya Lowlands*, edited by Arthur A. Demarest, Prudence M. Rice, and Don S. Rice, pp. 12-27. University of Colorado Press, Boulder.
- Cowgill, George L.  
1988 Onward and Upward with Collapse. In *The Collapse of Ancient States and Civilizations*, edited by Norman Yoffee and George L. Cowgill, pp. 244-276. University of Arizona Press, Tucson.
- Culbert, T. Patrick (editor)  
1973 *The Classic Maya Collapse*. University of New Mexico Press, Albuquerque.
- 1988 The Collapse of Classic Maya Civilization. In *The Collapse of Ancient States and Civilizations*, edited by Norman Yoffee and George L. Cowgill, pp. 69-101. University of Arizona Press, Tucson.
- Daniels, Elin C. and Robert J. Sharer (editors)  
1992 *New Theories on the Ancient Maya*. University of Pennsylvania, University Museum, Monograph 77. Philadelphia, PA.
- Demarest, Arthur  
2004 *Ancient Maya: The Rise and Fall of a Rainforest Civilization*. Cambridge University Press, Cambridge (UK).
- Demarest, Arthur A.  
2001 Climate Change and the Classic Maya Collapse: The Return of Catastrophism. *Latin American Antiquity* 12:105-107
- Demarest, Arthur A., Prudence M. Rice, and Don S. Rice  
2004a The Terminal Classic in the Maya Lowlands: Assessing Collapses, Terminations, and Transformations. In *The Terminal Classic in the Maya Lowlands*, edited by Arthur A. Demarest, Prudence M. Rice, and Don S. Rice, pp. 545-572. University of Colorado Press, Boulder.
- Demarest, Arthur A., Prudence M. Rice, and Don S. Rice (editors)  
2004b *The Terminal Classic in the Maya Lowlands*, University of Colorado Press, Boulder.
- Diamond, Jared  
2005 *Collapse: How Societies Choose to Fail or Succeed*. Viking, Toronto.
- Garber, James F., M. Kathryn Brown, W. David Driver, David M. Glassman, Christopher J. Hartman, F. Kent Reilly III, and Lauren A. Sullivan  
2004 Archaeological Investigations at Blackman Eddy. In *The Ancient Maya of the Belize Valley: Half a Century of Archaeological Research*, edited by James F. Garber, pp. 48-69. University Press of Florida, Gainesville.
- Gill, Richardson B.  
2000 The Great Maya Droughts. University of New Mexico Press, Albuquerque.

- Gifford, James C.  
1976 *Prehistoric Pottery Analysis and the Ceramics of Barton Ramie in the Belize Valley*. Harvard University, Peabody Museum of Archaeology and Ethnology, Memoir 18. Cambridge, MA.
- Graham, Elizabeth A.  
2004 Lamanai Reloaded: Alive and Well in the Early Postclassic. In *Research Reports in Belizean Archaeology, Volume 1*, pp. 223-241.
- Guderjan, Thomas H.  
2004 Public Architecture, Ritual, and Temporal Dynamics at the Maya Center of Blue Creek, Belize. *Ancient Mesoamerica* 15: 235-250.
- Hammond, Norman  
1999a "A Pillar of State... Majestic, Though in Ruin": The Royal Acropolis of La Milpa. *Context* 14(1): 11-15.  
1999b A Maya Throne Room at La Milpa. Pre-Columbian Art Research Institute Newsletter 28: 12-13.
- Hammond, Norman, and Ben Thomas  
1999 Another Maya Throne Room at La Milpa. *Context* 14(1): 15-16.
- Haug, Gerald H., Detlef Gunther, Larry C. Peterson, Daniel M. Sigman, Konrad A. Hughen, and Beat Aueschilmann  
2003 Climate and the Collapse of Maya Civilization. *Science* 299: 1731-1735.
- Healy, Paul F.  
1990 Excavations at Pacbitun, Belize: Preliminary Report on the 1986 and 1987 Investigations. *Journal of Field Archaeology* 17(3): 247-262.  
1992 The Ancient Maya Ballcourt at Pacbitun, Belize. *Ancient Mesoamerica* 3: 229-239.
- Healy, Paul F., David Cheetham, Terry G. Powis, and Healy, Paul F., Bobbi Hohmann, and Terry G. Powis  
2004 The Ancient Maya center of Pacbitun. In *The Ancient Maya of the Belize Valley: Half a Century of Archaeological Research*, edited by James F. Garber, pp. 207-227. University Press of Florida, Gainesville.
- Iannone, Gyles  
2005 The Rise and Fall of an Ancient Maya Petty Royal Court. *Latin American Antiquity* 16:26-44.  
2006 Investigations in the Buried Royal Residential Courtyard at Minanha, Belize. In *Research Reports in Belizean Archaeology, Volume 3*, edited by John Morris, Sherilyne Jones, Jaime Awe, and Christophe Helmke, pp. 149-160. Institute of Archaeology, National Institute of Culture and History, Belmopan, Belize.
- Lowe, John W.G.  
1985 The Dynamics of Apocalypse: A Systems Simulation of the Late Classic Maya Collapse. University of New Mexico Press, Albuquerque.
- Lucero, Lisa  
2002 The Collapse of the Classic Maya: A Case Study for the Role of Water Control. *American Anthropologist* 104: 814-826.
- Martin, Simon and Nikolai Grube  
2000 *Chronicle of the Maya Kings and Queens: Deciphering the Dynasties of the Ancient Maya*. Thames and Hudson, London (UK).
- McAnany, Patricia A.  
1995 *Living with the Ancestors: Kinship and Kingship in Ancient Maya Society*. University of Texas Press, Austin.  
2004 *K'Axob: Ritual, Work and Family in an Ancient Maya Village*. University of California-Los Angeles (UCLA), Cotsen Institute of Archaeology, Monumenta Archaeologica 22. Los Angeles.
- McKillop, Heather  
2004 *The Ancient Maya: New Perspectives*. ABC Cleo, San Diego.
- 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.
- Rice, Prudence M., and Don S. Rice  
2004 Late Classic to Postclassic

- Transformations in the Peten Lakes Region, Guatemala. In *The Terminal Classic in the Maya Lowlands*, edited by Arthur A. Demarest, Prudence M. Rice, and Don S. Rice, pp. 125-139. University of Colorado Press, Boulder.
- Rice, Prudence M., Arthur A. Demarest, and Don S. Rice  
2004 The Terminal Classic and the "Classic Maya Collapse" in Perspective. In *The Terminal Classic and the Maya Lowlands*, edited by Arthur A. Demarest, Prudence M. Rice, and Don S. Rice, pp. 1-11. University of Colorado Press, Boulder.
- Robichaux, Hubert R.  
2002 On the Compatibility of Epigraphic, Geographic, and Archaeological Data, with a Drought-Based Explanation for the Classic Maya Collapse. *Ancient Mesoamerica* 13:341-345.
- Sabloff, Jeremy A.  
1973 Continuity and Disruption during the Terminal Late Classic Times at Seibal: Ceramics and Other Evidence. In *The Classic Maya Collapse*, edited by T. Patrick Culbert, pp. 107-131. University of New Mexico Press, Albuquerque.  
  
1992 Interpreting the Collapse of Classic Maya Civilization. A Case Study of Changing Archaeological Perspectives. In *Metaarchaeology: Reflections by Archaeologists and Philosophers*, edited by Lester Embree, pp. 99-119. Kluwer Academic Publishers, Boston.
- Schele, Linda and David A. Freidel  
1990 *A Forest of Kings*. William Morrow, New York, NY.
- Sharer, Robert J.  
1994 *The Ancient Maya, 5<sup>th</sup> edition*. Stanford University Press, Stanford, CA.
- Tainter, Joseph A.  
1988 *The Collapse of Complex Societies*. Cambridge University Press, New York.
- Webster, David  
2002 *The Fall of the Ancient Maya*. Thames and Hudson, New York.
- Wright, Ronald  
2004 *A Short History of Progress*, Anansi, Toronto.
- Yoffee, Norman  
2005 *Myths of the Archaic State*. Cambridge University Press, New York.
- Yoffee, Norman, and George L. Cowgill (editors)  
1988 *The Collapse of Ancient States and Civilizations*. University of Arizona Press, Tucson.

---

## 2 **“THIS IS THE END:” ARCHAEOLOGICAL TRANSITIONS AND THE TERMINAL CLASSIC PERIOD AT CARACOL, BELIZE**

*Arlen F. Chase and Diane Z. Chase*

---

*Ongoing excavations at Caracol, Belize have yielded a significant amount of data pertinent to the Terminal Classic Period. These data are especially relevant to interpretations of the Southern lowland Maya collapse. Caracol has produced meaningful temporal and spatial data that help to expose conceptual problems in the identification, interpretation, and dating of Terminal Classic contexts. Of particular interest have been the on-floor ceramics in many of Caracol's central buildings that have been systematically collected, assembled, and illustrated over more than two decades. These materials not only provide information relative to sub-assemblages of vessels that were physically used together, but also allow latest building (and, in some cases, room) function to be inferred. These ceramic sub-assemblages also contain trade items that permit insight into the social and economic relationships that were maintained by Caracol's latest inhabitants. Ceramics that was used in the site's extensive settlement system can be compared with ceramics used at the site epicenter, which reveals the use of two distinct ceramic sub-complexes, by Caracol's inhabitants during the Terminal Classic era. When combined with other data classes, the archaeology from Caracol permits a detailed understanding of what transpired at the site before its final abandonment.*

### **Introduction**

There are a series of times in Maya “prehistory” when there appears to be rapid change, providing challenges to archaeological interpretation. When such transitions are accompanied by alterations in material culture that affect only one segment of any given society, archaeological analysis may be hampered, particularly if sampling design and preconceived models do not readily lead to the identification of contemporary variation. This is especially true for the transition between the Preclassic and Classic Periods in the Maya area - sometimes called the “Protoclassic” - and is also the case for the transition between the Classic and Postclassic eras - usually called the “Terminal Classic Period.” At Caracol, Belize, the Terminal Classic Period elite material culture changed, but the material culture used by the bulk of the population remained relatively constant. The recognition of this fact has clear repercussions for reconstructions of the

Terminal Classic Period and the Classic Maya collapse.

### **The Terminal Classic**

The Terminal Classic era, dating from approximately A.D. 780 through A.D. 900, is key to interpretations of the ancient Maya because it precedes or is conjoined with the abandonment of many of the larger cities. The Terminal Classic has proven particularly enigmatic, especially as hieroglyphic texts do not generally exist to guide the archaeologist – and material culture was in the process of changing – as were traditional interment patterns and other aspects of the archaeological record (e.g. D. Chase and A. Chase 2006).

While broadly recognized as being the latest temporal era before the Classic Maya collapse, traditionally the Terminal Classic was identified only in terms of recognized ceramic type fossils. As originally defined for Uaxactun, Guatemala (and subsequently elsewhere), Terminal Classic ceramics were the detritus left over when recognized “Late Classic” types were

removed from analyzed samples (Smith 1955). Unfortunately, while various scholars have noted problems in the identification of Terminal Classic and Early Postclassic materials (e.g. Pendergast 1986, 1990), a full contextual revision of Terminal Classic ceramics and other artifactual materials has not yet taken place. Type fossils continue to be used to define the transition between the Late Classic and Postclassic Periods.

Several factors led to this over-dependence on specific ceramic subsets to recognize the Terminal Classic time period (see also A. Chase and D. Chase 2004a: 344). Grounded in an older model of Maya sites as vacant ceremonial centers, there was a widespread, but mistaken, belief that palace buildings were not lived in, being only sporadically used. If they were not true residences, there would be no contemporary garbage associated with building floors. Thus, there was no intentional searching for *in situ* remains, it was a foregone conclusion that none existed. The end result was a self-fulfilling prophecy in which previously identified type-fossil ceramic types took on a meaning of their own and became the only way to recognize the Terminal Classic Period.

Because many of the last remains at any site were never sealed in construction, archaeologists have had methodological problems interpreting these data. Material found during the excavation of buildings often appeared to be extremely broken and fragmentary; the assumption was that these artifacts were remnants of later re-occupation. The material in the humus and overlying plazas and latest constructions was viewed as being unusable analytically (e.g. Adams 1971). The type fossil approach to the Terminal Classic, in conjunction with the cessation of dated monument erection, led to views of rapid depopulation at sites like Tikal, Guatemala;

in fact, the type fossils were ascribed to subsequent squatters living in collapsing buildings (Culbert 1973). Yet, the archaeological reality is likely something very different, if the conclusions derived from Caracol can be extended to other sites.

The earlier assumptions that Classic Maya buildings did not have use-related material associated with their floors have been laid to rest by archaeological work at Caracol (A. Chase and D. Chase 2004a, 2005; D. Chase and A. Chase 2000) and at other sites like Aguateca (Innomata 1997; Innomata and Triadan 2000) and, even further such as Xochicalco (Webb and Hirth 2003) that emphatically demonstrate that *de facto* refuse may indeed be found. However, these various projects also have shown that any consideration of the Terminal Classic requires a critical and careful use of data that interdigitates laboratory analysis with field methodology.

Areal clearing of building rooms and platforms at Caracol has revealed that many are associated with abandonment materials. Some of the materials are pottery and artifacts left where they were in the process of being used. Others constitute “sheet refuse” (Schiffer 1987), items thrown or placed in a certain area for later trash disposal. Refuse not only includes pottery but also burnt animal bone and the remains of craft production activities. However, in all of these instances, the debris is composed of **reconstructable** vessels and broken artifacts that were clearly used at that locus. In a few rare cases, Terminal Classic trash was compacted into units of fill that were meant to form a building block for a larger, but never completed, construction.

These kinds of contexts shift the focus of archaeological study to a close collaboration between the analyst and the excavator (e.g., Berggren and Hodder 2003). Rather than simply counting and typing sherds, the analyst can reconstruct whole

vessels, deduce minimum vessel counts, and hopefully see what the entire assemblage or sub-assemblage looked like in specific contexts. Ceramic vessel forms can be combined with other remains, such as faunal materials, to more fully delineate ancient activities. This approach better permits an interpretation of specific contexts. The archaeological focus becomes the functional study and analysis of deposits as well as the delineation of assemblages, sub-assemblages, and subcomplexes – and the identification of single-point-in-time abandonment materials; this allows for better intra-site dating and inter-site cross dating. Thus, not only does a consideration of abandonment materials lead to interpretations of function, but they also lead to refined dating of materials not usually possible in traditional analyses in other than burial or cache contexts.

When archaeological materials are considered in this holistic way, different paradigms and interpretations may evolve. This can be seen in the research that has been undertaken at El Ceren, El Salvador, by Payson Sheets (1998) and his colleagues (Sheets et al. 1990) where ancient community structure is being postulated and commonly held assumptions about the dating and distribution of archaeological materials have been challenged. Similarly, there are other excavated contexts in the Southern lowlands that have served as “Rosetta stones” for the Terminal Classic Period. In particular, we wish to talk about contexts that we have excavated at Nohmul, Belize in the late 1970s and, more recently, at Caracol. Contexts at both of these sites were and are important to resolving lingering questions of cross dating in the Maya lowlands and elsewhere in Mesoamerica. They also have an impact on interpretations of the Classic Maya collapse.

### **Nohmul, Belize**

In order to investigate the transition between the Postclassic and Classic Periods, Structure 20 at Nohmul, Belize was selected for excavation by analyzing mapped settlement. The construction seemed oddly out of place in the eastern plaza of the Nohmul epicenter, as it blocked access to two other range structures. Its low square form also seemed out of place in the repertoire of Classic Period architecture. With these facts in mind, we excavated Nohmul Structure 20 in 1978 with the aid of Norman Hammond’s Corozal Project, which was excavating at Cuello at the time. In 1979 we returned to excavate an anomalously placed Nohmul Structure 9 (D. Chase and A. Chase 1982; D. Chase 1982a, 1982b).

The two structures excavated at Nohmul both proved to be single-phase constructions built directly on the latest plaza floor in the eastern plaza at that site. Besides being stratigraphically late, both buildings were also of unusual form. Subsequently defined as a patio-quad, Structure 20 proved to be almost identical in size to others only known from the site of Chichen Itza; Structure 9 proved to be a round platform and building, almost identical in size to an earlier version of Chichen Itza’s famous Caracol (not to be confused with the site of that name in central Belize). Thus, architecturally, both buildings appeared out of place in northern Belize and had some obvious bearing on the occupation at Nohmul just prior to its abandonment.

Even more surprising than the architecture were the ceramic materials. Within the fill of Structure 9 and abutting the rear of Structure 20 were the same kinds of pottery. The materials associated with Structure 20, however, included both *in situ* de facto debris and sheet refuse, indicating coeval use of diverse ceramic types that

could be largely reconstructed. Based on cross-fits between small sherds in the interior patio area of Structure 20 and the more complete shattered vessels in the alley behind the building, we were able to show that the materials behind the building had once been used within the edifice. The Structure 20 vessels consisted of a series of finewares and cooking vessels that included local and imported slatewares, local blackwares and redwares, red and cream tricklewares, as well as a grater bowl, a drum, and a San Jose V serving platter (Figure 1). Functionally, the building minimally had been used to feed and presumably entertain a group of high status individuals. Temporally, this excavated pottery proved to be a ceramic stone for aligning Terminal Classic ceramic sequences between the Northern and Southern lowlands (D. Chase and A. Chase 1982).

At the time of our Nohmul excavations, Chichen Itza was widely viewed as a Postclassic site (some books still incorrectly place Chichen Itza in this time horizon; e.g. M. Coe 2005). Archaeologists now recognize that the bulk of Chichen Itza's architecture and occupation date to the Terminal Classic Period (Cobos 1999, 2004; Ringle et al. 1998). Much of the older temporal argument that placed Chichen Itza in the Postclassic Period derived from Tozzer's (1957) ethnohistoric interpretation of Chichen Itza and the ceramic alignment of the Sotuta, Hocaba, and Cehpech ceramic complexes (Brainerd 1958; Smith 1971; A. Chase and D. Chase 1985). What the data from Nohmul showed were problems in the then accepted sequential ceramic dating of Northern lowland pottery by demonstrating that several diagnostic types found in the Cehpech and the Sotuta ceramic complexes had to be coeval with other materials

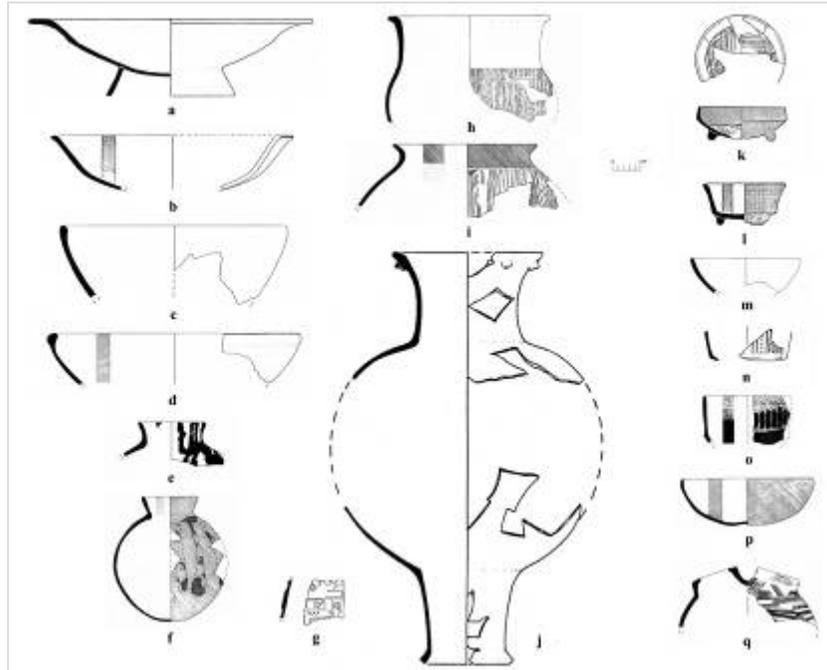
designated as being Terminal Classic in the Southern lowlands (San Jose V and local northern Belize wares). Thus, a single functional context (Structure 20) from an outlier site (Nohmul, Belize), probably only peripherally related to more main-stream interactions, provided a ceramic Rosetta stone for cross-dating and re-evaluating commonly held temporal suppositions and paradigms regarding the Terminal Classic Period.

### **Santa Rita Corozal, Belize**

Our Nohmul experience with use-related materials replayed itself at Santa Rita Corozal between 1979 and 1985, but only in Postclassic contexts. At Santa Rita Corozal we were able to find abundant Late Postclassic abandonment materials in association with architectural remains and to make functional interpretations of sub-assemblages and ritual patterns (D. Chase 1982a, 1985a, 1985b; D. Chase and A. Chase 1988, 2000). However, *in situ* earlier Terminal Classic Period deposits remained elusive. While abundant and having many of the same local types as were found at Nohmul, most of the Terminal Classic ceramics at Santa Rita Corozal occurred in building fill. Nowhere was sheet refuse of a Terminal Classic date located and the stratigraphic sequence indicated a disjunction between the Terminal Classic and Postclassic Periods.

### **Caracol, Belize**

Given our success with recovering abandonment materials at both Nohmul and Santa Rita Corozal, the recovery of these kinds of deposits was one of our initial goals when we started excavations at Caracol in 1985. By our second season at Caracol, we had already identified *in situ* on floor remains associated with both Structures A3 and B19. By our fourth field season in 1988, we were excavating abandonment



**Figure 1.** Terminal Classic pottery associated with Nohmul Structures 9 and 20: **a.** Kik Red; **b.** Taak Orange-Red; **c.** Ohel Red; **d.** Campbells Red; **e.** Sansomal Black-on-Cream; **f.** Chacil Red-on-Black; **g.** Tzibana Gougged-Incised; **h.** Chambel Striated; **i.** Red Neck Mother Striated; **j.** Chembeku Modeled; **k.** Xixilic Incised; **l.** Metzabok Slate; **m.** Savinal Cream; **n.** Usukum Gougged-Incised; **o.** Achiote Black; **p.** Kik Red; **q.** Buyuk Striated.

materials associated with palace buildings on Caana. The recognition that these materials were associated with palaces meant that an inordinate amount of time was spent on articulation between the fieldwork and the laboratory work so that both could inform each other in a feedback relationship. And, if palaces were to be cleared, there was also a need for stabilization. With this in mind and in consort with the then Belize Department of Archaeology, we approached the United States Agency for International Development in 1988 for funds for tourism development. When these were awarded, we were able to begin to excavate palaces and range structures in earnest and, in the process, recovered abundant *in situ* artifactual materials that could be used for functional and temporal information. Later, with the assistance of the Tourism Development Project directed by Dr. Jaime Awe, we were able to continue the areal

clearing of Caracol's palaces. Even more recently, we have recovered abandonment materials in a non-palace context that serves as a second Rosetta stone for cross-dating Terminal Classic ceramics with wider portions of Belize and Mesoamerica.

However, the recognition of Caracol's Terminal Classic Period material expression was a long-term negotiation with the archaeological record. In spite of extensive excavation in more than 107 residential groups at the site, the recovery of easily recognizable Terminal Classic remains proved somewhat problematic. When refuse was found in the outlying settlement, it was usually comprised of utilitarian vessels that could not be tightly dated as to type (e.g. A. Chase and D. Chase 2004a: 354). Burial units that contained ceramics in the settlement area tended to contain ceramic vessels that could be labeled as generically "Late Classic." Only in a few

cases could Terminal Classic contexts be easily identified – and, even in these contexts, some of the vessels could just as easily have been labeled “Late Classic.” Nevertheless, the widespread occurrence of Terminal Classic pottery in isolated contexts in the settlement area indicated that Caracol was occupied during this time period and that population numbers were likely significant; minimally 25% of residential groups, and probably at least double this figure, may be assigned a Terminal Classic Period dating (A. Chase and D. Chase 2005:85). However, the bulk of the ceramics that were used in these clearly late residential groups are difficult to sort as to time; many are more comfortable with simply a “Late Classic” designation.

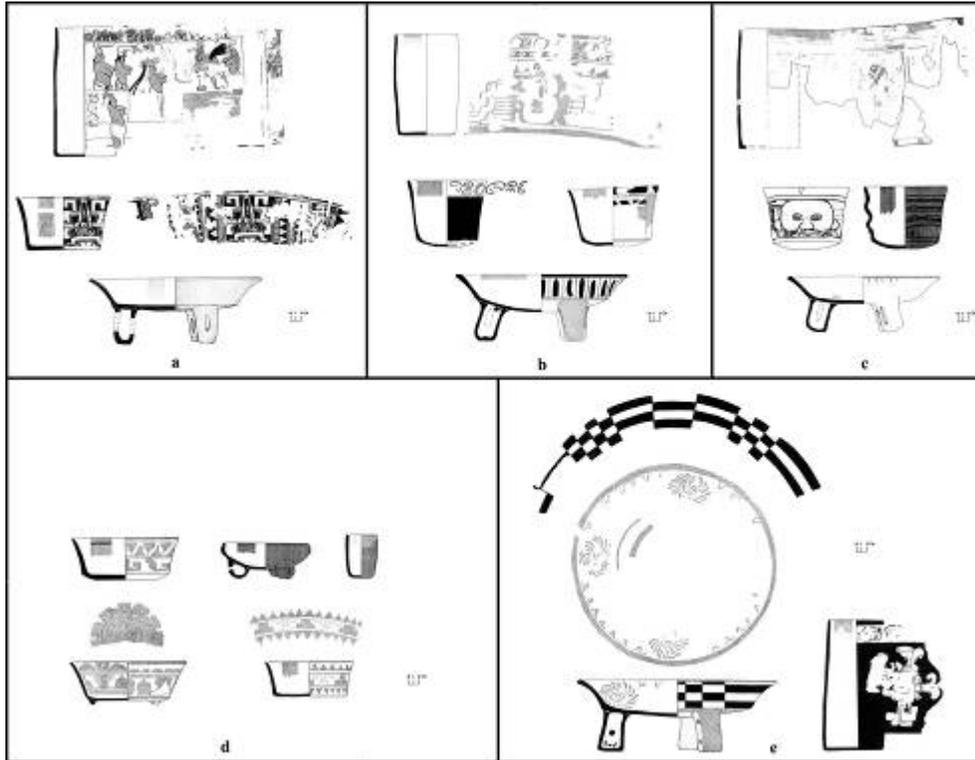
This is not the case in the site epicenter. In contrast with the more temporally amorphous materials found in Caracol’s outlying settlement, the large numbers of ceramics that have been recovered from the floors of Caracol’s epicentral buildings are quite consistent among the different palaces and contain pieces that would be at home in Terminal Classic assemblages elsewhere in the Southern Maya lowlands. However, isolated and recognizable finewares and domestic Terminal Classic pottery sufficiently occurs in the core settlement to demonstrate temporal overlap with the palace remains.

The Caracol research has shown that minimally two distinct sub-assemblages were in use during the Terminal Classic Period at the site. One sub-assemblage, found in Caracol’s residential groups, continued to use local utilitarian and fineware ceramics with only the occasional inclusion of pieces easily defined as Terminal Classic from the second sub-assemblage. The second sub-assemblage, associated with Caracol’s epicentral palaces,

used distinctive fineware ceramics that in some cases are tradewares and in other cases are local imitations of forms and decoration found elsewhere in the Maya lowlands; utilitarian wares in the epicenter are a combination of local and non-local styles. Because the one ceramic sub-assemblage is almost always associated with palaces and the other occurs more frequently in non-elite contexts, we (A. Chase and D. Chase 2004a, 2005) have referred to these different sub-assemblages as “class-linked ceramics.”

The epicentral Terminal Classic palace ceramics are quite plentiful and each recovered sub-assemblage contains materials that correlate it to other epicentral sub-assemblages. In contrast, however, the site’s epicentral burial ceramics that may be dated to the Terminal Classic (Figure 2a-c,e) mirror ceramics found in Late Classic contexts from throughout the site. While the late burials can be sorted out stratigraphically, ceramically, they are difficult to clearly distinguish from more generic Late Classic Period interments. Epicentral caching practices demonstrate that polychrome ceramics, presumably imported to Caracol, also continued to be used in the Terminal Classic Period (Figure 2d).

Interestingly, among the first Terminal Classic associations uncovered was the pairing of incensarios in Caracol’s temples, a pattern also found in the later Postclassic Period at Santa Rita Corozal (D. Chase 1988). Paired Terminal Classic incensarios have been found in association with three Caracol temples - Structures A3, A6, and B19. A double pair of incensarios also occurs with Structure A31. The incensario forms are both local and exotic. The pairings and their locations are highly symbolic. However, non-paired incensarios are associated with two palace rooms on the

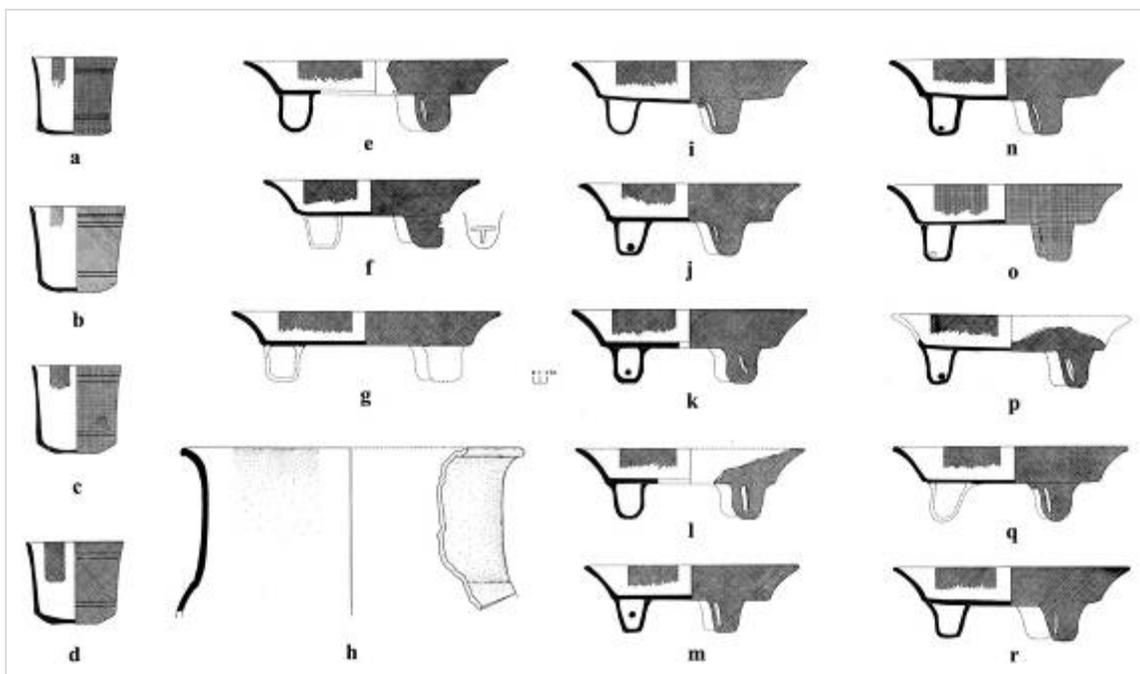


**Figure 2.** Terminal Classic pottery from the Caracol epicenter associated with burials and caches: **a.** S.D. C18U-2 in Structure B5 (Joyac Cream Polychrome; Zacatel Cream Polychrome; eroded Infierno Black); **b.** S.D. C C172C-3 in Structure I20 (Zacatel Cream Polychrome [2]; Batcab Red Polychrome [2]); **c.** S.D. C117C-4 from Structure B34 (Joyac Cream polychrome; possibly Carro Modeled; Zacatel Cream Polychrome); **d.** S.D. C4B-1 from Structure B19 (burned Tinaja Red [2]; Danta Orange-Polychrome [3]); S.D. C75B-2 from Structure B66 (Zacatel Polychrome[2]).

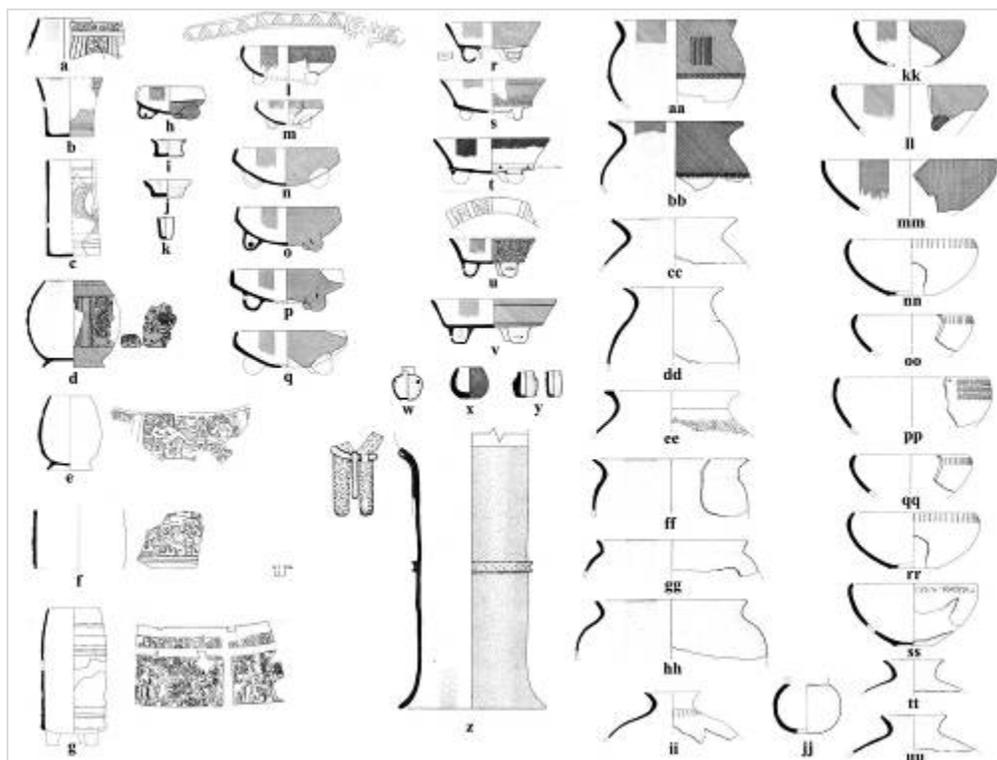
summit of Caana, along with serving wares, storage vessels, and a free-standing burner (or portable stove); the presence of incensarios in this location suggests that Caracol's highest elite carried out both private and public ritual with these items.

Most palace contexts include a combination of serving and storage vessels. A sealed room suite on the side of Structure B19 contained 1 large storage jar, 13 blackware tripod plates, and 4 large cups or vases (Figure 3). Specialized storing and serving vessels are associated with the Caana mid-range range structure. Serving and storing vessels, including a *mocaljete*, were also recovered across the B Plaza from Caana in Structure B4 and B6. Structure A39 in the Central Acropolis similarly

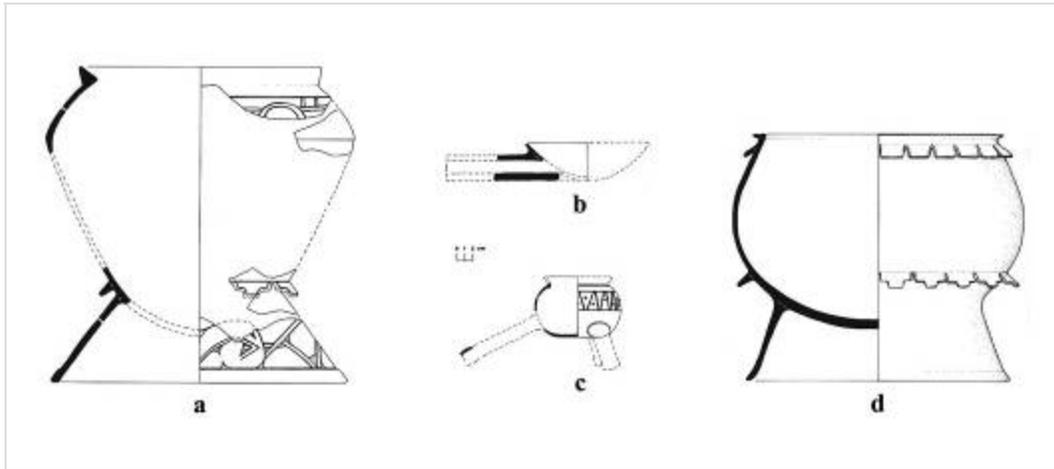
contained serving and storage vessels, as well as a burner. Vessels associated with the C Group palace included serving vessels and 2 lid-like incensarios (see Awe 1985 for Caledonia comparisons). Besides incensarios, the Structure A6 sub-assembly contains a wide range of serving vessels ranging from platters to plates to drinking cups as well as minimally three cooking pots. The vessels associated with the Barrio floors and fill blocks also contain a host of serving vessels, a large number of which were non-local, as well as cooking vessels, miniature vessels, and the lower half of a gigantic drum (Figure 4). Other locales within the epicentral limits have produced similar pieces from this same ceramic sub-assembly that focuses on both local and



**Figure 3.** Terminal Classic pottery on room floor beneath fill in sealed room immediately east of Structure B19: **a-g** and **i-r** Inferno Black; **h**. Valentin Unslipped



**Figure 4.** Terminal Classic pottery associated with the Barrio complex: **a**. Torro Gouged-Incised; **b, m, u**. Cameron Incized; **c**. Azucar Impressed; **d-e**. Pabellon Modeled-Carved; **f-g**. Sahcaba Modeled-Carved; **h, n-q, t, x, kk-mm, ww, yy**. Tinaja Red; **i-k**, Ceiba Unslipped; **l**. San Julio Modeled; **s**. Platon Punctated; **r, v**. Martin's Incised; **w, y, cc, dd, ff-hh, jj**. Valentin Unslipped; **z**. Apop Modeled; **aa-bb**: Sombrero Appliquéd; **ff**. Encanto Striated; **ii, nn-ss**. Pantano Impressed.



**Figure 5.** Censers associated with the front of Structure A31: **a.** related to Lamanai Orange-Redware; **b.** probably Miseria Appliqué; **c.** possibly Kilikan Composite; **d.** undesignated type.

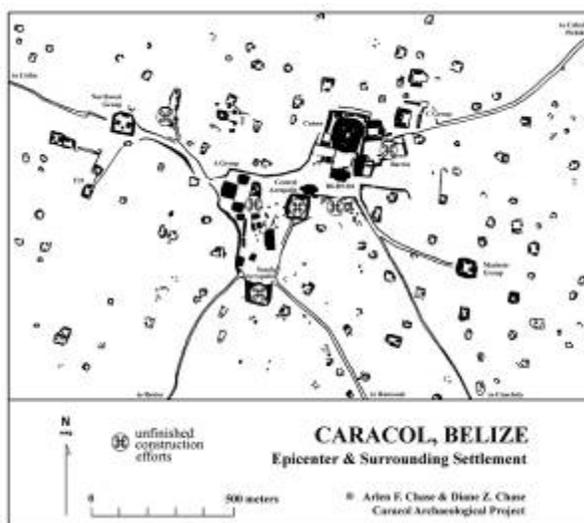
exotic pottery. During the 2006 field season, excavation of Structure A31, a non-palace epicentral construction west of the A Group ballcourt, yielded a sub-assembly of 21 vessels; while the majority of these vessels could be classified as either serving or utilitarian wares, four exotic incensarios were also recovered (Figure 5). These censers, clearly in a Terminal Classic abandonment context, are of relevance to issues of cross dating both within and outside of the Maya area.

Although important, ceramics do not constitute the only data class that informs us about the Terminal Classic at Caracol. Other artifact classes and non-portable remains also provide important clues. *In situ* remains on Caracol's latest residential floors include imported seafood, shell, jadeite, and obsidian. Small line-of-stone buildings of Terminal Classic date are found in many epicentral plazas at Caracol and crude substructures of similar date ring the epicenter and were used as manufacturing loci for stone tools and bone implements. In at least one case, the low epicentral remains are associated with a reset altar. It is suspected that some of Caracol's other monuments, such as Stela 3, were also

moved about and reset in the Terminal Classic, perhaps also accounting for a sheet-copper frog that was found in a Caracol sub-stela cache by Satterthwaite. However, the latest date on any of Caracol's monuments is A.D. 859 on Stela 10 in the A. Plaza. Based on radiocarbon dates from epicentral palace floors (A. Chase and D. Chase 2004a), occupation of Caracol's epicentral palaces continued at least 40 years beyond this date, indicative of a disconnect between monument erection and the latest palace occupation.

Excavations at Caracol also have revealed vibrancy to Terminal Classic construction efforts. Not only was Caana remodeled and elevated after A.D. 800, but the rebuilding of Structure B20 was most likely undertaken after the cessation of monument erection. Similarly, two Late Classic tombs at the base of Structure B19 were ritually desecrated in the Terminal Classic Period, possibly the end result of internal political squabbles (D. Chase and A. Chase 2003). Other late Terminal Classic modifications are in evidence in the Barrio palace buildings, dated by late material deposited as fill. Interestingly, a number of unfinished constructions or incomplete re-

modeling efforts have also been recovered (Figure 6). This can be inferred from various archaeological data. In Barrio, the Central Acropolis, and the South Acropolis, stone robbing, as well as potentially contemporary rebuilding, of latest structures was in evidence. Excavation immediately south of the Caracol epicenter revealed a huge fill pile containing Terminal Classic artifacts and garbage; it is suspected that this mound of earth was destined to become the supporting platform for a late acropolis. Unused piles of cut stones, undoubtedly destined for use on remodeled constructions were recovered from in front of Structure A7 and from within the inner courtyard of the Northwest Acropolis. All of these data suggest that the end of Caracol occurred rather unexpectedly.



**Figure 6.** Map of epicentral Caracol showing locations of unfinished constructions or of incomplete re-modeling efforts at the site at the time of abandonment

Clues to the end of Caracol's epicentral occupation also may be found in several deposits on Caracol's latest plazas and building floors that have yielded unburied bodies and human bone. In particular, the complete body of a 6-year-old child was found in an inner doorway of a palace on the Caana summit (D. Chase and

A. Chase 1998, 2000) and two bodies were found at the western base of Structure B28, partly beneath a stela fragment and in association with an additional 17 human mandibles. Many excavations in the Caracol epicenter have yielded isolated human bone. While a common explanation would be to ascribe the occurrence of this human material to cannibalism by the site's latest inhabitants (e.g. D. Chase and A. Chase 1982), not all the material was partial or disarticulated. Other associated artifactual remains include implements of war (D. Chase and A. Chase 2002). It is, therefore, also possible that there was a slaughter of some of the last epicentral inhabitants of the site, which would explain the abandonment material, the sheet refuse, and the scattered human remains indicative of the differential survival of human bone in a tropical environment.

## Conclusion

Gaining an understanding of the Maya Terminal Classic has proven to be a long and winding road characterized by numerous potholes and detours (D. Chase and A. Chase 2004). Originally defined in terms of dates on stone monuments and type-fossil ceramic markers, the archaeological data now emphasize the great diversity in the archaeological record that exists for the Terminal Classic Period. Some sites, like Dos Pilas (Demarest 2004), collapsed before the advent of the Terminal Classic and the cessation of monument erection. Other sites, like Caracol, successfully lasted at least two generations past the latest monuments. The final remains at Caracol are indicative of a prospering elite with access to fresh fish from the sea (Teeter and Chase 2004) and exotic materials from elsewhere in Mesoamerica.

That Caracol had widespread exterior contacts during the Terminal

Classic is quite clear in the archaeological record. Fine Orange ceramics (e.g. Smith 1958), all traded into Caracol, occur throughout the site epicenter, as do copies of model-carved ceramics suggesting a fusion of disparate styles on the elite level. The two smaller censers associated with Caracol Structure A31 (one called a “frying pan” incensario and the other a “Mixtec” incensario) are both parts of a widespread Mesoamerican ritual pattern that Ringle and his colleagues (1998) have tied to a Quetzalcoatl cult. These censer types are known from Chichen Itza (Brainerd 1958), Tayasal (A. Chase 1983:1097), Zacualpa (Wauchope 1948), Zaculeu (Woodbury and Trik 1953), Chinkultic (Ball 1980), Oaxaca (Caso et al. 1967), Teotihuacan (Linne 1934:111), Cholula (Acosta 1975; Joyce 1914), Teotenango (Vargas 1975), and Tula (Diehl 1983; Cobean 1990:488). Although the dating for these materials is nowhere precisely established, for the most part these kinds of censers appear to be dated to approximately A.D. 900, which also matches the inferred Caracol dating. Importantly, the Caracol Mixtec incensario is composed of Fine Orange paste, a feature that serves to emphasize its inclusion as Terminal Classic pottery.

Two of the censers recovered in association with Structure A31 during 2006 (Figure 5) emphasize how much we have yet to learn. One large globular vessel has no known stylistic analogies; the second large urn is a tradeware from the Lamanai area, 125 kilometer north of Caracol. While tentatively dated to the Middle Postclassic at Lamanai (Graham 1987), the piece occurs in a Terminal Classic context at Caracol. Interestingly, an almost identical censer comes from Actun Yaxteel, where a Terminal Classic date was suggested based on related material (Awe, personal communication, 2006; Awe and Helke 2000). This dating confusion goes to the

heart of the Terminal Classic problem in dealing with rapid transitions in the archaeological record.

For Caracol, the Terminal Classic represented a behavioral shift from the Late Classic Period (D. Chase and A. Chase 2006). Whereas trade items were widely distributed throughout the population during the Late Classic (A. Chase and D. Chase 2004b; D. Chase and A. Chase 2004), this was not the case in the Terminal Classic when the site’s elite essentially hived themselves off from the general population and emphasized their status through the ostentatious use of different, and usually foreign, goods (A. Chase and D. Chase 2004a). Final abandonment materials at Caracol suggest a marked separation between the site’s elite and other population segments. Archaeological data also suggest that the final abandonment of Caracol may have been the result of aggression in which some of the epicentral inhabitants were killed and left unburied on plaza and building floors.

Whatever caused the ultimate end of Caracol at approximately A.D. 900 (based on radiocarbon dates), the latter half of the century leading up to this abandonment was a time of great external contact throughout Mesoamerica. Archaeological remains indicate that Caracol was clearly a player within this broader arena. The pan-Mesoamerican activities participated in by the site’s latest epicentral inhabitants sharply contrasts with the internal disintegration of long-standing social patterns that in the past had stressed a shared identity between the elite and the rest of Caracol’s population. In contrast to the Late Classic Period, the latest Caracol elite was not concerned with displaying even symbolic egalitarianism (D. Chase and A. Chase 2006). Elsewhere, we have suggested that the last elite at Caracol were incorporated into a broader political

hegemony (A. Chase and D. Chase 2004a, 2005).

So, then, what does this entire picture mean? To us, these data suggest that the Maya collapse was related to both local and wider Mesoamerican phenomena. The latest elite at Caracol was outward looking, participating in far-flung trade and actively using disparate styles and items in new ritual patterns. At the same time, the non-elite of this era maintained a more traditional and less exotic lifestyle, making them harder to identify archaeologically without substantial effort. As archaeologists, we have problems dealing with transitional periods like the Terminal Classic. Only now, after 22 field seasons, are we beginning to understand the complexities involved in dating and modeling the Classic Maya collapse at Caracol through the long-term and time-consuming excavation and analysis of carefully defined archaeological contexts.

## Reference Cited

- Adams, Richard E.W.  
1971 *The Ceramics of Altar de Sacrificios*, Papers of the Peabody Museum of Archaeology and Ethnology Vol 63(1), Harvard University, Cambridge.
- Acosta, Jorge R.  
1975 La Ceramica de Cholula. in R. Pina Chan, Ed., *Los Pueblos y Senorios Teocraticos*, Vol. 1, pp. 123-134. Instituto Nacional de Antropología e Historia, Mexico City, D.F.
- Awe, Jaime J.  
1985 *Archaeological Investigations at Caledonia, Cayo District, Belize*. M.A. Thesis. Trent University, Peterborough.
- Awe, Jaime J. and Christophe G.B. Helmke  
2000 Fashionably Late: A Postclassic Censer from the Roaring Creek Valley, Belize. in C.S. Griffith, R. Ishihara, and J.J. Awe, Eds., *The Western Belize Regional Cave Project: A Report of the 1999 Field Season*, pp. 187-198. Department of Anthropology Occasional Paper 3. University of New Hampshire, Durham.
- Ball, Joseph W.  
1980 *The Archaeological Ceramics of Chinkultic, Chiapas, Mexico*. Paper 43. New World Archaeological Foundation, Brigham Young University, Provo.
- Berggren, Asa and Ian Hodder  
2003 Social Practice, Method, and Some Problems of Field Archaeology. *American Antiquity* 68(3):421-434.
- Brainerd, George W.  
1958 *The Archaeological Ceramics of the Yucatan*. Anthropological Records 19. University of California, Berkeley.
- Caso, Alfonso, Ignacio Bernal, and Jorge Acosta  
1967 *La Ceramica de Monte Alban*. Memorias del INAH 13, Instituto Nacional de Antropología e Historia, Mexico City, D.F.
- Chase, Arlen F.  
1983 *A Contextual Consideration of the Tayasal-Paxcaman Zone, El Peten Guatemala*. Ph.D. Dissertation, Department of Anthropology, University of Pennsylvania. University Microfilms International No. 8406652.
- Chase, Arlen F. and Diane Z. Chase  
1985 Postclassic Temporal and Spatial Frames for the Lowland Maya: A Background. in A. Chase and P. Rice, Eds., *The Lowland Maya Postclassic*, pp. 9 - 22. University of Texas Press, Austin.
- 2004a Terminal Classic Status-Linked Ceramics and the Maya "Collapse:" *De Facto* Refuse at Caracol, Belize. in A. Demarest, P. Rice, D. Rice, Eds., *The Terminal Classic in the Maya Lowlands: Collapse, Transition, and Transformation*, pp. 342-366. University of Colorado Press, Boulder.
- 2004b Exploring Ancient Economic Relationships at Caracol, Belize. *Research Reports in Belizean Archaeology* 1:115-127.
- 2005 Contextualizing the Collapse: Hegemony and Terminal Classic Ceramics from Caracol, Belize. in S. Lopež Varela

- and A. Foias, Eds., *Geographies of Power: Understanding the Nature of Terminal Classic Pottery in the Maya Lowlands*, pp. 73-91. BAR Monograph S1447. Oxford, England.
- Chase, Diane Z.
- 1982a *Spatial and Temporal Variability in Postclassic Northern Belize*. Ph.D. Dissertation, Department of Anthropology, University of Pennsylvania. University Microfilms International No. 8307296.
- 1982b The Ikilik Ceramic Complex at Nohmul, Northern Belize. *Ceramica de Cultura Maya* 12: 71-81.
- 1985a Ganned But Not Forgotten: Late Postclassic Archaeology and Ritual at Santa Rita Corozal, Belize. in A. Chase and P. Rice, Eds., *The Lowland Maya Postclassic*, pp.104-125. University of Texas Press.
- 1985b Between Earth and Sky: Idols, Images, and Postclassic Cosmology. in M.G. Robertson and V.M. Fields, *Fifth Palenque Round Table, 1983, Vol VII*, pp. 223-233. Pre-Columbian Art Research Institute, San Francisco.
- 1988 Caches and Censer wares: Meaning from Maya Pottery. in L. Lackey and C. Kolb, Eds., *A Pot for All Reasons: Ceramic Ecology Revisited*, pp. 81-104. Laboratory of Anthropology, Temple University, Philadelphia.
- Chase, Diane Z. and Arlen F. Chase
- 1982 Yucatec Influence in Terminal Classic Northern Belize. *American Antiquity* 47: 596-614.
- 1988 *A Postclassic Perspective: Excavations at the Maya Site of Santa Rita Corozal, Belize*. Monograph 4. Pre-Columbian Art Research Institute, San Francisco.
- 1998 The Architectural Context of Caches, Burials, and Other Ritual Activities for the Classic Period Maya (as Reflected at Caracol, Belize). in Stephen D. Houston, Ed., *Function and Meaning in Classic Maya Architecture*, pp. 299-332. Dumbarton Oaks, Washington, D.C.
- 2000 Inferences about Abandonment: Maya Household Archaeology and Caracol, Belize. *Mayab* 13:67-77.
- 2002 Classic Maya Warfare and Settlement Archaeology at Caracol, Belize. *Estudios de Cultura Maya* 22:33-51.
- 2003 "Secular, Sagrado, y Revisitado: La Profanacion, alteracion, y reconsagracion de los Antiguos Entierros Mayas," in A. Ciudad Ruiz, M.H. Ruz Sosa, and M.J.Iglesias Ponce de Leon, Eds., *Antropología de la Eternidad: La Muerte en la Cultura Maya*, pp. 255-277, Publicación 7, Sociedad de los Estudios Mayas, Madrid.
- 2004 Archaeological Perspectives on Classic Maya Social Organization from Caracol, Belize. *Ancient Mesoamerica* 15:111-119.
- 2006 Framing the Maya Collapse: Continuity, Discontinuity, Method, and Practice in the Classic to Postclassic Southern Maya Lowlands. in G. Schwartz and J. Nichols, Eds., *After Collapse: The Regeneration of Complex Societies*, pp. 168-187. University of Arizona Press, Tucson.
- Cobean, Robert H.
- 1990 *La Ceramica de Tula, Hidalgo*. Instituto Nacional de Antropología e Historia, Mexico, D.F.
- Cobos, Rafael
- 1999 Fuentes Historicas y Arqueologia: Convergencias y Divergencias en la Reconstruccion del Periodo Clasico Terminal de Chichen Itza. *Mayab* 12:58-70.
- 2004 Chichen Itza: Settlement and Hegemony during the Terminal Classic Period. in A. Demarest, P. Rice, D. Rice, Eds., *The Terminal Classic in the Maya Lowlands: Collapse, Transition, and Transformation*, pp. 517-544. University of Colorado Press, Boulder.
- Coe, Michael D.
- 2005 *The Maya*. Seventh Edition. Thames & Hudson Inc., New York.
- Culbert, T. Patrick
- 1973 The Maya Downfall at Tikal. in T.P. Culbert, Ed., *The Classic Maya Collapse*,

- pp. 63-92. University of New Mexico Press, Albuquerque.
- Demarest, Arthur  
2004 After the Maelstrom: Collapse of the Classic Maya Kingdoms and the Terminal Classic in Western Peten. in A. Demarest, P. Rice, D. Rice, Eds., *The Terminal Classic in the Maya Lowlands: Collapse, Transition, and Transformation*, pp. 102-124. University of Colorado Press, Boulder.
- Diehl, Robert A.  
1983 *Tula*. Thames & Hudson Inc., New York.
- Graham, Elizabeth  
1987 Terminal Classic to Early Historic Period Vessel Forms from Belize. in P.M. Rice and R.J. Sharer, Eds., *Maya Ceramics*, Vol. 1, pp. 73-98. International Series 345. BAR, Oxford.
- Inomata, Takeshi  
1997 The Last Day of a Fortified Maya Center: Archaeological Investigations at Aguateca, Guatemala. *Ancient Mesoamerica* 8:337-351.
- Inomata, Takeshi and Triadan, Daniela  
2000 Craft Production by Classic Maya Elites in Domestic Settings: Data from Rapidly Abandoned Structures at Aguateca, Guatemala. *Mayab* 13:57-66.
- Joyce, Thomas A.  
1914 *Mexican Archaeology*. London. Linne, Sejourne  
  
1934 *Archaeological Researches at Teotihuacan, Mexico*. Ethnographic Publication 1. Museum of Sweden, Stockholm.
- Pendergast, David  
1986 Stability Through Change: Lamanai, Belize, from the Ninth to the Seventeenth Century. in J.A. Sabloff, and E.W. Andrews V, Eds., *Late Lowland Maya Civilization: Classic to Postclassic*, pp. 223-249, University of New Mexico Press, Albuquerque.  
  
1990 Up From the Dust: The Central lowlands Postclassic as Seen from Lananai and Marco Gonzales. in R. Clancy and P.D. Harrison, *Vision and Revision in Maya Studies*, pp. 169-177. University of New Mexico Press, Albuquerque.
- Ringle, William M., Tomas Gallareta Negrón, and George J. Bey III  
1998 The Return of Quetzalcoatl: Evidence for the Spread of a World Religion during the Epiclassic Period. *Ancient Mesoamerica* 9(2):183-232.
- Schiffer, Michael B.  
1987 *Formation Processes of the Archaeological Record*. University of New Mexico, Albuquerque.
- Sheets, Payson D.  
1998 Place and Time in Activity Area Analysis: A Study of Elevated Contexts Used for Artifact Curation at the Ceren Site, El Salvador. *Revista Espanola de Antropologia Americana* 28:63-98.
- Sheets, Payson D., Harriet F. Beaubien, Marilyn Beaudry, Andrea Gerstle, Brian McKee, C. Dan Miller, Hartmut Spetzler, and David B. Tucker  
1990 Household Archaeology at Ceren, El Salvador. *Ancient Mesoamerica* 1:81-90.
- Smith, Robert E.  
1955 *Ceramic Sequence at Uaxactun, Guatemala*, Publication 20, Middle American Research Institute, Tulane University, New Orleans.  
  
1958 The Place of Fine Orange Pottery in Mesoamerican Archaeology. *American Antiquity* 24:151-160.  
  
1971 *The Pottery of Mayapan*. Papers of the Peabody Museum of Archaeology and Ethnology 66. Harvard University, Cambridge.
- Teeter, Wendy and Arlen F. Chase  
2004 Adding Flesh to Bones: Using Zooarchaeology Research to Answer Big-Picture Questions. *Archaeofauna* 13:155-172.
- Tozzer, Alfred M.  
1957 *Chichen Itza and Its Cenote of Sacrifice: A Comparative Study of Contemporaneous Maya and Toltec*. Memoirs of the Peabody Museum of

Archaeology and Ethnology 11-12. Harvard University, Cambridge.

Vargas P., Ernesto

1975 La Ceramica. in R. Pina Chan, Ed., *Teotenango: El Antiguo Lugar de la Muralla*, pp. 189-265. Direccion de Turismo, Gobierno del Estado de México, México. D.F.

Wauchope, Robert

1948 *Excavations at Zacualpa, Guatemala*. Middle American Research Institute Publication 14. Tulane University, New Orleans.

Webb, Ronald W. and Kenneth G. Hirth

2003 Xochicalco, Mexico: The Abandonment of Households at an Epiclassic Urban Center. in T. Inomata and R.W. Webb, Eds., *The Archaeology of Settlement Abandonment in Middle America*, pp. 29-42. University of Utah Press, Salt Lake City.

Woodbury, Richard B. and Aubrey S. Trik

1953 *The Ruins of Zaculeu, Guatemala* (2 volumes). United Fruit Company, Richmond.

---

### **3 FIGHTING THE INEVITABLE: THE TERMINAL CLASSIC MAYA OF THE UPPER ROARING CREEK VALLEY**

*Jaime J. Awe and Christophe G.B. Helmke*

---

*Archaeological investigations in the upper Roaring Creek Valley have revealed a complex Maya landscape of settlements and ritual cave sites. This paper reports on data recorded at these settlements, which, also provides excellent evidence for local continuities and discontinuities in Classic Maya culture and the uneven changes and transformations of the Terminal Classic period. This is particularly true of sites such as Cahal Uitz Na and Chaac Mol Ha, and Pooks Hill. Several caves and rockshelters have also been investigated in the valley and they reflect a peak in local ritual cave utilization between 800 and 900 AD. The Terminal Classic period brought with it great challenges to the traditional Classic period style of life for the Maya and many communities were unable to cope, which is evident by the large-scale decline and abandonment of many formerly successful city-states. Depopulation in this area was likely prompted by this broader set of social and political stresses and partly brought on by environmental degradation.*

#### **Introduction**

The Terminal Classic period, which unfolded during the ninth century AD, was a time of challenges and transformations in Maya civilization. It witnessed the decline and eventual abandonment of many great cities like La Milpa and Pusilha. It brought with it political changes that led to the dissolution of the power previously enjoyed by paramount hereditary rulers, and saw a rise in community-based political systems. The Terminal Classic also brought changes in external relationships, and to the economic engine that fueled Classic period Maya civilization. More importantly, these changes challenged the Maya's ability to successfully sustain their previous way of life.

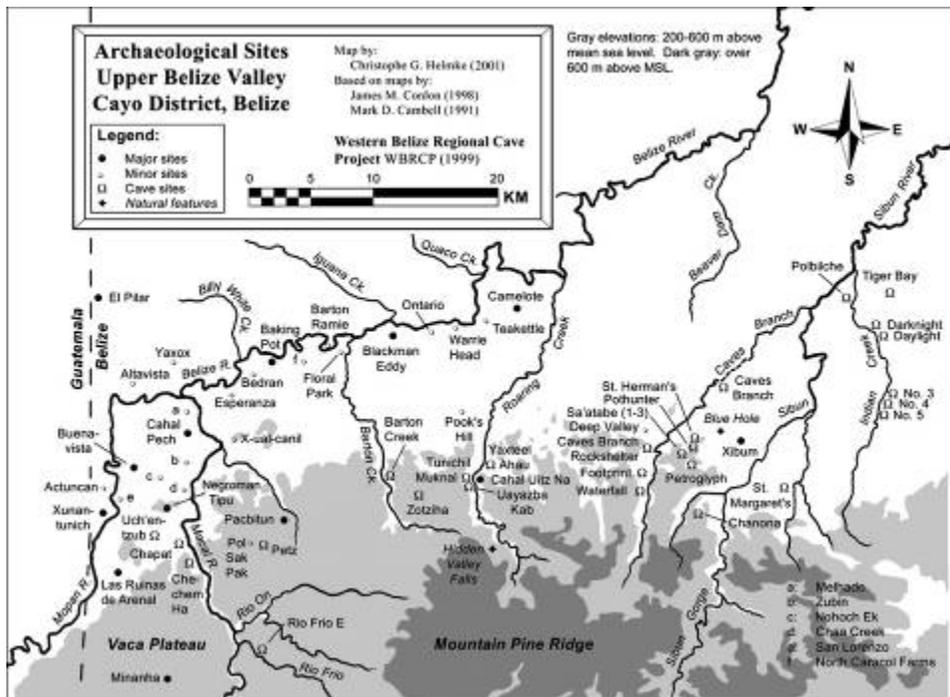
The Belize River Valley region of the Maya Lowlands provides a fertile environment for the study of the uneven changes and transformations of the Terminal Classic period. For example, while sites such as Cahal Pech (Awe 1992, 2006) and Buenavista (Ball and Taschek 2004; Taschek and Ball 2004) were being abandoned, others such as Xunantunich (AD 820 - 849) (Lecount et al. 2002; Leventhal

and Ashmore 2004; Yaeger 2000; Helmke et al. 2006) and Caracol (AD 793 - 859) (Chase, Grube and Chase 1991; Martin and Grube 2000; Chase and Chase 2004) witnessed a veritable 'revival' in regal activity during the Terminal Classic as marked by the dedication of carved monuments. Elsewhere, ceramic and settlement data indicate that Baking Pot (Audet and Awe 2004; Audet 2007) and Pacbitun (Healy et al. 2004; Healy et al. 2007) continued to thrive, even though regal activities in the epicenters appear diminished. Data recorded at several other settlements along the Belize River system also provide excellent evidence for local continuities and discontinuities in Classic period Maya culture. This is particularly true of sites along the Roaring Creek, a major tributary of the Belize River (Fig. 1).

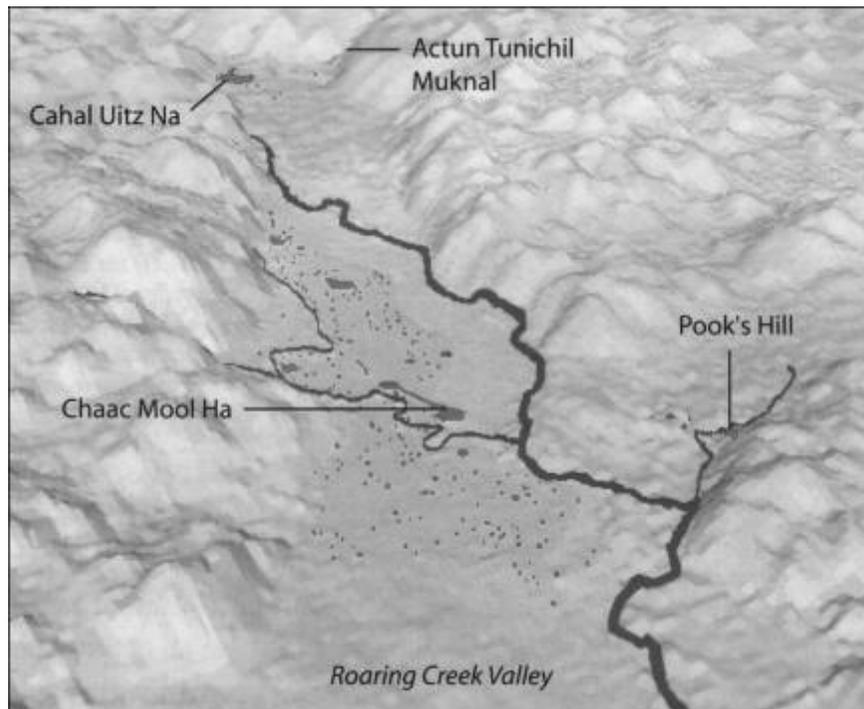
#### **Setting of the Upper Roaring Creek Valley and Previous Investigations**

From its base at the Hidden Valley (or Thousand Foot) falls, the Roaring Creek (Fig. 2) flows northward through a narrow alluvial valley delineated to the east and west by steep karstic precipices carved from





**Figure 1.** Map of the Belize Valley showing the location of major sites and the Roaring Creek valley.



**Figure 2.** Perspective view of the Upper Roaring Creek valley. The settlement survey area completed as of 2003 is shown in grey and the floodplain devoid of housemounds in yellow. All ancient Maya architectural remains are depicted to scale in red. Topography is based on a Digital Elevation Model derived from Synthetic Aperture Radar data (obtained under academic license from Global Terrain™). Map, data processing and perspective view by Andrew Bevan.

otherwise low-lying and rolling limestone hills. The valley eventually widens near the location of a minor centre known as Chaac Mool Ha (Fig. 2), at a point where the stream begins to meander toward its confluence with the Belize River. For research purposes we chose to divide the Roaring Creek valley into two areas. The Upper Valley extends southward from Chaac Mool Ha to the source of the creek at the base of the Mountain Pine Ridge. The Lower Valley extends northward from Chaac Mool Ha to the confluence of the Roaring Creek and the Belize River.

The history of archaeological research in the upper Roaring Creek spans a little more than a decade (1993 to present). Most of this research has been conducted under the auspices of the Western Belize Regional Cave Project, a branch of the Belize Valley Archaeological Reconnaissance Project under the direction of the senior author. The primary focus of the BVAR investigations in the upper Roaring Creek addresses the role of caves in ancient Maya society and the inter-relationship between surface and subterranean sites in antiquity (see Awe 1998, Helmke et al. 2004). Summaries of previous research in the Roaring Creek are provided elsewhere (Awe et al. 1998: 225; Helmke 2000a: 293).

### Prehistoric Settlements in the Upper Roaring Creek

It has been over a decade since BVAR archaeologists began their study of the upper Roaring Creek valley. As part of this regional study we have recorded more than a dozen cave sites, a major center, a minor center, and several square kilometers of settlement and *plazuela* groups. The largest surface site known for the upper valley is the major center Cahal Uitz Na that covers approximately 3 hectares (Fig. 3). valley is the major center Cahal Uitz Na that

covers approximately 3 hectares (Fig. 3). This site is comparable in size to Cahal Pech (2.8 ha), Minanha (3.6 ha), and Altun Ha (4.1 ha). The monumental epicenter of Cahal Uitz Na comprises several pyramidal temples, palatial and administrative range structures, a ball court, and a series of 10 limestone and slate monuments (see Awe and Helmke 1998; Conlon and Ehret 1999). A 250-meter long causeway connects the central precinct to the entrance of a cave we designated as Actun Nakbe. Seven of the monuments recorded at Cahal Uitz Na are made from slate and the other three are from

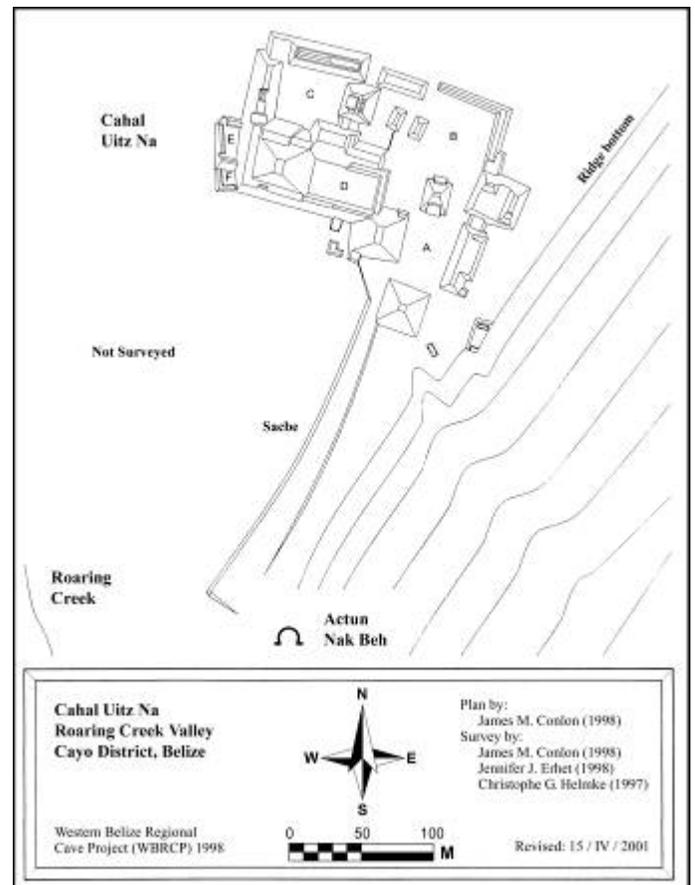


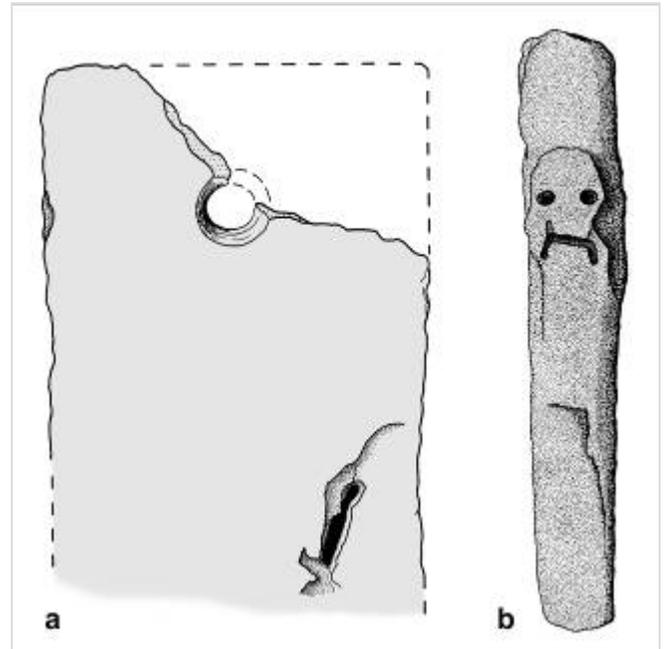
Figure 3. Map of Cahal Uitz Na

limestone. Two of the limestone monuments flank the axial outset stair of one of the principal pyramidal temple structures, suggesting that these served as panels. One slate monument and one of the

panels are decorated but not inscribed. The limestone panel (Fig. 4a) has what appears to be a biconically drilled hole at its center, and the slate monument (Fig. 4b) has a crude petroglyphic face carved on it. The face on the latter monument is similar to several simple faces that we discovered carved on flowstone at the entrance to Actun Uayazba Kab, a cave approximately 500 meters due west of Cahal Uitz Na. This congruence in rock art between the two sites helps to anchor the petrographic corpus of Actun Uayazba Kab to some point in the Late Classic (see Helmke and Awe 1998; Helmke et al. 2003). In all probability, Cahal Uitz Na served as the local regal centre for the polity centered on the upper Roaring Creek valley, but despite this role, it may have been subservient to one of the larger centers to the west in the greater Belize River valley region (see Helmke and Awe in press).

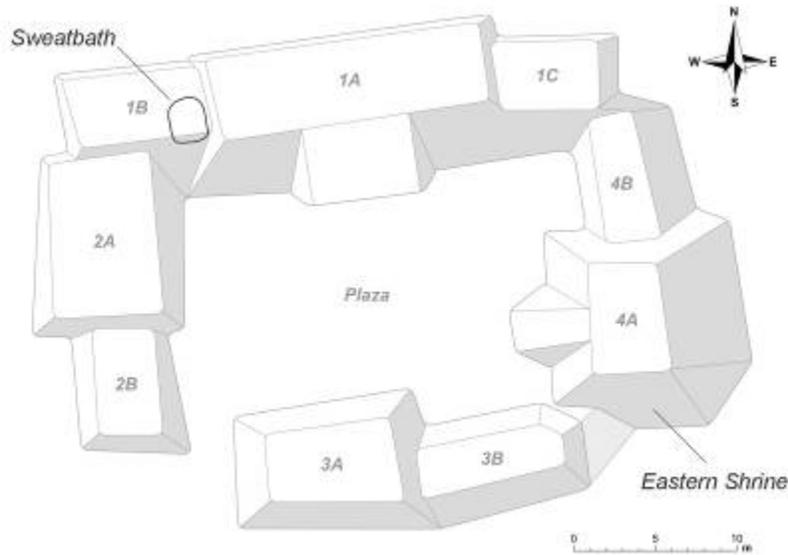
Survey to the north and east of Cahal Uitz Na recorded the minor centre of Chaac Mool Ha and several other formal *plazuela* groups. The fairly regular spacing of the *plazuelas* at radii of c. 500 m suggests that they may have exerted some level of influence over landholdings and the smaller settlement units in the valley (see Helmke et al. 2004). Chaac Mool Ha is located within the alluvial valley bottom at a distance of c. 3.6 km to the north of Cahal Uitz Na, a distance that is consistent with other smaller satellite sites within the Belize Valley (Driver & Garber 2004). The site is comprised of two groups linked by a 240 m long causeway and access to the north group appears to have been gained via a ballcourt that served as the formal entrance in keeping with patterns observed at several other sites, but most notably at Baking Pot (see Aimers 1997; Ferguson 1999b). The overall size of

the site as well as comparable architectural features and configurations make Chaac



**Figure 4.** Monuments of Cahal Uitz Na. **a)** Limestone monument, with biconical perforation at the middle. Set as the eastern panel to the axial outset stair of Structure 5. The monument measures 1.4 m at its widest. **b)** Slate monument with crudely carved petroglyphic face. The monument measures 2.09 m at its longest. Drawings by Christophe Helmke.

Mool Ha intimately comparable to the site of X-uul-canil situated within the eastern periphery of Cahal Pech (see Iannone 2003). Among the larger *plazuela* groups is the site known as Pook's Hill, located 1 km to the northwest of Chaac Mool Ha. Pook's Hill (Helmke 2006a, b), in contrast to Chaac Mool Ha, is located on the flank of a hill that overlooks the valley and creek to the east. This shrine-focused settlement cluster also has relatively large architecture that includes a rounded eastern funerary shrine, three range structures and a sweatbath (Fig. 5) (Helmke 2006a, b; Helmke and Awe 2005).



**Figure 5.** Plan of the Pook's Hill plazuela group showing the locations of the Eastern shrine as well as the sweatbath structure. Plan and survey by Christophe Helmke.

Based on our detailed excavations of the rounded eastern shrine and the sweatbath we were able to establish that they are among the latest buildings erected at Pook's Hill, and likely constructed in the second half of the tenth century. Both structures are also reminiscent of Terminal Classic architecture in the western Peten and northern Yucatan Peninsula; a date supported by the cultural remains recovered by excavations at both loci by Helmke (2006a, b, Helmke and Awe 2005).

Results of our settlement survey recorded a density of just over a hundred mounds per square kilometer in the upper Roaring Creek valley (Helmke et al. 2004). Pottery collected from the surface of most house-mounds, and those from controlled excavations at Cahal Uitz Na, Pook's Hill and mounds near the entrance to Actun Tunichil Mucnal (Song et al. 2000) predominantly dated to the latter half of the Late Classic period. Using accepted models of Maya demography, we estimate that between 4500 and 7500 people may have been living in the upper Roaring Creek around AD 750-850 (see Helmke et al. 2004).

### **Subterranean Sites in the Upper Roaring Creek Valley**

As we indicated above, more than a dozen subterranean sites have been discovered in the upper Roaring Creek. These sites are represented by both caves and rockshelters (Awe et al. 1998). During the last decade we conducted intensive research in four caves (Actun Tunichil Mucnal, Actun Yaxteel Ahau, Laberinto de las Tarantulas and Actun Nak Beh), and two rockshelters (Actun Uayazba Kab, and Uayak Na).

Investigations in Actun Tunichil Mucnal (Awe et al. 2005; Moyes 2005; Gibbs 2000) identified four areas with evidence for prehistoric Maya utilization. It was also found that the cave was used for ritual purposes from Early Classic to Terminal Classic times (c. AD 200 – 950). Evidence for Early Classic usage was limited to the two principal entrance areas (the Eastern Entrance and the Sinkhole Entrance). This contrasts significantly with the interior of the cave where four loci, designated as the Upper Entrance Chamber (Griffith 1998), the Sinkhole Tunnels (Helmke 1999), the Stelae Chamber (Awe et

al. 2005) and the Main Chamber (Moyes and Awe 1998; Moyes 2005), contained extensive evidence for Late to Terminal Classic use.

Adjoining the Eastern Entrance is a series of small chambers that were collectively named the Upper Entrance Chamber. The material culture and deposits from this area had been affected by recent looting, but our investigations revealed the presence of a small subsidiary chamber of difficult access that had escaped plunder. This small chamber (known as the Hideaway) was found to contain 13 Late to Terminal Classic ceramic vessels, including 4 bowls, the fragmented remains of 5 dishes, 3 ollas (ritually killed or fragmented) and the ring base of another vessel (see Griffith 1998). Excavations revealed a ceramic sequence spanning back to at least the Early Classic as well as an abundance of Terminal Classic ceramic sherds within the uppermost matrices suggesting that the small masonry platform built within the chamber is coeval to the late usage of this area.

The second area, known as the Sinkhole Tunnels, is a maze of small passages that pass through breakdown and an extinct phreatic system. Despite the diminutive size of the passages all exhibited evidence of human usage as attested by ceramic and human remains. Much like the Upper Entrance Chamber, the ceramic assemblage of the Sinkhole Tunnels spans the entirety of the Classic period, though Late and Terminal Classic types comprise c. 60 % of the total assemblage (see Helmke 1999).

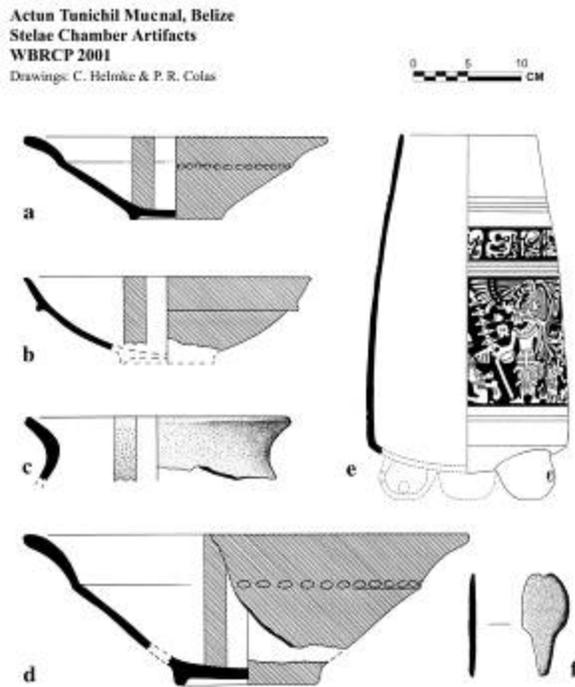
Set further within the cave, ca. 325m away from the Upper Entrance Chamber and ca. 195m from the Sinkhole Entrance is the third area, designated as the Stelae Chamber. The area acquired its name on account of the presence of two slate monuments that are supported in upright position by several broken speleothems at the center of a ledge

overlooking the chamber. At the base of, and dispersed around, the monuments we recovered the fragmentary remains of at least two Roaring Creek Red dishes, two ollas, one Molded-carved vase (Fig. 6), two obsidian blades, plus a small slate slab decorated with a crude representation of the central Mexican deity Tlaloc.

It has been argued elsewhere (Awe et al. 2005) that the slate monuments were carved in the form of a stingray spine and an obsidian blood-letter, and that the placement of stela-like monuments in caves appears to be a Terminal Classic tradition in western Belize. Representations of Tlaloc, despite their limited Early Classic representations at central Peten sites, also seem to share a similar, late, temporal distribution in Belize as supported by the recent discovery of Terminal Classic Tlaloc masks adorning Structure B5 at Caracol (see Awe 2003; Ishihara et al. 2006). Finally the presence of a Molded-carved vase in the Stelae Chamber suggests that most if not all of the Late Classic ceramic vessels actually date to the late facet of the Spanish Lookout complex and as such date to the Terminal Classic, the same date we attribute to the erection of the slate monuments.

The furthest area within the cave to exhibit cultural activity is the Main Chamber, the entrance to which is located c. 450 m from the Eastern Entrance and c. 120 m from the Stelae Chamber. Contained within the Main Chamber are the skeletal remains of 14 individuals, more than 200 ceramic vessels, three or more metates, several groundstone adzes, faunal remains, a stone rasp and a few ceramic ocarinas. Children represent half of the skeletons; the other seven include both adult males and females. All evidence indicates that these individuals were sacrificed in association with agricultural fertility rituals (Awe et al. 2005). The ceramics found within the Main Chamber fall typologically within the two

facets of the Spanish Lookout complex as defined by Gifford (1976) and complicates conclusive dating of the materials (see also Chase & Chase 2004). To help clarify temporal assignment two radiocarbon dates (AA 57315, and AA57316) were submitted to and processed by the Arizona AMS Lab in Tucson, which produced dates of  $1202 \pm 32$  or  $710 - 950$  AD, and  $1191 \pm 31$  or  $720 - 960$  AD in the 2 Sigma range. Both samples derived from charcoal collected in the Main Chamber and help to confirm the Terminal Classic usage of this locus in Actun Tunichil Mucnal.



**Figure 6.** Artifacts of the Stelae Chamber, Actun Tunichil Mucnal. **a)** & **d)** Roaring Creek Red with thumb impressions. **b)** Possible Mountain Pine Red vessel. **c)** Cayo Unslipped olla neck. **e)** Ahk'utu' Molded-carved vase. **f)** Slate artifact.

Located approximately 500 meters south of Actun Tunichil Mucnal, Actun Uayazba Kab is actually a large rockshelter with a narrow tunnel that winds its way into

a series of small and dark recessed chambers. Investigations at this site recorded a complex corpus of prehistoric Maya cave art that includes pictographs, petroglyphs, partly sculpted faces as well as modified speleothems (Helmke and Awe 1998; Helmke et al. 2003). While much of these art forms have a long antiquity in Mesoamerica, their temporal distribution in the Maya area clusters significantly during the Terminal Classic period and finds support with the cross-dating of the slate monument from Cahal Uitz Na mentioned above.

In 1997 and 1998 we initiated several excavation units within the two entrance chambers of the site (Griffith 1998; Ferguson and Gibbs 1999). These investigations uncovered numerous burials (Gibbs 2000) in simple cists. This pattern of interment is in marked contrast to the pattern noted in Actun Tunichil Mucnal and Yaxteel Ahau, and likely is indicative of important differences in the treatment of the dead within rockshelters and cave sites. The ceramic artifacts recovered in association with the burials, in excavation units and from ledges high above the cave entrance spanned from the end of the Early Classic to the Terminal Classic period and not only coincides with the stylistic temporal placement of cave art in Actun Uayazba Kab, but strengthens this dating.

Investigations in Actun Yaxteel Ahau, Laberinto de las Tarantulas and Actun Nak Beh reflect relatively similar patterns of cave use to Actun Tunichil Mucnal. The major difference between them is that while Yaxteel Ahau and Tunichil Mucnal both contain numerous skeletons that were likely the victims of human sacrifice, similar remains and evidence are practically absent at the other two cave sites. The fact that the two are large river caves may further help to tie these two cave sites together in terms of emic classifications of cave sites and the

types of activities that were deemed suitable for different sites. One specific similarity that *Laberinto de las Tarantulas* shares with *Actun Tunichil Mucnal* is that the former also contains a slate monument within the dark zone of the site (Awe et al. 2005). Beside this there is great uniformity in their cultural assemblages, they all reflect initial usage at the start of the Early Classic, and considerable intensification of ritual activity during the Terminal Classic period.

### **Prehistoric Ceramics from the Upper Roaring Creek Valley**

During the last decade we have had an opportunity to conduct analysis of the prehispanic ceramics from both the subterranean and surface sites that we investigated in the upper Roaring Creek valley. At *Cahal Uitz Na*, Ferguson's (1999a) excavations in the ballcourt as well as Ehret and Conlon's (1999) testing of the plaza platforms noted that initial settlement of this site likely began around the end of the Late Preclassic period. The same is true for the earliest utilization of the *Actun Uayazba Kab* rockshelter. While a few sherds of the Late Preclassic have also been found at *Pook's Hill*, it is more likely that this site has its foundation in the ensuing Early Classic (see Helmke 2000a, 2006b). Having said this, however, it is important to note that only few diagnostic types have actually been identified for the Late Preclassic period and in no instance have they been isolated stratigraphically. Wherever we recovered Late Preclassic pottery, it was always mixed with Early Classic materials. Among the diagnostic Preclassic types identified were specimens from the *Sierra*, *Hill Bank*, *Stumped Creek*, and *Chan Pond* ceramic groups (see Gifford 1976 for ceramic group descriptions).

Unlike Late Preclassic types, Early Classic ceramics appear to have a much wider distribution in the valley. Indeed, just

about every major surface and subterranean site investigated has produced evidence for either permanent settlement or limited utilization during this time frame. The most identifiable Early Classic diagnostic types recorded in the upper Roaring Creek valley include basal-flanged dishes of the *Dos Arroyos*, *Minanha*, and *Balanza* ceramic groups, although the latter only occurs in relatively low frequency. Specimens of the brown *Pucte* group represent other gloss ware pottery. Unslipped pottery, predominantly in jar forms, is particularly present in vessels of the *Succotz* ceramic group.

The 8th century Late Classic period witnessed continued growth in the Roaring Creek valley. Settlements like *Cahal Uitz Na* increased in size, and cave sites reflect limited but consistent utilization for ritual purposes. During this time polychrome pottery of the *Saturday Creek* and *Saxche* groups, and monochrome dishes and bowls of the *Mountain Pine*, *Sotero*, and *Teakettle* Groups represent the ceramic materials of choice in burials, caches and offerings.

Despite the earlier Classic period developments in the valley, they pale in comparison with the dynamism and pervasiveness of the Terminal Classic. At the onset of the ninth century, the upper Roaring Creek Maya communities continued to expand. Considerable new architecture was added to sites such as *Pook's Hill*, *Cahal Uitz Na* and likely *Chaac Mool Ha*. It is about this time too that most of the monuments at *Cahal Uitz Na* were erected, and that the sweatbath was added to the main plaza at *Pook's Hill*, while the eastern shrine of the site was remodeled to a circular ground plan.

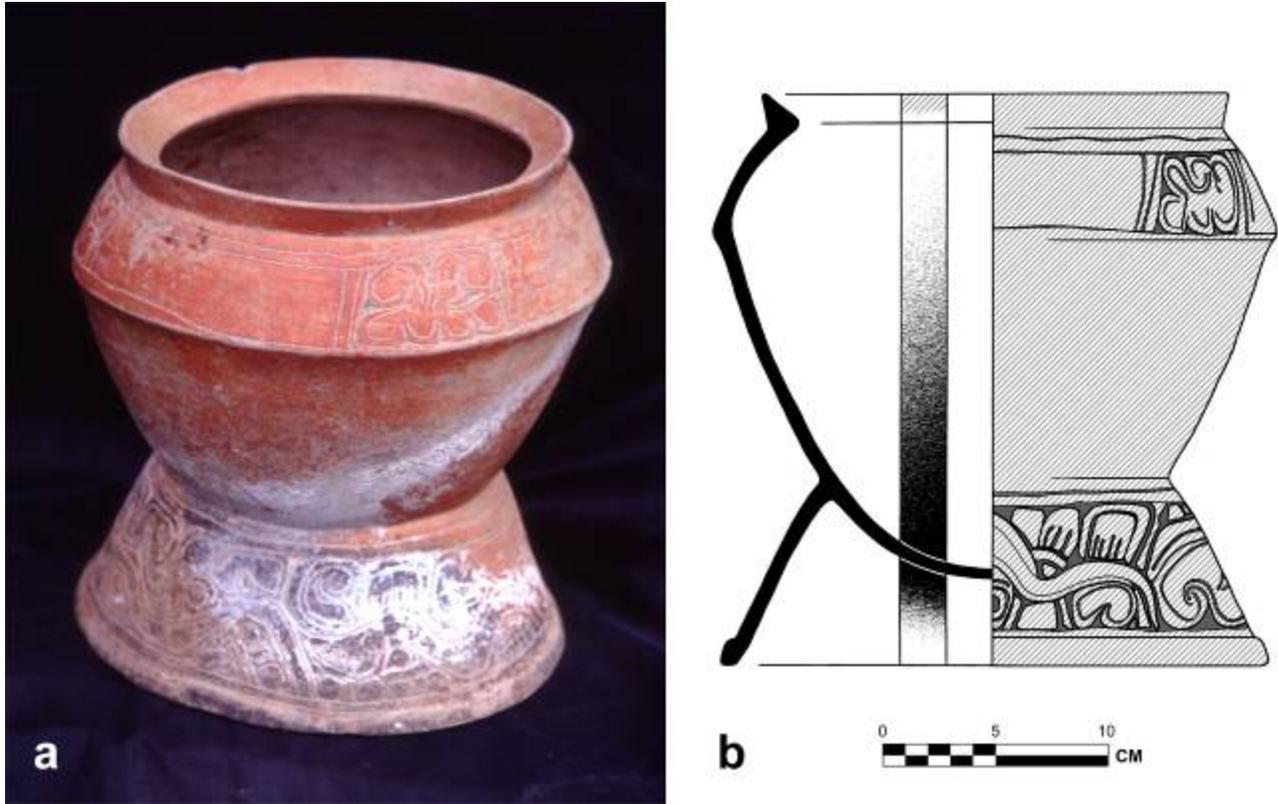
The Terminal Classic ceramic assemblage for the Roaring Creek valley is also considerably more complex and diverse than in preceding phases. They include a broad range of types that fit perfectly within

the local Belize Valley Spanish Lookout and New Town complexes, plus several other types of foreign origin or inspiration. Local Terminal Classic ceramics represented in the assemblage include unslipped jars of the Tu-Tu Camp and Cayo ceramic groups, and several red monochromes of the Garbutt Creek and Vaca Falls ceramic group. Some large basins of the Roaring Creek Red type occur with both ring and pedestal base and some are decorated in the tradition of Daylight Orange: Darknight Variety of the New Town complex. The consistent co-occurrence of Roaring Creek and Daylight Orange ceramics at all sites in the Roaring Creek indicates that these are wholly contemporaneous. This conclusion naturally runs counter to their original classification (Gifford 1976) in which Daylight Orange specimens were assigned to the New Town complex. A variety of Roaring Creek Red has also been identified in which the interiors of large basins are slipped brown. We have established these as the Kanan Variety. Ceramics from the Vaca Falls group dominate the Late to Terminal Classic ceramic assemblages from both surface and cave sites and include rare forms that anticipate those of the later Buk-style ceramics from Lamanai and nearby Chau Hiix. The specimens in question recovered from Pook's Hill exhibit pre-slip incised and punctuated designs above the shoulder of the vessels and in all cases these display prominent pedestal bases. Duck Run incised pyriform vases with pedestal bases have also been noted in burials and fragments of others have been found within caves. In addition, a heretofore unclassified type of ceramics is represented by calcite-tempered, large, sharply incurving bowls that are slipped variegated brown and/or black on the interior, while the exterior is left unslipped and embellished by four squared trefoils along the rim, produced by excising the background. These have tentatively

been grouped under a new type that we designate as Ik Excised.

Of indisputable foreign origin are fragments of at least one or more vessels of Tohil Plumbate that were discovered in Actun Tunichil Mucnal. Other likely imports are various vessels of the Cabrito Cream Polychrome type that were discovered in Tarantula Cave, in Structure ATM-M-1 at the entrance to Actun Tunichil Mucnal, and within the Upper Entrance Chamber of Actun Tunichil Mucnal proper (Helmke 2000b; Song et al. 2000), as well as a large pedestal vessel akin to Buk-style censers from Lamanai (Pendergast 1981; Graham 1987; Graham and Pendergast 1989). Discovered in Actun Yaxteel Ahau, the Buk-style vessel is particularly interesting in terms of its regional distribution and dating (see Awe and Helmke 2000) (Fig. 7). Both Pendergast and Graham (Pendergast 1981; Graham 1987; Graham and Pendergast 1989) have dated these censers to the Middle Postclassic period and have noted that their distribution is centered predominantly in northern Belize and the offshore islands. The Yaxteel Ahau specimen is the first reported from a cave site where most associated artifacts date to the Terminal Classic period rather than the Postclassic. This pattern also seems to fit other Buk-style censers that were recently discovered in association with Structure A31 at Caracol (Chase and Chase 2006; Arlen Chase personal communication 2006). The deposit in which these Caracol specimens were discovered has been assigned a Terminal Classic date suggesting that the introduction of Buk-style censers in fact reaches back much earlier to the Terminal Classic (see also Graham 1987).

Other vessels of either foreign origin and/or inspiration are a number of Molded-carved, red-slipped vases. Found at several caves (Actun Tunichil Mucnal and Actun



**Figure 7.** The Buk-style censer recovered from Actun Yaxteel Ahau. **a)** Photo of the vessel (photo by Megan Bassendale). **b)** Drawing of the vessel (drawing by Christophe Helmke).

Nak Beh) and surface sites (Pook’s Hill), these vessels are a hallmark of the Terminal Classic period (c. 830 – 950 AD) across the entire Maya lowlands, and although used mainly in feasting activities, they are also found in other ritual contexts including caves and burials. The vessels exhibit rich and detailed decorative panels depicting both the real and the supernatural worlds. While no Fine Orange molded-carved vases have been found in the Roaring Creek, the specimens discovered can be assigned to two major types. The first is the Sahcaba type (Smith and Gifford 1966), which may represent imports to the area. The second type is considerably more prevalent, to which we have attributed the designation of Ahk’utu’ Molded-carved, in keeping with the vessel type assigned glyphically to these vases by the ancient Maya (see Helmke 2001). It is notable that

the fragmentary molded-carved vases reported from Footprint and Chanona Caves (Graham et al. 1980) are of this same exact type, indicating that there is a regional pattern to the deposition of these vases in caves. The favored themes of Ahk’utu’ vases include the presentation to a ruler of a captive taken in raids and the conjuring of deified ancestors as part of ‘vision quest’ ceremonies (Helmke 2000c). Glyphic texts just below the rim of the vessels all make reference to the names and titles of a single ancient owner, part of whose name was *Olom* (see Helmke 2003; 2006a).

### Conclusion

Archaeological investigations in the upper Roaring Creek Valley have revealed a complex Maya landscape of settlements and ritual cave sites. Presently, the earliest securely dated material from the valley

comes from the end of the Late Formative period (c. AD 100 – 300). This is followed by gradual but steady growth throughout the Classic period with greatest population density occurring sometime in the ninth century AD. Investigations of subterranean sites in the valley reflect a similar peak in local ritual cave utilization between 800 and 900 AD. This increase in ritual activity was accompanied by the first attestation of human sacrifices for the area while the seizure of captives is celebrated in the iconographic programs depicted on contemporary molded-carved vases. While intensifying cave usage could possibly reflect little more than a symptom of a larger local population, we believe that increased ritual activity at such places were more likely prompted by a broader set of social and political stresses emerging at this time and partly brought on by environmental degradation. The Terminal Classic period brought with it great challenges to the traditional Classic period style of life for the Maya. That many communities were unable to cope is evident by the large-scale decline and abandonment of many formerly successful city-states. We believe that the Roaring Creek valley Maya responded, in part, to the trials and tribulations of the Terminal Classic period with increased ritual activity in their sacred cave sites. That they managed to survive a little longer than many of their neighbors is evident in their continued development during the Terminal Classic period. Eventually, however, they were simply fighting the inevitable for sometime during Early Postclassic times, they too abandoned their homeland.

## References Cited

Aimers, James J.

- 1997 "Preliminary Investigations of Architecture in Plaza 2 of Group I at Baking Pot." *Belize Valley Archaeological Reconnaissance Project: Progress Report of the 1996 Field Season*, edited by Jaime J.

Awe and James M. Conlon, pp. 21-45. Department of Anthropology, Trent University, Peterborough.

Audet, Carolyn M.

- 2007 Political Organization in the Belize Valley: Excavations at Baking Pot, Cahal Pech and Xunantunich. Unpublished PhD dissertation, Department of Anthropology, Vanderbilt University, Nashville.

Audet, Carolyn M. and Jaime J. Awe

- 2004 "What's Cooking at Baking Pot: A Report of the 2001 to 2003 Seasons." *Research Reports in Belizean Archaeology*, Vol. 1: 49-59.

Awe, Jaime J.

- 1992 Dawn in the Land Between the Rivers: Formative Occupation at Cahal Pech, Belize and its Implication for Preclassic Developments in the Maya Lowlands. Unpublished PhD dissertation, Institute of Archaeology, University of London, London.

- 1998 "The Western Belize Regional Cave Project: Objectives, Context, and Problem Orientation." *The Western Belize Regional Cave Project: A Report of the 1997 Field Season*, edited by Jaime J. Awe, pp. 1-22. Department of Anthropology, Occasional Paper No. 1. University of New Hampshire, Durham.

- 2003 "The Monumental Masks of Structure B5 at Caracol." *NICH Culture*, Vol. 1 (1): 5-7.

- 2006 *Maya Cities and Sacred Caves: A Guide to the Maya Sites of Belize*. Cubola Productions, Benque Viejo del Carmen.

Awe, Jaime J., Cameron Griffith and Sherry Gibbs

- 2005 Cave Stelae and Megalithic Monuments in Western Belize. *In the Maw of the Earth Monster*, edited by James E. Brady and Keith M. Prufer, pp. 223-248. University of Texas Press, Austin.

Awe, Jaime J. and Christophe G.B. Helmke

- 1998 Preliminary Report on the Reconnaissance of Cahal Uitz Na, Roaring Creek Valley, Cayo District, Belize. *The Western Belize Regional Cave Project: A Report of the 1997 Field Season*, edited by

- Jaime J. Awe, pp. 205-221. Department of Anthropology, Occasional Paper No. 1. University of New Hampshire, Durham.
- 2000 Fashionably Late: A Postclassic Center from the Roaring Creek Valley, Belize. *The Western Belize Regional Cave Project: A Report of the 1999 Season*, edited by Cameron S. Griffith, Reiko Ishihara and Jaime J. Awe, pp. 187-198. Department of Anthropology, Occasional Paper No. 3. University of New Hampshire, Durham.
- Awe, Jaime J., Christophe G.B. Helmke and Cameron S. Griffith  
1998 Archaeological Reconnaissance in the Roaring Creek Valley: Caves, Rockshelters, and Settlements. In *The Western Belize Regional Cave Project: A Report of the 1997 Field Season*, edited by Jaime J. Awe, pp. 223-244. Department of Anthropology, Occasional Paper No. 1. University of New Hampshire, Durham.
- Ball, Joseph W. and Jennifer T. Taschek  
2004 "Buenavista del Cayo: A Short Outline of Occupational and Culture History at an Upper Belize Valley Regal-Ritual Center." *The Ancient Maya of the Belize Valley: Half a Century of Archaeological Research*, edited by James F. Garber, pp. 149-167. University Press of Florida, Gainesville.
- Chase, Arlen F. and Diane Z. Chase  
2004 "Terminal Classic Status-linked Ceramics and the Maya 'Collapse': DeFacto Refuse at Caracol, Belize." *The Terminal Classic in the Maya Lowlands: Collapse, Transition, and Transformation*, edited by Arthur A. Demarest, Prudence M. Rice, and Don S. Rice, pp. 342-366. University Press of Colorado, Boulder.
- 2006 *Trying to Understand the End: Continued Investigation of Small Structures in and near Caracol's Epicenter: 2006 Field Report of the Caracol Archaeological Project*. Department of Anthropology, University of Central Florida, Orlando.
- Chase, Arlen F., Nikolai Grube and Diane Z. Chase  
1991 "Three Terminal Classic Monuments from Caracol, Belize," *Research Reports on Ancient Maya Writing*, Number 36, Center for Maya Research, Washington, DC.
- Conlon, James M. and Jennifer J. Ehret  
1999 Survey at the Major Center of Cahal Uitz Na, Cayo District, Belize. *The Western Belize Regional Cave Project: A Report of the 1998 Field Season*, edited by Jaime J. Awe, pp. 33-44. Department of Anthropology, Occasional Paper No. 2. University of New Hampshire, Durham.
- Driver, W. David and James F. Garber  
2004 "The Emergence of Minor Centers in the Zones between Seats of Power." *The Ancient Maya of the Belize Valley: Half a Century of Archaeological Research*, edited by James F. Garber, pp. 287-304. University Press of Florida, Gainesville.
- Ehret, Jennifer J. and James M. Conlon  
1999 "Plaza Excavations at Cahal Uitz Na, Cayo District, Belize: A Preliminary Report." *The Western Belize Regional Cave Project: A Report of the 1998 Field Season*, edited by Jaime J. Awe, pp. 53-68. Department of Anthropology, Occasional Paper No. 2, University of New Hampshire, Durham.
- Ferguson, Josalyn M.  
1999a Salvage Excavations of the Ballcourt at Cahal Uitz Na. In *The Western Belize Regional Cave Project: A Report of the 1998 Field Season*, edited by Jaime J. Awe, pp. 45-52. Department of Anthropology, Occasional Paper No. 2. University of New Hampshire, Durham.
- 1999b The Ballcourts at Baking Pot, Belize: Analysis of the Ballgame at a Maya Civic Centre. Unpublished MA thesis, Department of Anthropology, Trent University, Peterborough.
- Ferguson, Josalyn M. and Sherry Gibbs  
1999 "Report on the 1998 Excavations at Actun Uayazba Kab, Roaring Creek Valley, Belize." *The Western Belize Regional Cave Project: A Report of the 1998 Field Season*, edited by Jaime J. Awe, pp. 112-145. Department of Anthropology, Occasional Paper No. 2, University of New Hampshire, Durham.

- Gibbs, Sherry A.  
1998 Human Skeletal Remains from Actun Tunichil Mucnal and Actun Uayazba Kab. In *The Western Belize Regional Cave Project: A Report of the 1997 Field Season*, edited by Jaime J. Awe, pp. 71-95. Department of Anthropology, Occasional Paper No. 1. University of New Hampshire, Durham.  
2000 An Interpretation of the Significance of Human Remains from the Caves of the Southern Maya Lowlands. Unpublished MA thesis, Department of Anthropology, Trent University, Peterborough.
- Gifford, James C.  
1976 *Prehistoric Pottery Analysis and the Ceramics of Barton Ramie in the Belize Valley*. Memoirs of the Peabody Museum of Archaeology and Ethnology Vol. 18, Harvard University, Cambridge.
- Graham, Elizabeth A.  
1987 "Terminal Classic to Early Historic Period Vessel Forms from Belize." *Maya Ceramics: Papers from the 1985 Maya Ceramic Conference, Vol. 1*, edited by Prudence M. Rice and Robert J. Sharer, pp. 73-98. BAR International Series 345 (i), Oxford.
- Graham, Elizabeth A., Logan McNatt, and Mark A. Gutchen  
1980 "Excavations in Footprint Cave, Caves Branch, Belize." *Journal of Field Archaeology*, Vol. 7 (2): 153-172.
- Graham, Elizabeth A. and David M. Pendergast  
1989 "Excavations at the Marco Gonzalez Site, Ambergris Cay, Belize, 1986." *Journal of Field Archaeology*, Vol. 16 (1): 1-16.
- Griffith, Cameron S.  
1998 Excavations and Salvage Operations in Actun Tunichil Muknal and Actun Uayazba Kab, Roaring Creek Valley, Belize. *The Western Belize Regional Cave Project: A Report of the 1997 Field Season*, edited by Jaime J. Awe, pp. 23-36. Department of Anthropology, Occasional Paper No. 1. University of New Hampshire, Durham.
- Healy, Paul F., Bobbi Hohmann and Terry G. Powis  
2004 "The Ancient Maya Center of Pacbitun." *The Ancient Maya of the Belize Valley: Half a Century of Archaeological Research*, edited by James F. Garber, pp. 207-227. University Press of Florida, Gainesville.
- Healy, Paul F., Christophe G.B. Helmke, Jaime J. Awe and Kay S. Sunahara  
2007 "Survey, Settlement, and Population History at the Ancient Maya Site of Pacbitun, Belize." *Journal of Field Archaeology*, Vol. 32 (1): 17-39.
- Helmke, Christophe G.B.  
1999 "Exploration and Investigations of the Sinkhole Tunnels, Actun Tunichil Muknal, Belize." *The Western Belize Regional Cave Project: A Report of the 1998 Field Season*, edited by Jaime J. Awe, pp. 146-165. Department of Anthropology, Occasional Paper No. 2, University of New Hampshire, Durham.  
2000a "Pook's Hill 1, Operations 1 through 3: Salvage Excavations of Structure 4A, Roaring Creek Valley, Cayo District, Belize." *The Western Belize Regional Cave Project: A Report of the 1999 Field Season*, edited by Cameron S. Griffith, Reiko Ishihara and Jaime J. Awe, pp. 287-330. Department of Anthropology, Occasional Paper No. 3, University of New Hampshire, Durham.  
2000b "An Analysis of the Ceramic Remains from Structure ATM-M1, Roaring Creek Valley, Belize." *The Western Belize Regional Cave Project: A Report of the 1999 Season*, edited by Cameron S. Griffith, Reiko Ishihara and Jaime J. Awe, pp. 239-261. Department of Anthropology, Occasional Paper No. 3. University of New Hampshire, Durham.  
2000c "Terminal Classic Molded-carved Ceramics from Structures 193, 198 and 199, Baking Pot, Cayo District, Belize." *The Western Belize Regional Cave Project: A Report of the 1999 Field Season*, edited by Cameron S. Griffith, Reiko Ishihara & Jaime J. Awe, pp. 15-42. Department of Anthropology, Occasional Paper No. 3, University of New Hampshire, Durham.
- 2001 The Last Supper: Competitive Feasting and the Terminal Classic Moulded-carved Ceramic Tradition in the Central Maya

- Lowlands. Unpublished MA Dissertation. Institute of Archaeology, University College London, London.
- 2003 "The 2002 Season Investigations at Pook's Hill, Belize." *Papers from the Institute of Archaeology*, Vol. 14: 119-128.
- 2006a "A Summary Report of the 1999-2002 Seasons of Archaeological Investigations at Pook's Hill, Cayo District, Belize." *Research Reports in Belizean Archaeology*, Vol. 3: 173-191.
- 2006b "A Report of the 2005 Season of Archaeological Investigations at Pook's Hill, Cayo District, Belize." *The Belize Valley Archaeological Reconnaissance Project: A Report of the 2005 Field Season*, edited by Christophe G.B. Helmke and Jaime J. Awe, pp. 39-92. Institute of Archaeology, National Institute of Culture and History, Belmopan.
- Helmke, Christophe G.B. and Jaime J. Awe  
1998 Preliminary Analysis of the Pictographs, Petroglyphs and Sculptures of Actun Uayazba Kab, Cayo District, Belize. In *The Western Belize Regional Cave Project: A Report of the 1997 Field Season*, edited by Jaime J. Awe, pp. 145-203. Department of Anthropology, Occasional Paper No. 1. University of New Hampshire, Durham.
- 2005 "The Ancient Maya Sweatbath at Pook's Hill." *Belize Today*, Vol. 5 (1): 24-26.
- in press "Organización territorial de los antiguos mayas de Belice Central: confluencia de datos arqueológicos y epigráficos." *Mayab*, No. 19.
- Helmke, Christophe G.B., Jaime J. Awe and Cameron S. Griffith  
2003 El Arte Rupestre de Belice. *Arte rupestre de Mexico oriental y Centro America*, edited by Martin Kunne and Matthias Strecker, pp. 97-117. Gebr. Mann Verlag, Berlin.
- Helmke, Christophe, Andrew Bevan and Jaime Awe  
2004 "Everyday Maya: Life along the Roaring Creek Valley." *Current World Archaeology*, Nr. 4: 10-16.
- Helmke, Christophe G.B., Pierre Robert Colas and Jaime J. Awe  
1998 Comments on the Typology, Epigraphy and Iconography of the Actun Tunichil Muknal Vase and Belize Valley Modeled-Carved Vessels. *The Western Belize Regional Cave Project: A Report of the 1997 Field Season*, edited by Jaime J. Awe, pp. 97-144. Department of Anthropology, Occasional Paper No. 1. University of New Hampshire, Durham.
- Helmke, Christophe, Nikolai Grube and Jaime Awe  
2006 "A Comprehensive Review of the Carved Monuments and Hieroglyphic Inscriptions of Xunantunich, Belize." *The Belize Valley Archaeological Reconnaissance Project: A Report of the 2005 Field Season*, edited by Christophe G.B. Helmke & Jaime J. Awe, pp. 143-186. Institute of Archaeology, National Institute of Culture and History, Belmopan.
- Iannone, Gyles  
2003 "Rural Complexity in the Cahal Pech Microregion: Analysis and Implications." *Perspectives on Ancient Maya Rural Complexity*, edited by Gyles Iannone and Samuel V. Connell, pp. 13-26. Cotsen Institute of Archaeology, University of California, Los Angeles.
- Ishihara, Reiko, Karl A. Taube and Jaime J. Awe  
2006 "The Water Lily Serpent Stucco Masks at Caracol, Belize." *Research Reports in Belizean Archaeology*, Vol. 3: 213-223.
- LeCount L., Jason Yaeger, Richard M. Leventhal, and Wendy Ashmore  
2002 "Dating the Rise and Fall of Xunantunich, Belize: A Late and Terminal Classic Lowland Maya Secondary Center." *Ancient Mesoamerica*, Vol. 13 (1): 41-63.
- Leventhal, Richard M. and Wendy Ashmore  
2004 "Xunantunich in a Belize Valley Context." *The Ancient Maya of the Belize Valley: Half a Century of Archaeological Research*, edited by James F. Garber, pp. 168-179. University Press of Florida, Gainesville.
- Martin, Simon and Nikolai Grube

- 2000 *Chronicle of the Maya Kings and Queens: Deciphering the Dynasties of the Ancient Maya*. Thames & Hudson, London.
- Moyes, Holley  
2005 "Cluster Concentrations, Boundary Markers, and Ritual Pathways: A GIS Analysis of Artifact Cluster Patterns Actun Tunichil Muknal, Belize." *In the Maw of the Earth Monster*, edited by James E. Brady and Keith M. Prufer, pp. 269-300. University of Texas Press, Austin.
- Moyes, Holley and Jaime J. Awe  
1998 "Spatial Analysis of Artifacts in the Main Chamber of Actun Tunichil Muknal, Belize: Preliminary Results." *The Western Belize Regional Cave Project: A Report of the 1997 Field Season*, edited by Jaime J. Awe, pp. 37-69. Department of Anthropology, Occasional Paper No. 1. University of New Hampshire, Durham.
- Pendergast, David M.  
1981 Lamanai 1980: Summary of Excavation Results, 1974-1980. *Journal of Field Archaeology*, Vol. 8 (1): 29-53.
- Smith, Robert E. and James C. Gifford  
1966 "Maya Ceramic Varieties, Types and Wares at Uaxactun: Supplement to 'Ceramic sequence at Uaxactun, Guatemala'." *Middle American Research Institute Publication*, Vol. 28 (4): 125-174.
- Song, Rhan-Ju, Peter A. Zubrzycki and Christophe G.B. Helmke  
2000 A Report on the 1999 Excavations of Structure ATM-M1 in the Cahal Uitz Na Periphery, Roaring Creek Valley, Belize. *The Western Belize Regional Cave Project: A Report of the 1999 Season*, edited by Cameron S. Griffith, Reiko Ishihara and Jaime J. Awe, pp. 209-238. Department of Anthropology, Occasional Paper No. 3. University of New Hampshire, Durham.
- Taschek, Jennifer T. and Joseph W. Ball  
2004 "Buenavista del Cayo, Cahal Pech, and Xunantunich: Three Centers, Three Histories, *One Central Place*." *The Ancient Maya of the Belize Valley: Half a Century of Archaeological Research*, edited by James F. Garber, pp. 191-206. University Press of Florida, Gainesville.
- Yaeger, Jason R.  
2000 Changing Patterns of Social Organization: The Late and Terminal Classic Communities at San Lorenzo, Cayo District, Belize. Unpublished PhD dissertation, Department of Anthropology, University of Pennsylvania, Philadelphia.

---

## 4 **ANCIENT MAYA DROUGHT CULT: LATE CLASSIC CAVE USE IN BELIZE**

*Holley Moyes*

---

*The ancient Maya of Belize used caves since the Early Middle Preclassic period. Although they were always ritual venues, work at Chechem Ha Cave in western Belize illustrates that ritual practices in caves changed over time in both form and intensity. A distinct change in practice occurred between the Early and Late Classic periods. Beginning in the Late Classic, ritual practice entailed the placement of large partial or whole vessels, mostly jars, in caves. Preferred activity areas were in remote areas of the sites or in spaces with restricted access that were small and difficult to reach. This change in practice correlates with a dry period that begins approximately A.D. 700 and lasts over 500 years. This paper presents evidence that activities noted in ancient Maya cave sites dating to the beginning of this period represent a Late Classic drought cult.*

### **Introduction**

Since the 1970's there have been a steadily increasing number of archaeological, iconographic, and epigraphic studies regarding ancient Mesoamerican caves (Brady and Prufer 2005). The most important collective finding of these studies is the establishment of caves as sacred space and their exclusive use as ritual venues by Pre-Columbian people. The second major finding is that caves are integrally connected with water control and agricultural fertility. This can be demonstrated in deep antiquity as early as the Olmec civilization (1200-200BC). For instance, the water/fertility theme is illustrated in the El Rey monument from Chalcatzingo. Although it has been variously interpreted, most scholars agree that the image represents a man who is a king or ancestor sitting on a cloud scroll within a cave. Mist or smoke emanates from the entrance. Clouds rain on the scene and corn and other vegetation is depicted on the surface on top of the cave (Angulo 1987:133-158; Grove 1984: 110-111; Reilly 1994:78-79).

The water/fertility theme is pervasive throughout Mesoamerica and is found much later in the Preclassic Maya murals from the San Bartolo that date to the first century

B.C. (Saturno et al. 2005). The mural on the north wall illustrates a creation event in which maize tamales and gourds of water are being handed out of the entrance of a cave, probably the cave of origin. The association suggests that both the first maize and primordial water originated in caves. The ancient Maya Maize God is depicted at the mouth of the cave accepting the offerings. The 17th century Popol Vuh story of the Maya creation tells us that the Maize God is intimately connected with caves, as he is an underworld denizen.

The archaeological record demonstrates that in the Classic period many of the cave rites were water-related. This is not surprising when we consider that a number of deities thought to reside in caves were associated with agricultural success. For instance, the Maya Rain God Chac is depicted sitting in his cave/house on a Classic period vase (Coe 1978:78, no.11). A reified example of this is found at the cave of La Pailita in Guatemala where a life size sculpture of Chac sits on his throne in the cave's interior (Graham 1997).

Activity areas in caves also suggest that water was an important feature of cave rites. In his survey of 48 caves in the Yalahau area of Quintana Roo, Dominique

Rissolo (2001; 2005) noted that many of the caves in his survey contained interior water features such as intermittent pools. Both rock art and architectural modifications tended to be associated with these features and art from the cave of Pak Che'n contained rain-god motifs. In the formal spatial analysis conducted by the Western Belize Regional Cave Project in the Main Chamber of Actun Tunichil Muknal by myself and Jaime Awe, we found that 51% of the artifact assemblage was placed in intermittent pools (Moyes 2001; Moyes and Awe 1998; 2000).

So, given that cave rites were strongly associated with agricultural success entailing the control of rainfall, we might expect cave ritual to be affected by climatic factors. The use of rituals as a type of technology to anticipate and minimize agricultural risk has been demonstrated among the modern Maya by David Freidel and Justine Shaw (2000). Based on the 43 ethnographic and ethnohistoric cases studied, they reported that where agriculture was risky, primarily due to water availability, ritual increased. What this implies is that ethnographically it has been documented that water availability is one of the primary concerns of modern Maya agriculturists and that ritual investment is somewhat linked to agricultural risk based on environmental factors.

Archaeological investigations at Chechem Ha Cave coupled with recent paleo-environmental data suggest that a prolonged dry period during the Late Classic period provoked a ritual response that can be detected in cave usage. It is demonstrated by changes in ritual practice between the Early and Late Classic periods that produced distinctly different signatures in the archaeological record. These ritual transformations are demonstrated by variation in the use of space, differences in the condition and provenience of artifacts,

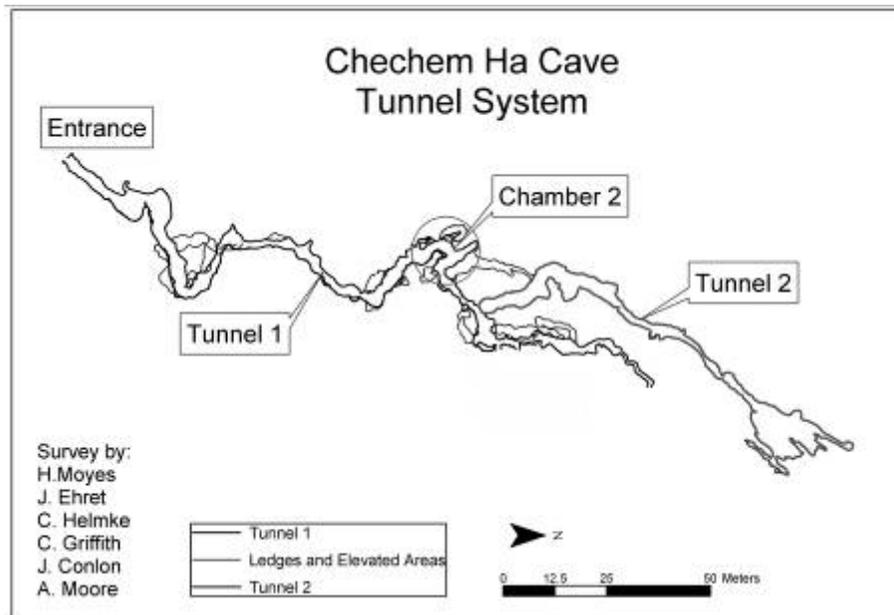
and changes in ritual *use-intensity*. What I refer to as *use-intensity* is closely related to what is known in anthropological contexts as "ritual density." This examines why some societies or historical periods have more ritual than others (Bell 1997:173). In the archaeological record, *use-intensity* can be studied by identifying a material signature that correlates with ritual activity.

### The Cave

Chechem Ha has been under investigation by the Western Belize Regional Cave Project (WBRCP) directed by Dr. Jaime Awe since 1998. It was discovered in 1989 and opened as a tourist venue in 1995. The cave is located in western Belize on the western bank of the Macal River near the Guatemalan border (Awe et al. 2005). The surface sites closest to the cave are Tipu located 5.6km to the north, Las Ruinas 6km to the northwest, and Minanhá located 6.5km to the southwest.

Chechem Ha is a complex cave system that contains over 300m of tunnels. The system is 198m in length and consists of two primary conduits, Tunnel 1 and Tunnel 2 (Figure 1). There are four elevated side passages and eleven shelves located from 3-7m above the Tunnel 1 floor. Artifacts are found throughout the entire caves system in niches and alcoves along the tunnel floors, in the elevated passages, and on all eleven shelves.

Based on radiocarbon dates, the site was used from the Early Middle Preclassic (1100-820 B.C.) possibly as early as 1300 B.C. to the Late Classic period (Moyes 2002, 2004). These are the earliest radiocarbon dates for Maya ritual cave use in the lowlands and are contemporaneous with the earliest settlers in the Belize Valley (Garber et al. 2004). The latest date for usage based on AMS dating of charcoal is A.D. 960. This is important because the cave's use spanned the 2,000-year



**Figure 1.** Map of Chechem Ha tunnel system.

development and collapse of the Classic period socio/political system, providing a broad temporal perspective on ritual cave use within a single site. The entrance of the cave was blocked with medium to large sized boulders no later than A.D. 960. This correlates roughly with the Classic Maya Collapse and agrees with termination events from the two nearest surface sites Las Ruinas de Arenal (Taschek and Ball 1999) and Minanhá (Iannone 2001) occurring approximately A.D. 850.

### Methods

Changes in ritual practice over time in the cave were evaluated using detailed mapping, implementing a rigorous dating program, and conducting test pitting as well as broad horizontal excavations. Two proxy measures were used to evaluate the site's use-intensity--the number of ceramic entities and charcoal flecks present on the excavated levels of Chamber 2. Chamber 2, located 134 m from the cave entrance deep within the dark zone (see Figure 1), exhibited the heaviest utilization and deepest subsurface

deposits. The chamber could only be accessed using an artificial light source.

Both archaeological and iconographic evidence demonstrates that the Maya used wood torches to light their way in caves (Morehart 2005; Morehart et al. 2005). This is born out in archaeological studies. Charcoal flecks from torches as well as unburned wood fragments (Prufer 2002:614; Gann 1925:111) are found in virtually every utilized cave dark zone in Mesoamerica. A large partially burned torch fragment was located at Chechem Ha on Ledge 10 and charcoal flecks were present throughout the site. All evidence from the archaeological record indicates that torches were the sole source of fuel used in caves throughout the ancient Maya era. In his study of plant remains at Chechem Ha, Morehart (2002) reported that all charcoal flecks collected from surface deposits were *Pinus* species. Experiments conducted with *ocote* pine torches collected from the forest around the cave illustrated that they produced a steady rain of charcoal flecks that could be used as a proxy to evaluate

fluctuations in the amount of activity occurring in the cave over time.

The *use-intensity* measure must be distinguished from estimates of frequency of use because, depending on the signature that is used, it is impossible to distinguish whether the charcoal in the deposits is a result of more or fewer discrete rituals, the participation of more or fewer individuals in a fixed number of rituals, the result of rituals of a longer or shorter duration, or the effects of a change in ritual practice. Two methods are helpful in resolving this issue. One method is to use multiple proxies and the other is to employ an *indirect* signature that is less likely to be linked to the ritual itself. In this case, charcoal flecks dropping from torches serve as a good indirect proxy measure because torches were a functional necessity for entering the dark areas of the cave. Numbers of charcoal flecks could then be compared with the numbers of ceramics from particular temporal periods.

Two field seasons were spent mapping the modern surface finds of the cave (Moyes, 2002, 2004, 2005, 2006). A test-pitting program conducted in the third season demonstrated that the cave had deep subsurface deposits containing wood charcoal that enabled us to date the deposits. A total of 44 AMS dates for the site were processed at the University of Arizona Accelerator Mass Spectrometry (AMS) Laboratory. Dates were calibrated using Oxcal 3 and are reported at the 2 sigma probability. Areas with no subsurface deposits were dated using ceramic chronologies based on James Gifford's (1976) type-variety-mode system (Jaime Awe personal communication 1999; James Aimers personal communication 2003; Joseph Ball personal communication 1999; Joseph Ball and Jennifer Taschek personal communication 2005; Ishihara 2000; Kay Sunahara personal communication 2001). These data were supplemented with AMS

dates derived from charcoal present on the surface. There were a total of 1901 ceramic sherds, whole, or partial vessels that after in situ reconstruction represented 563 vessels (these were re-tabulated from preliminary counts in 2006), 470 of which were typed for chronology.

In the fourth season a broad 2m x 8m horizontal excavation was conducted in the chamber. This area was crucial in understanding early cave use because it is necessary to traverse this area to enter the deeper parts of the system. The excavation consisted of 18 natural and cultural layers that were excavated to bedrock (Moyes 2004; Moyes 2006). Using *Photomapping*, an in-field GIS technology developed by Mark Aldenderfer and Nathan Craig (Aldenderfer and Craig 2002; Craig 2000; Craig et al. 2006), the numerous charcoal flecks on each excavated surface in Chamber 2 was counted.

## Results

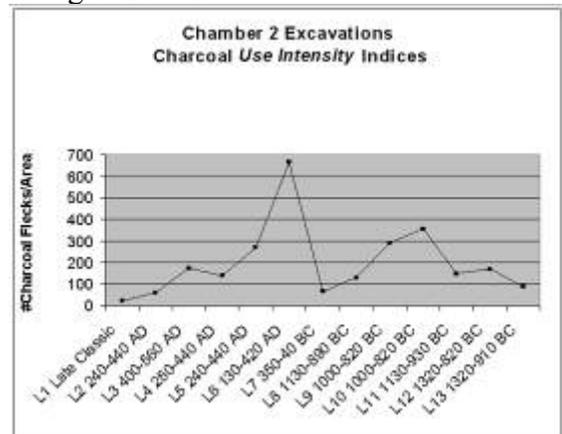
The ceramic chronology from both surface and subsurface contexts determined that 4% were from the Jenny Creek complex of the Middle Preclassic period, 5% from the Barton Creek complex of the Late Preclassic Period, only a single sherd dated to the later part of the Late Preclassic Mount Hope Complex, 39% to the combined Terminal Preclassic/Early Classic or Floral Park/Hermitage period, 2% to the early Late Classic Tiger Run complex, and 51% to the Late Classic Spanish Lookout complex. Based on these figures one might at first glance expect that the cave underwent its most intensive usage in Late Classic period but this is not a safe assumption. Because ceramics are portable objects brought into the cave as offerings or as an element of a ritual they are a direct proxy and are likely to be affected by changes in ritual practices.

Proxy measures based on charcoal revealed that there was very little *use-*

*intensity* in the Late Classic period. AMS dates from the Chamber 2 excavations determined that Levels 1-13 dated to the Maya era. Level 1 was the modern surface. Levels 2-6 dated to the Early Classic period, Level 7 to the Late Preclassic, and Levels 8-13 to the Early Middle Preclassic. The number of charcoal flecks per level ranged from 265 to 8,244. A correction to the raw data was made because the excavated surface areas were not of identical size on each level. As the excavations progressed the cave walls curved inward and spatial areas narrowed toward the bottom. Therefore the numbers of flecks were divided by the area of the excavated level to produce a *use-intensity* index. Figure 2 illustrates the variation between levels. Beginning in the Early Middle Preclassic period there is heavy usage. This falls off after 820 B.C. There is little usage in Level 7. This level dated to 350-40 B.C. but is bracketed by much earlier and later dates. It suggests that the chamber received low-intensity usage for a long period of time. Level 6 is the time of heaviest use-intensity and dates from the Terminal Preclassic to the beginning of the Early Classic period 210-420 A.D. Over the Early Classic *use-intensity* wanes and by the Late Classic period there is very little *use-intensity* of the chamber.

When we view the two data sets side by side we find both agreement and discrepancies between the ceramic chronology and *use-intensity* (Figure 3). In the Middle Preclassic period charcoal counts are high but ceramic counts are at their lowest belying the amount of site usage at this early period. Both sets illustrate low amounts of both charcoal and ceramics in the Late Preclassic period, which suggests sparse usage of the site. During the Early Classic period the ceramic counts and charcoal indices increase considerably suggesting an intensification of use. In the

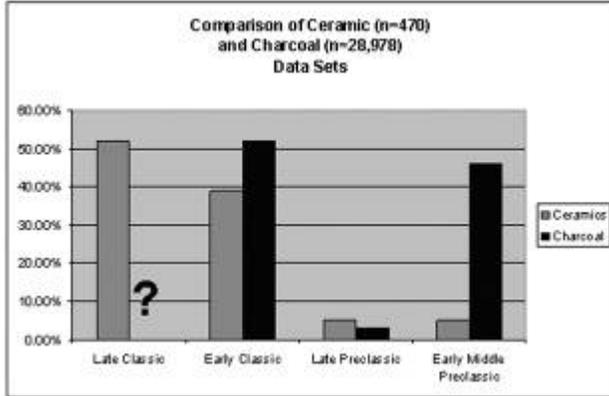
Late Classic period it is just the opposite. The ceramic data suggests that there is a greater intensity of use than indicated by the amount of charcoal found on the surface. This presents a quandary because we know that the chamber was indeed used in the Late Classic period. There are caches of Late Classic ceramics on the Chamber 2 surface and on Ledge 9 located on the south side of the chamber. Because there is so little charcoal on the surface and so many ceramic entities within the site, these data suggest that ceramic vessels may have taken on a greater importance in rituals conducted during this time.



**Figure 2.** Graph of use-intensity index shows numbers of charcoal flecks by excavated level divided by surface area of excavated space. Chart moves from youngest to oldest deposits

Between the Early and Late Classic periods, the use of space changed within the cave on a global scale. The maps in Figure 4 illustrate the spatial variation of diagnostic ceramics for these two periods. The Early Classic distributions occurred in three major areas: the passage leading to Chamber 2, Ledge 10 located in Chamber 2, and in the deepest passages of Tunnel 1. In the Late Classic period Ledge 10 fell out of use but the other 10 ledges were used for the first time in the cave's history. In addition to the ledges, artifacts were also placed in the elevated passages, crawl spaces, and other spatially restricted spaces and even those

areas that were difficult to access. While some of these spaces were used in earlier periods they clearly became the activity areas of choice in the Late Classic.

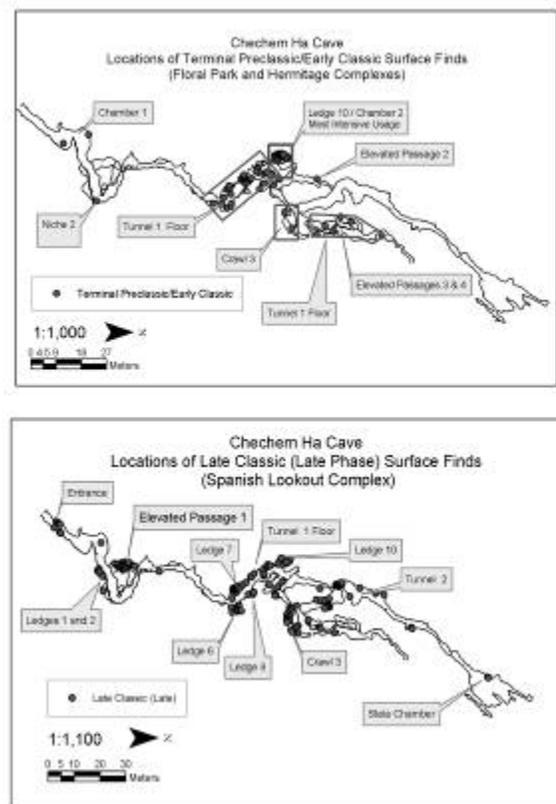


**Figure 3.** Chart shows the percentages of ceramic and charcoal data sets for each major temporal period. There is less than 1% of the total number of charcoal flecks on the surface of Chamber 2 which is curious considering that over 50% of the ceramics in the cave dated to the Late Classic period

Finally, the condition of the ceramic assemblage changed somewhat between the Early and Late Classic periods. In the Early Classic whole or partially intact vessels were rare while in the Late Classic there were 51 fully intact vessels and numerous others that were partially intact. Most of these are jar forms. Figure 5 illustrates the typical condition of the assemblages.

Based on five dates collected from the ledges and from Elevated Passage 3 it appears that this change in practice occurred sometime after A.D. 680 (Table 1). To summarize we see that during the Late Classic period over 51% of the caves entire ceramic assemblage was imported into the site over a relatively short time span between A.D.680 and A.D.960. During this time the deposition of ceramic vessels, mostly jars, was a major focus of cave rites. Activity areas shifted from the tunnel floor to ledges and other difficult to access, remote and hard to reach areas.

Although there were a large number of objects imported into the site in the Late Classic period, the *use-intensity* data suggest that relatively small groups did this. Additionally the number of participants in these rites was limited due to the choice of activity areas such as small high ledges or other restricted spaces that could accommodate only a few people. Not only this, but participants could not have spent long periods of time in the cave because long rites would be expected to produce greater amounts of charcoal rain from torches. These findings suggest that in the Late Classic period groups that entered the cave conducted rituals of short duration in very restricted areas.



**Figure 4.** Maps of cave illustrating differences in the distributions of ceramics between the Early (top) and Late (bottom) Classic periods. In the Late Classic ceramics are more widely distributed throughout the site. Ledges and high level passages become the preferred activity areas at this time.



**Figure 5.** Photo illustrating differences between typical Early and Late Classic cave ceramic assemblages. a) Early Classic assemblage is highly fragmented whereas b) Late Classic assemblage contains more whole or partial vessels.

AZ Lab #	Period	Area	Radiocarbon Age	Calibrated Date 2 Sigma	Alternative Probabilities
AA57293	Late Classic	Ledge 6	1187±33	AD 720-960	
AA57288	Late Classic	Ledge 4	1210±31	AD 690-900	AD760-900(85.4%)
AA59754	Late Classic	Ledge 6	1224±38	AD 680-900	
AA59753	Late Classic	EP3	1239±36	AD 680-890	
AA57291	Late Classic	Ledge 7	1244±31	AD 680-890	

**Table 1.** Late Classic AMS dates calibrated using OxCal 3.

### A Regional Phenomenon

The placement of intact and partially intact Spanish Lookout-style jars (Late Classic) in remote or difficult to access areas is not limited to Chechem Ha but is a widespread phenomenon in Belizean cave sites during this period. Some caves sites were only used in the Late Classic period and all known Maya cave sites in Belize show evidence of Late Classic usage. Large Late Classic whole or partially intact vessels are reported by the Western Belize Regional Cave Project in the Entrance Chambers and Main Chamber at Actun Tunichil Muknal (Griffith 1998; Moyes 2001), Barton Creek Cave (Mirro and Mirro 2001), Flour Camp Cave (Ishihara 2001), Laberinto de las Tarantulas (Helmke et al. 1999), and Yaxteel Ahau (Mirro and Halperin 2000;

Owen and Gibbs 1999). These are often located in remote or hard to reach areas.

In his survey of 48 caves in southern Belize, Prufer (2002) also found numerous caves containing partial or whole Late Classic vessels placed in difficult-to-access or remote areas. The pattern was also noted at Eduardo Quiroz Cave in the Chiquibul region of southern Cayo District (Pendergast 1971) and at Rio Frio Cave in the Mountain Pine Ridge (Pendergast 1970). In the Caves Branch area Graham and her colleagues (1980) illustrated a number of Late Classic jars and bowls from the high ledge at Footprint Cave and numerous intact Late Classic jars and dishes were found in Alcoves I and II at Actun Polbiche in the Sibun Hills (Pendergast 1974). Patricia McAnany and her colleagues (2003) also

working in the Sibun area reported large Late to Terminal Classic vessels found in inaccessible areas at Pottery Cave.

### **A Late Classic Drought Cult**

Given the relationship of caves to agriculture and particularly water-related rites we would expect that ritual practices might be integrally linked to climatic conditions, especially rainfall. One of the best methods for deriving local paleo-climate reconstructions is the analysis of speleothems from caves. Speleothems, which include both stalactites and stalagmites, are formed by calcite deposition that accumulated as bands or rings (Ford and Williams 1989; Hill and Forti 1997). In areas with annual wet and dry seasons the bands suggest yearly events much like tree rings. Bands can be dated using radiocarbon or Uranium-series (U-series) dating. Dates are determined for specific bands by bracketing absolute dates (Schwarcz and Rink 2001). Because this is a yearly cycle, there is good potential for the recovery of fine-scaled temporal climatic data.

James Webster (2000) conducted a paleo-climate study of relative rainfall availability using a speleothem from the Vaca Plateau in western Belize located approximately 5km from Chechem Ha Cave. Webster evaluated the thickness and frequency of bands, their color, luminescence, and isotopic ratios ( $\delta^{18}\text{O}$ ). His data demonstrated that from A.D. 700 to A.D. 1225 there was a long dry period with spikes in dryness one standard deviation below average occurring at approximately A.D. 809, 928, 1126, and 1206. The spikes in dryness correlate with the Classic Maya Collapse occurring in the eighth century.

The timing of the dry cycle coincides well with changes in ritual practice at Chechem Ha cave beginning about A.D. 680. Given the deep antiquity of Maya beliefs that associate caves with gods that

control water; in a time of environmental crisis caves would have been the logical ritual venue to propitiate these deities. The ubiquitous presence of intact or partial jars in these assemblages is also suggestive because of the cosmological connotations associated with jars.

Ethnographic evidence reported by Tarn and Prechtel (1986:176) from Lake Atitlan in Guatemala point out that Maria Castellana, a female creatrix, is associated with the moon, which is thought to hold rainwater. The moon is envisioned as a large olla. During rainy season it turns sideways until the water spills out. Images in the Dresden codex suggest that this is an ancient belief. On page 74 is an illustration of the primordial flood that Karl Taube (1992:100, 1995: 69-71) associated with the original Maya creation event. An old woman, named in the codex as *Chac Chel* and identified by Taube as Goddess O, the Moon Goddess, hangs in the sky. In her hands there is an inverted olla pouring water. Because she is pictured in the cave paintings at Naj Tunich, Brady (1989:47-49) has long argued that this female deity is associated with caves. In Late Classic cave rituals water jars likely relate to Maya mythology that equates rain and water deities with these vessels.

### **Conclusion**

The evidence suggests that ritual practice in caves in the Late Classic period represents a drought cult that is pervasive on a regional scale. When we consider the relationship between caves, water control and agricultural fertility it is hardly surprising that caves would become the focus of ritual during a time of climatic stress. At Chechem Ha Cave the phenomena can be temporally circumscribed beginning after A.D. 680 and ending by A.D. 960, about the time that the local sites were abandoned. The correlation between the

changes in practice and the onset of a prolonged dry period can hardly be accidental. The deposition of large jars in hard to reach areas also suggests that rituals to propitiate rain deities became more costly and elaborated at this time and that the offering itself takes on greater importance.

This information is important in understanding how the dry period affected the lives of Maya people. The study not only defines the behaviors that produced the artifact record but implies a cognitive aspect as well. These data confirm that there was in fact a ritual response to the environmental stress. The dry period was not an abstract concept imperceptible to Maya people but rather was a *perceived* problem. The blocking and possible termination of the cave following this last period of usage and the area's abandonment suggests that there was in fact a perceived ritual failure.

*Acknowledgments* I would like to thank Dr Jaime Awe, principal investigator for the Western Belize Regional Cave Project (WBRCP). Appreciation is extended to the Morales and Plytez families, crewmembers Jim Aimers, Anthony Beardall, Jim Conlon, Jennifer Ehret, Cameron Griffith, Christophe Helmke, Reiko Ishihara, Mike Mirro, Grant Polley, Connie Price, and Kay Sunahara. Mark Aldenderfer provided computer equipment for the project and Nathan Craig was instrumental in implementing the *photo mapping* technique. Thanks to Joseph Ball and Jennifer Taschek for identifying problematic ceramics. Various aspects of the project were funded by an NSF dissertation improvement grant to Dr. Ezra Zubrow, the Foundation for the Advancement of Mesoamerican Studies, the Cave and Karst Conservancy, the Cave Research Foundation, and the Mark Diamond fund at the University at Buffalo.

## References Cited

Aldenderfer, Mark S. and Nathan Craig  
2002 A GIS-based in-field data recording system for archaeological excavation. Paper

presented at the 13th Annual Workshops in *Archaeometry*, University at Buffalo.

Angulo, Jorge V.  
1987 The Chalcatzingo Relief's: an Iconographic Analysis. In *Ancient Chalcatzingo*, edited by David C. Grove, pp. 133-158, University of Texas Press, Austin.

Awe, Jaime J., Sherry Gibbs, and Cameron Griffith  
2005 Stelae and Megalithic Monuments in the Caves of Western Belize. In *In the Maw of the Earth Monster: Mesoamerican Ritual Cave Use*, edited by James E. Brady and Keith M. Prufer, pp. 223-248, University of Texas Press, Austin.

Bell, Catherine  
1997 *Ritual: Perspectives and Dimensions*. Oxford University Press, New York.

Brady, James E.  
1989 Investigation of Maya Ritual Cave Use with Special Reference to Naj Tunich, Peten, Guatemala. Unpublished Ph.D. Dissertation, Department of Anthropology, University of California, Los Angeles.

Brady, James E. and Keith Prufer  
2005 Maya Cave Archaeology: A New Look at Religion and Cosmology. In *Stone Houses and Earth Lords: Maya Religion in the Cave Context*, edited by Keith M. Prufer and James E. Brady, pp. 365-380, University Press of Colorado, Boulder.

Coe, Michael  
1978 *Lords of the Underworld*. Princeton University Press, Princeton.

Craig, Nathan  
2000 Real-Time GIS Construction and Digital Data Recording of the Jiskairumoko Excavation, Peru. *The Society for American Archaeology Bulletin* 18(1):24-28.

Craig, Nathan, Mark Aldenderfer, and Holley Moyes  
2006 Multivariate Visualization and Analysis of Photomapped Artifact Scatters, *Journal of Archaeological Science* 20:1-10.

Ford, Derek C., and P. W. Williams  
1989 *Karst Geomorphology and Hydrology*. Unwin, Hyman, Boston. (London)

- Freidel, David and Justine Shaw  
2000 The Lowland Maya Civilization: Historical Consciousness and Environment. In *The Way the Wind Blows: Climate, History, and Human Action*, edited by Roderick J. McIntosh, Joseph A. Tainter, and Susan Keech McIntosh, pp. 271-300, Columbia University Press, New York.
- Gann, Thomas  
1925 *Mystery Cities: Exploration and Adventure in Lubaantun*. London, Duckworth.
- Garber, James F., M. Kathryn Brown, Jaime J. Awe, and Christopher J. Hartman  
2004 Middle Formative Prehistory of the Central Belize Valley: An Examination of Architecture, Material Culture, and Sociopolitical Change at Blackman Eddy. In *The Ancient Maya of the Belize Valley: Half a Century of Archaeological Research*, edited by James F. Garber, pp. 25-48. University Press of Florida, Gainesville.
- Gifford, James C.  
1976 Prehistoric Pottery Analysis and the Ceramics of Barton Ramie in the Belize Valley. *Memoirs of the Peabody Museum of Archaeology and Ethnology* 18, Harvard University, Cambridge, MA.
- Graham, Elizabeth, Logan McNatt, and Mark A. Gutchen  
1980 Excavations in Footprint Cave, Belize. *Journal of Field Archaeology* (7):153-172.
- Graham, Ian  
1997 Discovery of a Maya Ritual Cave in Peten, Guatemala. *Symbols* (Spring):28-31.
- Griffith, Cameron  
1998 Excavations and Salvage Operations in Actun Tunichil and Actun Uayzba Kab, Roaring Creek Valley, Belize. In *The Western Belize Regional Cave Project: A Report of the 1997 Field Season*, edited by Jaime J. Awe, pp. 37-70, Dept. of Anthropology, Occasional Paper No. 1, University of New Hampshire, Durham.
- Grove, David C. and Susan Gillespie  
1984 Chalcatzingo's Portrait Figurines and the Cult of the Ruler. *Archaeology* 37(4):27-33.
- Helmke, Christophe G. B., Cameron S. Griffith, Michael J. Mirro  
1999 The 1996 and 1998 Investigations at Laberinto De Las Tarantuals, Cayo District, Belize. In *The Western Belize Regional Cave Project: A Report of the 1998 Field Season*, edited by Jaime J. Awe, pp. 205-221, Department of Anthropology, Occasional Paper No. 2, University of New Hampshire, Durham.
- Hill, Carol A., and Paolo Forti  
1986 *Cave Minerals of the World*. National Speleological Society, Huntsville, Alabama.
- Iannone, Gyles  
2001 Fall of the House of Minanhá: A Case of Late Classic Political Disruption in West Central Belize. In *Archaeological Investigations in the North Vaca Plateau, Belize: Progress Report of the Third (2001) Field Season*, Edited by Gyles Iannone, Ryan Primrose, Adam Menzies, and Lisa McParland, pp.127-133, Peterborough, Dept. of Anthropology, Trent University.
- Ishihara, Reiko  
2000 An Investigation of the Ancient Maya Ritual Cave Activity at Actun Chechem Ha, Cayo District, Belize. Unpublished Honors Thesis, University of Tsukuba.
- 2001 Report on a Reconnaissance Mission of Actun Uchentzub (Flourcamp Cave), Cayo District, Belize. In *The Western Belize Regional Cave Project: A Report of the 2000 Field Season*, edited by Cameron Griffith, Reiko Ishihara, and Jaime J. Awe, pp. 241-250, Department of Anthropology, Occasional Paper No. 4, University of New Hampshire, Durham.
- McAnany, Patricia A., Kimberly A. Berry, and Ben S. Thomas  
2003 Wetlands, Rivers, and Caves: Agricultural and Ritual Practice in Two Lowland Maya Landscapes. In *Perspectives on Ancient Maya Rural Complexity*, Monograph 49, edited by Gyles Iannone and Samuel V. Connell, pp. 71-82, The Cotsen Institute of Archaeology, University of California, Los Angeles.
- Mirro, Michael and Christina Halperin  
2000 Archaeological Investigations on Ledge 1 of Actun Yaxteel Ahau, Roaring Creek

- Valley, Cayo District, Belize. In *The Western Belize Regional Cave Project: A Report of the 1999 Field Season*, edited by Cameron S. Griffith, Reiko Ishihara, and Jaime J. Awe, pp. 263-280, Department of Anthropology, Occasional Paper No. 3, University of New Hampshire, Durham.
- Mirro, Michael and Vanessa Mirro  
2001 A Report of the 2000 Field Season at the Barton Creek Cave, Cayo District, Belize. In *The Western Belize Regional Cave Project: A Report of the 2000 Field Season*, edited by Cameron S. Griffith, Reiko Ishihara, and Jaime J. Awe, pp. 97-126, Department of Anthropology, Occasional Paper No. 4, University of New Hampshire, Durham.
- Morehart, Christopher T.  
2002 Ancient Maya Ritual Cave Utilization: A Paleoethnobotanical Perspective. Master's Thesis, Department of Anthropology, Florida State University.  
2005 Plants and Caves in Ancient Maya Society. In *Stone Houses and Earth Lords: Maya Religion in the Cave Context*, edited by Keith M. Prufer and James E. Brady, pp. 167-186, University Press of Colorado, Boulder.
- Morehart, Christopher T., David L. Lentz, and Keith M. Prufer  
2005 Wood of the Gods: The Ritual Use of Pine (*Pinus* spp.) by the Ancient Lowland Maya. *Latin American Antiquity* 16(3): 255-274.
- Moyes, Holley  
2001 The Cave as a Cosmogram: The Use of GIS in an Intrasite Spatial Analysis of The Main Chamber of Actun Tunichil Muknal, A Maya Ceremonial Cave in Western Belize. M.A. Thesis, Florida Atlantic University. Boca Raton, FL.  
2002 The Use of GIS in the Spatial Analysis of an Archaeological Cave Site. *Journal of Cave and Karst Studies* 64(1):9-16.  
2004 Changes and Continuities in Ritual Practice at Chechem Ha Cave, Belize: Report on Excavations Conducted in the 2003 Field Season. Report submitted to the Foundation for the Advancement of Mesoamerican Studies, Inc., <http://www.famsi.org/reports>
- 2005 The Sweatbath in the Cave: A Modified Passage in Chechem Ha Cave, Belize. In *Stone Houses and Earth Lords: Maya Religion in the Cave Context*, edited by Keith M. Prufer and James E. Brady, pp. 187-212, University Press of Colorado, Boulder.
- 2006 The Sacred Landscape as a Political Resource: A Case Study of Ancient Maya Cave Use At Chechem Ha Cave, Belize, Central America. Unpublished Ph.D. Dissertation, Department of Anthropology, State University of New York at Buffalo.
- Moyes, Holley and Jaime J. Awe  
1998 Spatial Analysis of Artifacts in the Main Chamber of Actun Tunichil Muknal, Belize: Preliminary Results. In *The Western Belize Regional Cave Project: A Report of the 1997 Field Season*, edited by Jaime J. Awe, pp. 23-36, Department of Anthropology, Occasional Paper No. 1, University of New Hampshire, Durham, NH.  
2000 Spatial Analysis of an Ancient Cave Site. *ArcUser* 3(4):64-68.
- Owen, Vanessa A. and Sherry Gibbs  
1999 Report of Investigations on Ledge 2 at Actun Yaxteel Ahau, Roaring Creek Valley, Belize. In *The Western Belize Regional Cave Project: A Report of the 1998 Field Season*, edited by Jaime J. Awe, pp. 186-204, Department of Anthropology, Occasional Paper No. 2, University of New Hampshire, Durham.
- Pendergast, David M.  
1970 A. H. Anderson's Excavations at Rio Frio Cave E, British Honduras. *Art and Archaeology Occasional Papers* 20, Royal Ontario Museum, Toronto.  
1971 Excavations at Eduardo Quiroz Cave, British Honduras (Belize). *Royal Ontario Museum Art and Archaeology Occasional Paper* 21. Royal Ontario Museum, Toronto.  
1974 Excavations at Actun Polbiche, Belize. *Archaeology Monograph* 1. Royal Ontario Museum, Toronto.

Prufer, Keith M.

- 2002 Communities, Caves, and Ritual Specialists: A Study of Sacred Space in the Maya Mountains of Southern Belize. Ph.D Dissertation, Southern Illinois University, Carbondale.

Reilly III, F. Kent

- 1994 Visions to Another World: Art, Shamanism, and Political Power in Middle Formative Mesoamerica, Department of Art History, University of Texas, Austin.

Rissolo, Dominique A.

- 2001 Ancient Maya Cave Use in the Yalahau Region, Northern Quintana Roo, Mexico. Ph. D. Dissertation, Department of Anthropology, University of California, Riverside.

- 2005 Beneath the Yalahau: Emerging Patterns of Ancient May Ritual Cave Use from Northern Quintana Roo, Mexico. In *In the Maw of the Earth Monster: Mesoamerican Ritual Cave Use*, edited by James E. Brady and Keith M. Prufer, pp. 342-372, University of Texas Press, Austin.

Saturno, William A., Karl A. Taube, David Stuart, and Heather Hurst

- 2005 The Murals of San Bartolo, El Petén, Guatemala, Part 1: The North Wall. *Ancient America* No. 7.

Schwarz, Henry P. and W. J. Rink

- 2001 Dating Methods for Sediments of Caves and Rockshelters with Examples from the Mediterranean Region. *Geoarchaeology* 16(4):355-371.

Stone, Andrea J.

- 1995 Images from the Underworld: Naj Tunich and the Tradition of Maya Cave Painting. University of Texas Press Austin.

Tarn, Nathaniel and Martin Prechtel

- 1986 Constant Inconstancy: The Feminine Principle in Atiteco Mythology. In *Symbol and Meaning beyond the Closed Community: Essays In Mesoamerican Ideas*, edited by Gary Gossen, pp. 173-184, The Institute for Mesoamerican Studies, The University at Albany, State University of New York, Albany.

Taschek, Jennifer T., and Joseph W. Ball

- 1999 Las Ruinas de Arenal: Preliminary Report on a Subregional Major Center in the Western Belize Valley (1991-1992 Excavations). *Ancient Mesoamerica* 10:215-235.

Taube, Karl A.

- 1992 The Major Gods of Ancient Yucatan. *Dumbarton Oaks*, Washington, D.C.

- 1995 The Legendary Past: Aztec and Maya Myths. University of Texas Press, Austin.

---

## 5 ON DROUGHT AND THE “COLLAPSE” OF THE ANCIENT MAYA

Gyles Iannone

---

*This paper critically evaluates the “drought hypothesis,” which is currently the most popular explanation for what has long been termed the Maya “collapse.” It is argued that the drought hypothesis is an overly simplistic explanation for what was clearly a very complex event. The paper contends that, although a series of severe droughts – beginning in the mid-8<sup>th</sup> century, and culminating in the early 10<sup>th</sup> century – may have provided a succession of final blows to the institution of kingship at many southern lowland centers, the roots of the political and economic collapse can actually be traced back to the beginning of the 8<sup>th</sup> century, if not earlier. The paper concludes that the Maya collapse was primarily an internal, sociopolitical process. Data from various centers in Belize are used to support this conclusion.*

### Introduction

Over the past few decades, archaeologists – along with a whole range of scholars from other disciplines – have increasingly turned to climatic data in their efforts to enhance our understanding of the ancient Maya “collapse” (ca. 750-1050 A.D.). Some of the earliest efforts to tie the Terminal Classic decline to climatic change were those of Dahlin (1983), Folan et al. (1983), Gunn and Adams (1981) and Messenger (1990). In the last ten years in particular, evidence for a series of devastating droughts has been building (see Robichaux 2002:341). Importantly, this data has emerged from a range of independent studies. The most significant of these are critically discussed here. It is concluded that, although droughts likely played a key role in the collapse, it is apparent that many of the Maya city-states had already entered a period of power sharing and decentralization prior to the onset of any debilitating climatic changes. Droughts are thus best viewed as components of a multi-causal explanation for the collapse.

### The Rio Candelaria Discharge Model

In 1994 and 1995, one of the first convincing arguments for a drought-

triggered collapse was presented by Joel Gunn and his colleagues (Gunn et al. 1995), who examined the annual discharge rate of the Rio Candelaria over a thirty-two year period. They then tied the fluctuations in the discharge rate to the “double sea-breeze effect,” which directly affects the intensity of rainy season precipitation. Significantly, Gunn et al. were able to project their model back three thousand years, based on the notion that cooler temperatures in the northern hemisphere resulted in less precipitation in the Yucatán. One of their key conclusions was that there was an extended period of drought between 750 and 950 A.D. – precisely the time of the infamous collapse.

### Yucatán Lake Cores

Support for the proposed collapse-era drought was provided in 1995, when David Hodell and his colleagues (Hodell et al. 1995) presented the first results from their analysis of sediment cores obtained from a series of lakes located in the central Yucatan Peninsula. The first core was derived from Lake Chichancanab, “...the largest closed-basin lake in Yucatán, Mexico” (Hodell et al. 1995:391). The core was examined with the specific goal of



**Figure 1.** Map of the Maya subarea showing the location of sites mentioned in the text

documenting temporal fluctuations in sediment composition and oxygen isotope ratios. Associated C14 dates were employed to date the recognized climatic changes. These data confirmed that the period between 800 and 1000 A.D. was the driest period of the middle to late Holocene epoch. More importantly, the analysis suggested that the “peak” of the “arid period” occurred at 922 A.D. (Hodell et al. 1995:393) – a date which fit squarely within the generally accepted collapse sequence.

The following year, the same research team outlined similar findings based on the analysis of a sediment core from Lake Punta Laguna, located north of Lake Chichancanab (Curtis et al. 1996). In this study the authors were able to isolate three “exceptionally arid events centered at... 862, 986, and 1051 A.D.” (Curtis 1996:37). Once again, these dates articulated well with the established timeframe for the collapse.

In a later article, published in 2001, Hodell et al. (2001) revisited their Lake Chichancanab data set. Here they were able to document a drought cycle of approximately 208 years, each comprised of multiple 50-year oscillations. Interestingly, they also provided intriguing evidence to suggest that the drought cycle was linked to a previously documented solar forcing cycle of approximately 206 years; this led them to postulate that solar forcing may in fact be the root cause of global droughts (see also de Menocal 2001:668). Hodell and his colleagues were also able to fine-tune their drought chronology. Their new assessments suggested that the key dry period for those interested in the Maya collapse extended from 750 to 1025 A.D. (Hodell et al. 2001:1368). Two periods of peak aridity were recognized in this analysis, one centered on 800 A.D., the other 1020 A.D.

### **“The Great Maya Droughts”**

In his 1994 Ph.D. dissertation, and his 2000 book entitled *The Great Maya Droughts*, Richardson Gill presented a model that was firmly grounded in the notion that drought, and the resulting famine, was solely responsible for the ancient Maya collapse (Gill 1994:456). Once again, Gill relied on the basic premise that colder temperatures in Europe and North America were indicative of less precipitation, and thus droughts, in the Maya subarea. Specifically, Gill postulated that meteorological data and tree-ring records both suggested that the period between 790 and 950 A.D. was punctuated by three severe droughts. Gill then articulated this climatic data with the dates for the last erected monuments at the largest southern lowland centers to create a model for three phases of drought and abandonment, which he suggested occurred between 760-810, 810-860, and 860-910 A.D. Gill (2000:320-321) subsequently marshaled John Lowe’s (1985) seminal work on the collapse to propose a model of a patterned decline with “a slight linear collapse from southwest to northeast.” More specifically, Gill (2000:384) suggested that the collapse began first in the southwestern portion of the southern lowlands. This was followed by collapses in the southeastern region, and finally the central region. In the most apocalyptic conclusion of all of the drought proponents, Gill (1994:476; 2000:387) proposed that most of the Maya of the southern lowlands perished from thirst and starvation during the Late Classic to Terminal Classic transition.

### **The Cariaco Basin**

Finally, recent support for the drought hypothesis has come from the analysis of laminated sediments cores from the Cariaco Basin, located off the northern coast of Venezuela (Haug et al. 2003;

Peterson and Haug 2005). Here, the researchers focused their attention on sediments that were deposited between 700 and 950 A.D., with the expressed purpose of examining the environmental characteristics of the Late Classic to Terminal Classic transition. In the end, they were able to document a century-long decline in precipitation that was punctuated by periods of severe drought lasting between three to nine years, on average. Of particular significance were multiyear drought periods, which the authors projected to have occurred around 760, 810, 860, and 910 A.D. This pattern of a 40 to 50 year peak drought cycle corresponded with the results of the Yucatán lake core study discussed previously (Haug et al. 2003:1734). The dates also fit nicely with the three phases of abandonment proposed by Gill (Peterson and Haug 2005:327).

### **Summary**

In summary, the diverse studies discussed above all point to the fact that the period between 800 and 1000 A.D. was likely the driest time span in the mid to late Holocene epoch. There is, however, considerable divergence of opinion with respect to the timing of the episodes of peak aridity – or multiyear droughts –, which are postulated to have occurred during this dry period. In the end, the different data sets do suggest that drought was likely a key component in the “collapse” sequence (see also Robichaux 2002:341). Nevertheless, as Hubert Robichaux (2002:341) cautions, one important question remains to be answered: “Was the Terminal Classic drought so severe that the Maya succumbed directly because of its effects alone, as Gill has suggested? Or was drought one of a number of debilitating factors that combined in some way to fell the Maya?”

## **A Critical Assessment of the Drought Hypothesis**

Over the years, a variety of criticisms have been leveled against the drought hypothesis. Some of these are easily addressed. Others, however, are much more debilitating. Only the more pertinent criticisms are discussed here.

### **The Philosophical Dilemma: Unicausal versus Multicausal Explanations**

In general terms, the unicausal basis of the drought hypothesis – particularly as it has been proposed by Gill (2000) – has led some to characterize it as a form of environmental determinism (see Gunn et al. 2002:79). Gill (2000:25) himself recognizes the unicausal qualities of the model, but defends these on philosophical grounds by arguing that: “Sometimes, unicausal or monocausal explanations, in fact, fit the available data better than do multicausal ones” (Gill 2000:25). Nevertheless, Gill does acknowledge that, when it comes to the ancient Maya collapse, complex, multicausal models have always been favored over unicausal “engines” (Gill 2000:363). In fact, both the complexity of the problem, and the diverse nature of the database itself, does imply that multicausal models likely have the greatest explanatory potential (see various papers in Demarest et al. 2004b; Iannone 2005).

Along these lines, Peter de Menocal (2001:669) asks the question: “How did past cultures respond to the longer, multi-century scale climate changes that punctuated late Holocene climate?” He concludes that, “In all cases, the observed societal response reflects an interaction between human cultural elements (socioeconomic, political, and secular stresses) and persistent multi-century shifts in climate.” The various non-archaeologists who have been instrumental in generating the climatic data that provides the empirical foundation for the drought

hypothesis concur. For example Haug et al. (2003:1734) surmise that: “No one archaeological model is likely to capture completely a phenomenon as complex as the Maya decline.” In their most recent article, Peterson and Haug (2005:328) conclude that: “Although the match between Gill’s drought model and our findings is quite good, we accept that no single cause is likely to explain a phenomenon as complex as the Maya decline.”

### **Environmental Issues**

Some have been critical of the drought hypothesis because the wetter southern lowlands seem to have been affected more adversely than the drier northern zone. This critique is easily dispelled, however, when one considers that the southern lowland city-states were at a disadvantage compared to their northern lowland neighbors because, during arid periods, people living in the latter had access to groundwater, whereas the former were much more reliant on artificial and seasonal water collection facilities (Curtis et al. 1996:45-46; Gill 2000:380; Peterson and Haug 2005:327). As such, the southern lowland city-states were naturally more susceptible to the deleterious affects of drought (see also de Menocal 2001:670; Gill 2000:365-366; Haug et al. 2003:1734; Peterson and Haug 2005:322-324, 327).

Others have disputed the efficacy of the drought theory because its effects appear to have been “patchy” in nature – some centers being hit hard, whereas neighboring centers emerge virtually unscathed, or they appear to suffer the effects of drought much later in the collapse sequence. This scenario is, however, characteristic of drought affected regions (Gill 2000:380). According to Gunn et al. (2002:80), “...there is a range of annual wetness and dryness. These differences occur not only on a yearly basis: at times they extend as droughts lasting

several years or even decades. Sometimes they strike part of the Yucatán Peninsula or highlands but not others. Thus, climatic differences occur through space and time at a number of scales” (see also Haug et al. 2003:1734). This may explain why evidence for drought has been found in some parts of the Yucatán Peninsula, but not others.

Finally, some scholars have been critical of the actual data sets employed by the proponents of the drought model. For example, Demarest (2001:107) stresses that, “the explanatory potential of global climatic studies...are no substitute for carefully constructed regional archaeological and ecological research.” Robichaux (2002:341) contends that Gill’s “method of analysis” is problematic because he “tends to make his results applicable to the entire Maya lowlands.” He also cautions that, “The Rio Candelaria model and the lake-sediment studies, by their nature, have the greatest applicability to the specific areas that were investigated but possibly have applications to the broader lowland area” (Robichaux 2002:341). Even some of the scholars who have contributed to the formulation of the drought model include caveats, such as the following: “The paleoclimatic record from Lake Chichancanab alone cannot support the case for regional Late Classic drying...Although the sediment record from Chichancanab suggests a causal link between climate and the Late Classic collapse, the region inhabited by the Maya was geologically, ecologically and climatologically diverse. The response of climate to any single forcing factor may not have been the same throughout the Maya region and so the pattern of cultural change may not have been uniform” (Hodell et al. 1995:393-394).

### **Issues of Culture History**

The drought hypothesis meets one of its biggest challenges when it is considered

alongside archaeologically generated culture history. One of the problems with the drought chronology is that the  $\pm$  ranges for the dates of peak aridity are rarely worked into the analysis, and they are therefore somewhat “misleading” (Peterson and Haug 2005:327). We must keep this in mind when we attempt to mesh the culture history and drought data sets.

Another key issue is that it appears as though the southern Maya city-states were already experiencing socioeconomic and sociopolitical problems before the first peak drought period occurred (Demarest 2004; de Menocal and Cook 2005:S92). Haug et al. (2003:1733) argue that a “climatically favorable (relatively wet)” period between 550 and 750 A.D. led to rapid growth in population, a factor that would have made the southern lowland city-states particularly vulnerable to multiyear droughts (see also Gill 2000:360). John Lowe (1985:204-205) confirms that there was a rapid expansion in the number of Maya centers prior to 751 A.D., particularly in the central portion of the southern lowlands (see also Demarest 2004:119). After this the “death rate” of centers increased, even though the number of sites that erected monuments increased. Key here is that, even though more centers were erecting monuments, the number of monuments erected actually declined. Taken together, these data suggest that the city-states of the southern Maya lowlands had entered a period of political decentralization as early as 750 A.D. (Iannone 2005).

Another data set actually suggests that the period of decentralization likely began before 750 A.D. The evidence for this can be found in the political and/or royal titles employed by the Maya. Beginning early in the 8<sup>th</sup> century, not only did the number of different titles increase, but their frequency of use in inscriptions also rose dramatically (see Jackson 2005). This

suggests that a degree of power sharing coincided with the political decentralization referred to above (Culbert 1991:325-326; Iannone 1996:447, 2005; Stuart 1993:336). Importantly, Culbert (1991:326) notes that the proliferation of royal titles is particularly telling, as this practice occurs in both China (Fash 1985), and Mesopotamia (Yoffee 1977), during periods of sociopolitical instability leading up to the demise of royal dynasties. Of utmost importance to the current discussion is the fact that these aforementioned signs of weakness were manifest prior to any projected droughts.

An additional culture historical fact that the drought hypothesis cannot explain is why the city-states of the Petexbatun region fell prior to the earliest documented drought? As Demarest (2001:106) points out, “the major kingdoms in the western Petén region of Guatemala disintegrated into warfare and migrations beginning in the mid-eighth century, extending back the collapse process.” He goes on to state that, “The Petexbatun region, where much recent collapse research has been conducted, already was largely depopulated by the beginning of the ninth century, when Gill’s proposed volcanically induced droughts would have just begun.” In terms of other weaknesses of the drought hypothesis, Robichaux (2002:341-342) underscores that Gill’s use of “last monuments” to date the fall of individual Maya centers has two main flaws: 1) the monument data suggests that the centers did not fall simultaneously, but rather over a protracted, 150 year period. For Robichaux, this contradicts the drought hypothesis. Specifically Robichaux argues that, regardless of the different hydrological settings, and the patchy nature of droughts themselves, the long time span suggests that other causal factors must also have been at play – the drought was thus not “overwhelming;” 2) the three phases of drought, from southwest, to southeast, and

then to the central portion of the southern lowlands, also flies in the face of the hydrological backdrop. As Robichaux points out, the fact that southwestern centers such as Piedras Negras and Yaxchilan – both of which are located along the prolific Usumacinta drainage – declined before more aquatically-challenged centers in the southeast and central regions, also calls into question the underpinnings of Gill’s drought hypothesis. Even Gill (1994:327) indicates that there is no evidence to suggest that the Usumacinta ever went dry. Robichaux (2002:344) concludes that the issues discussed above “suggest the likelihood that cultural factors and events also played important roles in the development of the collapse.”

It should be noted here that Gill’s reliance on “last monuments” to build his collapse chronology is also problematic because the failure to erect monuments cannot be used as a proxy for total abandonment (see also Haug et al. 2003:1734; Peterson and Haug 2005:327). Ultimately, the cessation of monument erection simply signifies when the rulers of a particular center stopped erecting monuments. In other words, it indicates when Late Classic style kingship institutions died. It does not, however, specify when centers were abandoned.

Finally, Gill’s (1994, 2000) study must also be considered flawed because he only includes upper tier centers in his analysis (Haug et al. 2003:1734; Peterson and Haug 2005:327). Centers without monuments need to be worked into the collapse equation, or our perspective on the collapse will continue to be biased towards the most politically prolific centers. This also creates a situation wherein it becomes easy to mistake the demise of the elite sector of Maya society for the collapse of society as a whole.

### **Drought, Famine, Severity, and Cultural Response**

The final set of criticisms revolves around the effects that the droughts had when they did arrive. According to Nancy Farris (1984), less brutal droughts during the ethnohistoric period claimed the lives of up to 50% of the indigenous population. The situation may have been even more devastating for the Terminal Classic Maya. Unfortunately, actual evidence for such a deadly famine is lacking, something that Gill (2000:328) himself admits. Of significance here is the fact that a number of environmental and biological studies conducted in the Petexbatun region – the area that was hit earliest and hardest by the “collapse” – have failed to find any evidence for drought-induced famine “before, during, or after the late eighth century political disintegration...” (Demarest 2001:106). Demarest concludes that evidence such as this, and similar data from other parts of the southern lowlands, provide a serious challenge to Gill’s proposed “simultaneous,” famine-caused, ninth century collapse.

There are also problems with Gill’s (2000:350) assertion that, as a result of the severe droughts, “Most sites in the southern and central lowlands were abandoned after the collapse. Those few sites not abandoned had reduced populations” (Gill 2000:350). This is clearly not the case in all instances. Belizean centers such as Lamanai (Pendergast 1986), and Caracol (D. Chase and A. Chase 2004), do not appear to have been hit by severe demographic changes during the periods when the droughts are postulated to be most severe. Our current research at Minanha also suggests that there was a sizable population at that center during the Terminal Classic. This data alone calls into question the actual severity of the Terminal Classic droughts. Nevertheless, it is still plausible that these eastern centers exhibit strong Terminal Classic settlement

simply because of the patchy, and protracted, nature of the droughts.

It is also possible that the apparent demographic resilience of these eastern centers actually foreshadows their impending doom. In particular, it may reflect severe demographic problems elsewhere in the southern lowlands. The events in the Petexbatun are especially important to the overall collapse sequence because the 8<sup>th</sup> century migrations from this troubled region may have affected the stability of the city-states located to the east (Demarest 2004:119; Demarest et al. 2004a: 568). Eventually, due to increasing populations, the southern lowland Maya may have been unable to react effectively to the new series of droughts because they may not have been able to migrate into new areas to ease the pressure (Peterson and Haug 2005:328).

Importantly, our own research at Minanha actually indicates that in the early part of the 8<sup>th</sup> century migrants were already moving into areas which had previously only supported low population densities, and which had markedly less agricultural potential, than the areas from which they had originated (Iannone 2005). In the Minanha case, the evidence suggests that migrants likely came from the area around Caracol – if not Caracol itself – and they may have included both peasants and elites. The fact that these migrants established a new royal court in an area that had never supported one before implies that the Maya socioeconomic and sociopolitical systems were likely already stretched to their limits before the Terminal Classic period, and likely before the onset of the droughts.

Another archaeological data set that presents challenges for the drought hypothesis is the infilling and/or termination of elite residential courtyards prior to total site abandonment. Excavations at Belizean centers such as Dos Hombres, Blue Creek,

and possibly Punta de Cacao, have exposed large Terminal Classic deposits of ceramic sherds and other items on the floors and stairs associated with elite courtyards (Adams et al. 2004:337). These deposits, some of which block the entrances to the courtyards themselves, are thought to represent acts associated with the “termination” of the elite inhabitants themselves, as opposed to the actual architectural features that they are associated with (Adams et al. 2004:338). Even more dramatic is the total infilling of royal residential courtyards, and their associated throne rooms and residential buildings, during the early part of the Terminal Classic period. This practice has been recorded at La Milpa (Hammond 1999a, 1999b; Hammond and Thomas 1999), Lamanai (Graham 2004), and Minanha (Iannone 2005, 2006).

The aforementioned data provide a serious challenge to Gill’s model of drought-induced famine. For example, Gill (2000:374) argues that, “Famine is generally a class affliction. It hits the poor hardest and first...The disintegration begins, then, with the lowest levels of society, including the peasants, and it proceeds from the bottom up.” Elsewhere, he surmises that, “In the case of the Maya, due to the length and severity of the droughts, the flow of food and water was shut off, the people died from hunger and thirst, and the social system collapsed from the bottom up” (Gill 2000:371). The data presented above, however, suggests that the exact opposite happened in the Maya case. The first segment of society to meet their demise was apparently the elite, and particularly the royalty. That the surviving communities were still relatively strong is implied by the amount of labor and organization that went into the various infilling and termination events.

## Conclusions

Gill (2000:363-368) argues that the collapse was not the result of bad managerial skills – it was unpredictable and unavoidable. The collapse was thus an external process in its entirety (2000:367). I disagree. The data suggests that – as is true in almost every other example of collapse – the ancient Maya of the southern lowlands had likely put themselves in a situation that left them highly vulnerable to adverse climatic change long before the onset of “the great Maya droughts.” For this reason, I argue here that the current temporal and spatial data sets from the Late Classic to Terminal Classic era imply a secondary role for climatic factors, such as drought, in the fall of the southern lowland city-states (Demarest et al. 2004a: 568). Specifically, there is considerable evidence to suggest that before the Maya of the southern lowlands would have felt any of the effects of drought, this portion of the Maya subarea had likely already entered a period of political fragmentation. This was possibly stimulated by economic stresses brought on by migrations, population increases, concomitant declining agricultural yields, increased competition, and in some cases endemic warfare. When the droughts did hit, their effects were difficult to overcome because the economic and political power-bases of the various rulers had already been severely eroded. The subsequent failure of the water managements systems during periods of severe drought would have only served to further undermine the efficacy of the rulers who had always proclaimed ideological, political, and economic control over such resources (Lucero 2002).

In conclusion, I concur with others who have argued that: “A ‘one drought fits all’ model seems too simplistic, given that the collapse apparently happened at different places at different times, while affecting

some centers hardly at all” (Peterson and Haug 2005:326). Nevertheless, I do agree that the “great Maya droughts” likely provided the coup de grace – the final killing blow – for many of the city-states in the southern Maya lowlands. However, I wish to stress that these city-states, and their rulers, were already highly vulnerable to such a blow. The writing was on the wall, so to speak, long before the rains stopped coming.

*Acknowledgements.* My gratitude is extended to the Social Sciences and Humanities Research Council of Canada for their continued support of the Minanha research upon which this paper is partially based. I also wish to acknowledge the Institute of Archaeology in Belize for hosting the annual symposium during which the ideas discussed herein were first presented. The final paper has benefited from discussions with a number of individuals, including John Morris, Jaime Awe, Arlen Chase, Lisa Lucero, Norbert Stanchly, Claudia Zehrt, Carmen McCormick, Emma Dunkley, Jesse Phillips, Matthew Mosher, Trudy Kirschner, Jason Seguin, Rachel Dell, Natalie Thornhill, Anthony Beardall, Joe Martinez, and Lazaro Martinez. Many thanks are also extended to Miriam Khalil, and both Landy and Erva Espot, for the technical, and nutritional, support they provided during the writing of the conference paper upon which this chapter is based. The errors in fact and logic that remain in the final product are fully attributable to the author.

## References Cited

Adams, Richard E. W., Hubert R. Robichaux, Fred Valdez Jr., Brett A. Houk, and Ruth Mathews

- 2004 Transformations, Periodicity, and Urban Development in the Three Rivers Region. In *The Terminal Classic in the Maya Lowlands*, edited by Arthur A. Demarest, Prudence M. Rice, and Don S. Rice, pp.

324-341. University of Colorado Press, Boulder.

Chase, Diane Z., and Arlen F. Chase

- 2004 Hermeneutics, Transitions, and Transformations in Classic to Postclassic Maya Society. In *The Terminal Classic in the Maya Lowlands*, edited by Arthur A. Demarest, Prudence M. Rice, and Don S. Rice, pp. 12-27. University of Colorado Press, Boulder.

Culbert, T. Patrick

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

Curtis, Jason H., David A. Hodell, and Mark Brenner

- 1996 Climate Variability on the Yucatan Peninsula (Mexico) during the Past 3500 years, and Implications for Maya Cultural Evolution. *Quaternary Research* 46:37-47.

Dahlin, Bruce H.

- 1983 Climate and Prehistory on the Yucatan Peninsula. *Climate Change* 5:245-263.

Demarest, Arthur A.

- 2001 Climate Change and the Classic Maya Collapse: The Return of Catastrophism. *Latin American Antiquity* 12:105-107.

- 2004 *The Ancient Maya: Rise and Fall of a Rainforest Civilization*. Cambridge, New York.

Demarest, Arthur A., Prudence M. Rice, and Don S. Rice

- 2004a The Terminal Classic in the Maya Lowlands: Assessing Collapses, Terminations, and Transformations. In *The Terminal Classic in the Maya Lowlands*, edited by Arthur A. Demarest, Prudence M. Rice, and Don S. Rice, pp. 545-572. University of Colorado Press, Boulder.

Demarest, Arthur A., Prudence M. Rice, and Don S. Rice (editors)

- 2004b *The Terminal Classic in the Maya Lowlands*. University of Colorado Press, Boulder.

deMenocal, Peter B.

- 2001 *Cultural Responses to Climate Change During the Late Holocene. Science* 292: 667-673.
- deMenocal, Peter B., and Edward R. Cook  
2005 Perspectives on Diamonds' "Collapse: How Societies Choose to Fail Or Succeed." *Current Anthropology* 46: S91-S92.
- Fash, William L.  
1985 The Evolution of the Copan Polity. Paper presented at the 50<sup>th</sup> Annual Meeting of the Society for American Archaeology, Denver.
- Farriss, Nancy M.  
1984 *Maya Society Under Colonial Rule*. Princeton University Press, Princeton.
- Folan, William J., Joel Gunn, Jack D. Eaton, and Robert W. Patch  
1983 Paleoclimatological Patterning in Southern Mesoamerica. *Journal of Field Archaeology* 10:453-468.
- Gill, Richardson B.  
1994 *The Great Maya Droughts*. Unpublished Ph.D. dissertation, Department of Anthropology, University of Texas, Austin.  
  
2000 *The Great Maya Droughts*. University of New Mexico Press, Albuquerque.
- Graham, Elizabeth A.  
2004 Lamanai Reloaded: Alive and Well in the Early Postclassic. In *Research Reports in Belizean Archaeology, Volume 1*, edited by Jaime Awe, John Morris, and Sherilyne Jones, pp. 223-241. Institute of Archaeology, National Institute of Culture and History, Belmopan, Belize.
- Gunn, Joel, and Richard E. W. Adams  
1981 Climatic Change, Culture, and Civilization in North America. *World Archaeology* 13:87-100.
- Gunn, Joel D., William J. Folan, and Hubert R. Robichaux  
1995 A Landscape Analysis of the Candelaria Watershed in Mexico: Insights into Paleoclimate Affecting Upland Horticulture in the Southern Yucatan Peninsula. *Geoarchaeology* 10:3-42.
- Gunn, Joel D., Ray T. Matheny, and William J. Folan.  
2002 Climate-Change Statistics in the Maya Area: A Diachronic Analysis. *Ancient Mesoamerica* 13:79-84.
- Hammond, Norman  
1999a A Pillar of State... Majestic, Though in Ruin: The Royal Acropolis of La Milpa. *Context* 14(1):11-15.  
  
1999b A Maya Throne Room at La Milpa. Pre-Columbian Art Research Institute Newsletter 28:12-13.
- Hammond, Norman, and Ben Thomas  
1999 Another Maya Throne Room at La Milpa. *Context* 14(1):15-16.
- Haug, Gerald H., Detlef Günther, Larry C. Peterson, Daniel M. Sigman, Konrad A. Hughen, and Beat Aueschilmann  
2003 Climate and the Collapse of Maya Civilization. *Science* 299:1731-1735.
- Hodell, David A., Jason H. Curtis, and mark Brenner  
1995 Possible Role of Climate in the Collapse of Classic Maya Civilization. *Nature* 375:391-394.
- Hodell, David A., Mark Brenner, Jason H. Curtis, and Thomas Guilderson  
2001 Solar Forcing and Drought Frequency in the Maya Lowlands. *Science* 292:1367-1370.
- Iannone, Gyles  
1996 *Problems in the Study of Ancient Maya Settlement and Social Organization: Insights from the A Minor Center of Zubin, Cayo District, Belize*. Unpublished Ph.D. dissertation, Institute of Archaeology, University College London, London.  
  
2005 The Rise and Fall of an Ancient Maya Petty Royal Court. *Latin American Antiquity* 16:26-44.  
  
2006 Investigations in the Buried Royal Residential Courtyard at Minanha, Belize. In *Research Reports in Belizean Archaeology, Volume 3*, edited by John Morris, Sherilyne Jones, Jaime Awe, and Christophe Helmke, pp. 149-160. Institute of Archaeology, National Institute of Culture and History, Belmopan, Belize.

- Jackson, Sarah E.  
2005 *Deciphering Classic Maya Political Hierarchy: Epigraphic, Archaeological, and Ethnohistoric Perspectives on the Courtly Elite*. Unpublished Ph.D. dissertation, Department of Anthropology, Harvard University, Cambridge.
- Lowe, John W. G.  
1985 *The Dynamics of Apocalypse: A Systems Simulation of the Late Classic Maya Collapse*. University of New Mexico Press, Albuquerque.
- Lucero, Lisa  
2002 *The Collapse of the Classic Maya: A Case Study for the Role of Water Control*. *American Anthropologist* 104:814-826.
- Messenger, Lewis C. Jr.  
1990 *Ancient Winds of Change: Climatic Settings and Prehistoric Social Complexity in Mesoamerica*. *Ancient Mesoamerica* 1:21-40.
- 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.
- Peterson, Larry C., and Gerald H. Haug  
2005 *Climate and the Collapse of the Maya*. *American Scientist* 93:322-329.
- Robichaux, Hubert R.  
2002 *On the Compatibility of Epigraphic, Geographic, and Archaeological Data, with a Drought-Based Explanation for the Classic Maya Collapse*. *Ancient Mesoamerica* 13:341-345.
- Stuart, David  
1993 *Historical Inscriptions and the Maya Collapse*. In *Lowland Maya Civilization in the Eighth Century A.D.*, edited by Jeremy A. Sabloff and John S. Henderson, pp. 321-354. Dumbarton Oaks Research Library and Collection, Washington, D.C.
- Yoffee, Norman  
1977 *The Economic Role of the Crown in the Old Babylonian Period*. Undena, Malibu.

---

## 6 LATE AND TERMINAL CLASSIC OCCUPATION OF PUSILHA, TOLEDO DISTRICT, BELIZE SITE PLANNING, BURIAL PATTERNS, AND COSMOLOGY

Geoffrey E. Braswell

---

*Archaeological investigations at Pusilha, Toledo District, Belize have revealed an occupational history beginning shortly before A.D. 600 and lasting well into the Terminal Classic period. Site planning, architecture, and even burial patterns of the Late and Terminal Classic periods reflect important cosmological principles shared by the Classic Maya. Nevertheless, in southern Belize, a rather distinct and isolated archaeological region, the way these shared principles were manifested was unique.*

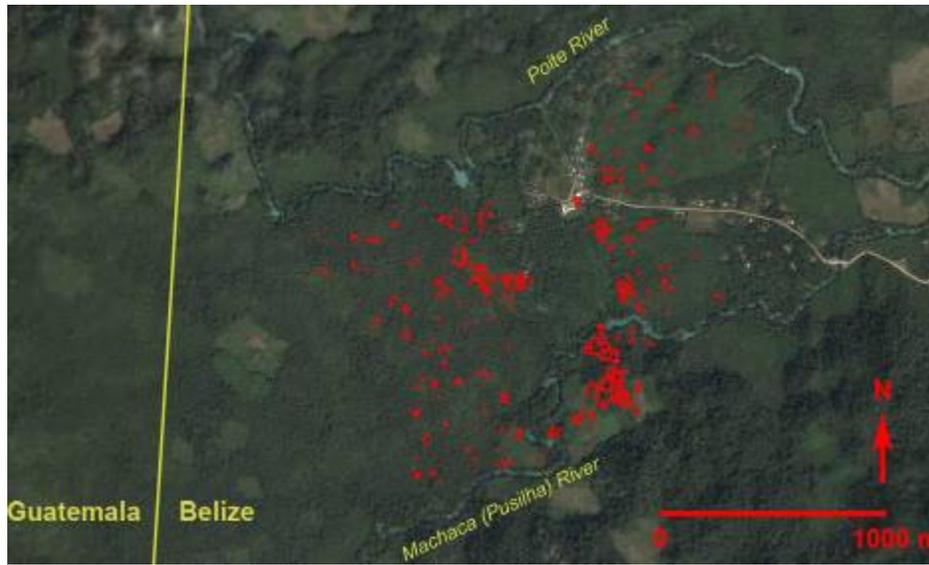
### Introduction

Since 2001, the Pusilha Archaeological Project has investigated ancient economy and political history at Pusilha, Toledo District, Belize (Bill and Braswell 2005; Braswell et al. 2004, 2005; Braswell and Gibbs 2006). Located in the southwestern corner of the country, merely 1,500 m east of the border with Guatemala and within the Q'eqchi' village of San Benito Poite, Pusilha is the largest ancient Maya city of southern Belize (Figure 1). To date, project members have surveyed nearly 3 km<sup>2</sup> of the settlement, which we estimate to have covered approximately 5 to 6km<sup>2</sup> (Figure 2). During survey, 105 structural groups—containing a total of about 500 mound and terrace features—have been mapped. In 2002, we conducted a test-pitting program designed to recover a representative sample of ceramics and other artifacts from different portions of the ancient city. In 2002, 2004, and 2005, we conducted extensive horizontal excavations in seven structures and tested an eighth platform. Throughout our project, Christian Prager, co-director and project epigrapher, has drawn, cataloged, and analyzed the extensive hieroglyphic corpus of the site, consisting of 23 stelae a hieroglyphic stair, an inscribed ballcourt marker, and 18 miscellaneous fragments (Figure 3).

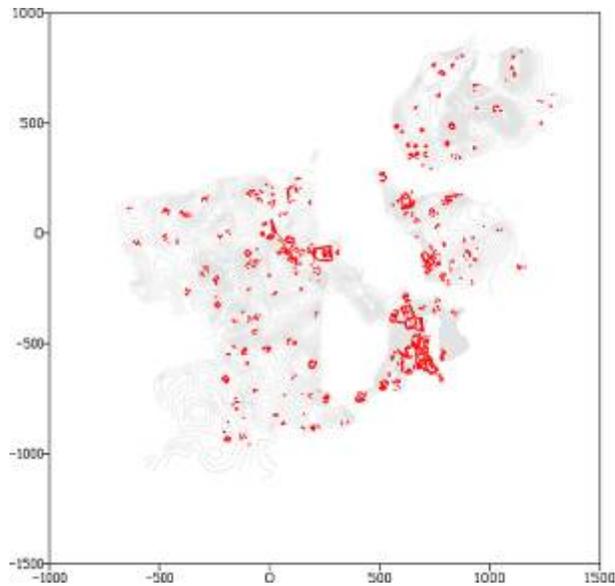
### The Political History of Pusilha

Our interest in Pusilha grew out of research conducted by co-director Cassandra Bill and I at Copan, Honduras. Since the rediscovery of Pusilha in 1927, several scholars have posited a close relationship between the Belizean city and the Copan-Quirigua region. Marcus (1992) argued that Pusilha began as a small and independent chiefdom during the Early Classic, was annexed by the rapidly expanding Copan polity, and later regained its independence during the 8<sup>th</sup> century in a manner very similar to that proposed for Quirigua. But as we have described at previous symposia, Marcus' (1993) Dynamic Model of state formation does not seem to apply to Pusilha quite the way we once thought, and evidence of both political and economic connections with Copan are quite limited. For this reason, we have developed a new narrative for the political history of Pusilha, one that emphasizes local development without foreign control (Braswell et al. 2004).

An evanescent Early Classic presence in the Pusilha region is demonstrated only by pottery collected from the numerous caves found in the hills near the site. Permanent settlement began late in the 6th century A.D., when colonists arrived from the southwestern Peten. Bill's (in Bill and Braswell 2005) analyses reveal the



**Figure 1.** The ruins of Pusilha, Toledo District, Belize. Border with Guatemala is shown in yellow, the modern village of San Benito Poite is visible.



**Figure 2.** Partial map of Pusilha. Contour interval is 1m, scale in meters as measured from datum in Stela Plaza.

strongest ceramic ties with that region (and much stronger ties, in general, with Tepeu sites in the Peten rather than with the southeastern Maya periphery). Moreover, Prager's epigraphic studies have discovered names in the Pusilha corpus that were also used in the Petexbatun region (Braswell et al. 2004, 2005).

Prager has identified 39 individuals in the hieroglyphic corpus of Pusilha. Eight to ten of these are *ajawob* or divine kings. The dynastic founder of Pusilha, whom we call Ruler A and whose name is read **k'awil chan k'inich**, was inaugurated in A.D. 570. He signaled his status as the founder of a dynasty by employing the **och'k'in**

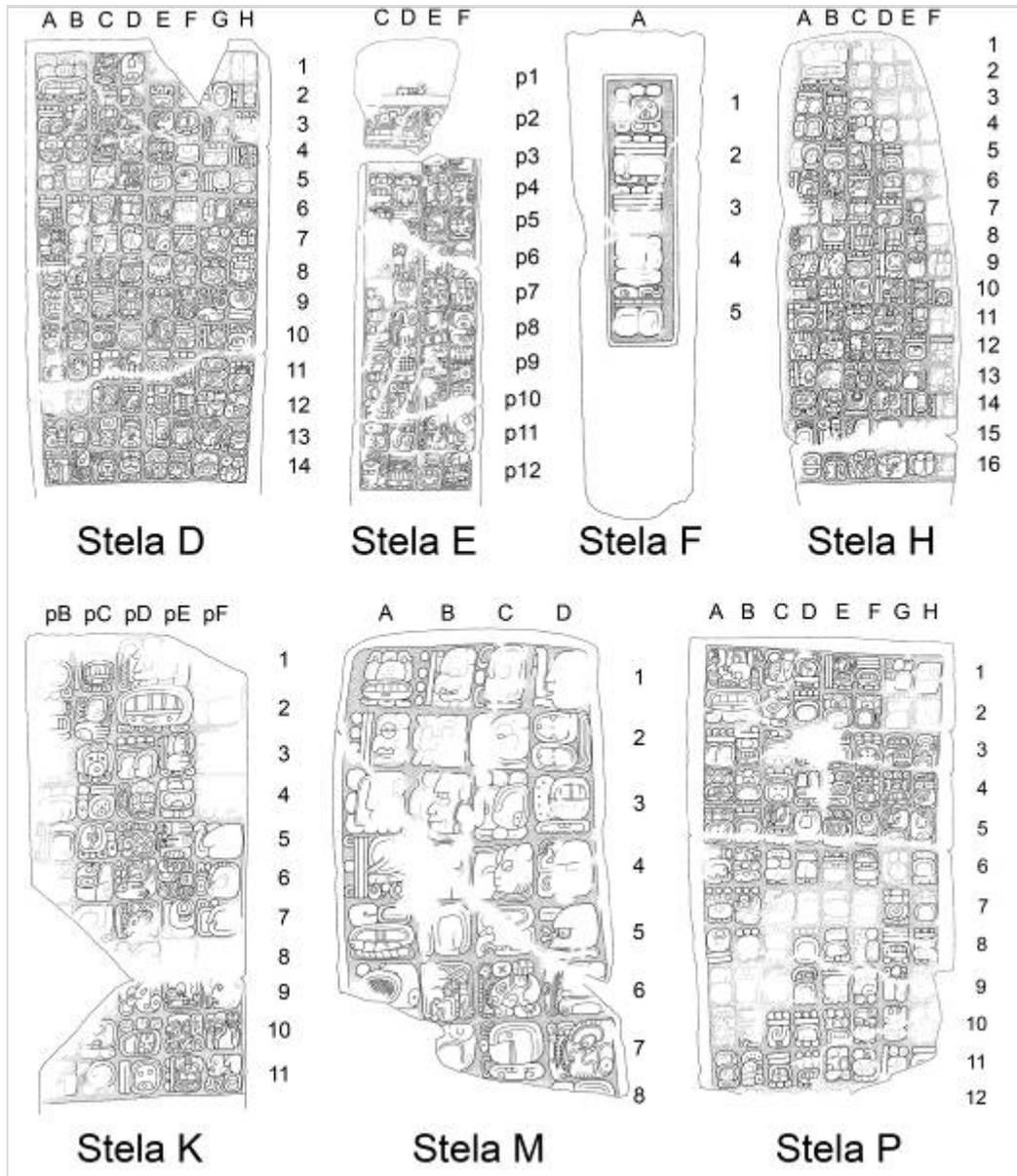


Figure 3. Seven stelae from the Stela Plaza, Pusilha (drawing by Christian M. Prager).

**k'alomte'** title. During his long rule, Ruler A appears to have formed limited economic and ambassadorial ties with Copan. Among the ceramics recovered by the British Museum and by our own project are a small number of sherds that exhibit motifs known principally from western Honduras and eastern El Salvador. Moreover, the dynastic founder of Pusilha named his firstborn son - Pusilha Ruler B - after Copan Ruler 11. But it is important to stress that these ceramic

and epigraphic ties are limited, not only in the frequency of their appearance, but also in time. After the mid-seventh century, evidence for this interaction ceases. Again, ceramic data, as well as obsidian procurement patterns and iconographic evidence, reveal much closer affiliations with the Peten than with any other region throughout the Late Classic period (Braswell et al. 2005).

Ruler F, named **ix ich'ak ... k'inich**, was a female *ajaw* who ruled Pusilha in her own right. It is likely that she ruled only long enough for her son, whose father was not a divine king, to accede to the throne. In an attempt to legitimize his rule, Ruler G, the son and successor of this woman *ajaw*, used the important title **ochk'in k'alomte**, again implying the founding of a new royal line. Ruler G died between A.D. 731 and 751 (Braswell et al. 2005).

Three late monuments describe the actions of two or possibly three later kings of Pusilha who ruled between A.D. 751 and A.D. 798. But the epigraphic record for the end of the Late Classic and the beginning of the Terminal Classic is scanty compared to earlier periods. What happened to the population of Pusilha during the 9th century? To begin with, it is quite possible that population levels dropped at this time, as they did throughout the southern and central Maya lowlands. Nonetheless, excavations have revealed a robust Terminal Classic occupation. During this period, many important groups, including the Gateway Hill Acropolis, remained populated. Moho Plaza, located in the southwestern periphery of the site and where the Hieroglyphic Stair and Ballcourts III and IV are found, was built and occupied at this time. The larger of these two ballcourts is constructed on an East-West axis, an orientation characteristic of the Terminal Classic and later periods. In some ways, Moho Plaza seems to have replaced much of the Late Classic city and conflated within its boundaries architectural features that in earlier times were distributed in different structural groups.

Excavations in the Moho Plaza and elsewhere have revealed significant evidence, in the form of imported Belize Red vessels, of economic ties with western Belize during the Terminal Classic (Braswell et al. 2004). Evidence of

interaction with the Belize Valley is not present before this time. Ceramic forms and a few sherds of Fine Orange ware demonstrate new relations with the northwest Maya region, as does the importation of obsidian from the Mexican source of Zaragoza, Puebla.

It is also distinctly possible that by about A.D. 800, large segments of the population of Pusilha moved to a new location in southern Belize. Lubaantun, a site whose major architecture was built near the end of the Late Classic and a location occupied well into the Terminal Classic period (Hammond 1975), may have been one place where people from Pusilha moved. Certain aspects of the utilitarian ceramic inventory and the practice of making ocarinas in the form of figurines suggest relations between that site and Pusilha. More importantly, the basic site plan of Lubaantun, which also is a hilltop citadel, is very similar to that of Pusilha's Gateway Hill Acropolis. The two most imposing structures of each acropolis are located on their eastern edges and are both west-facing platforms. The western portions of each acropolis consist of a more open arrangement of patio groups built on different levels. The acropolis of Pusilha is similar enough to that of Lubaantun that I suspect the former may have been the architectural inspiration for the latter.

Excavations in a platform at Pusilha that we call the Bulldozed Mound reveal an even later Postclassic occupation (Braswell et al. 2004). Ceramics dating to this period are crude and un-standardized in ways reminiscent of the Ejar complex of Copan, the Newtown complex of the Belize Valley, and various other Early Postclassic ceramic complexes from the southern Peten (Bill and Braswell 2005). Thus, at least small numbers of people occupied Pusilha at a time well after the Maya Collapse of the late 8th and early 9th centuries.

One of the most striking aspects of the political history of Pusilha is that the extensive hieroglyphic corpus never once mentions Tikal, Calakmul, Caracol, Copan, Quirigua, or even nearby Nimli Punit (Braswell et al. 2004). Rival polities and toponyms are named in connection with warfare events, but not one is a place whose location is known. Although many of the original inhabitants of Pusilha almost certainly came from the southern Peten, the lack of references to large and powerful sites in that region suggests that the royal family of Pusilha chose to distance itself from the political machinations that permeated the Maya lowlands during the 7th through 9th centuries. We do not, therefore, interpret the history of Pusilha in terms of Marcus' Dynamic Model (in which the development of state-level organization at Pusilha could be seen as the result of first incorporation into and later fragmentation of the Copan state), nor do we consider to be relevant Martin and Grube's Superstate Model (in which the political affairs of many lowland polities were manipulated in a hegemonic fashion by Tikal or Calakmul). Instead, Pusilha is best viewed as a nonaligned polity that developed independently in a generally under-populated and somewhat peripheral region of the Maya lowlands. That is, we propose that there was a "third way" to Maya political development, one that entailed neither hegemonic nor direct political control. Some years ago, Leventhal (1990) described southern Belize as an archaeological region distinct from the rest of the lowlands. One reason that material culture may have developed in a unique and somewhat divergent manner in southern Belize is that the inhabitants of the region maintained political independence from their larger neighbors throughout the Late Classic period.

### **Site Planning at Pusilha**

I would like to emphasize several aspects of material and ideological culture at Pusilha that link the city in some respects to the Peten, but also help to define southern Belize as a region quite distinct from the rest of the southern and central Maya lowlands. In particular, I would like to stress an aspect of our research that has not yet been described in detail, the results of our settlement survey. I will also discuss several burials excavated by the project with a special emphasis on how they relate to site planning and cosmological principles. The map shown in Figure 2 is still incomplete. The vacant north-south strip running down the center of the map has yet to be surveyed, and contains at least three large groups of structures. Moreover, the limits of the site still need to be defined, particularly on the northern side of the Poite River and towards the Guatemalan border.

Years ago, Morley (1938) noted that one important feature characteristic of inscriptions from southern Belize is that they include erroneous or otherwise distinctive Lunar Series data. In Leventhal's (1990) definition of the southern Belize region, he chooses to focus on architectural features. He notes that the ballcourts of southern Belize tend to be located within walled enclosures that separate the entirety of the ballcourt as well as other auxiliary structures from outlying areas. Leventhal also discusses how natural features of the landscape, particularly hills and large boulders, were incorporated into architectural constructions. The effect, he writes, is rather like a "Hollywood set," consisting primarily of cut-stone facades and a more limited use of fill than is found in many other regions. Such construction is often viewed as a way to save labor. But it is important to stress that the most time-consuming aspect of construction is cutting stone blocks to face structures or natural

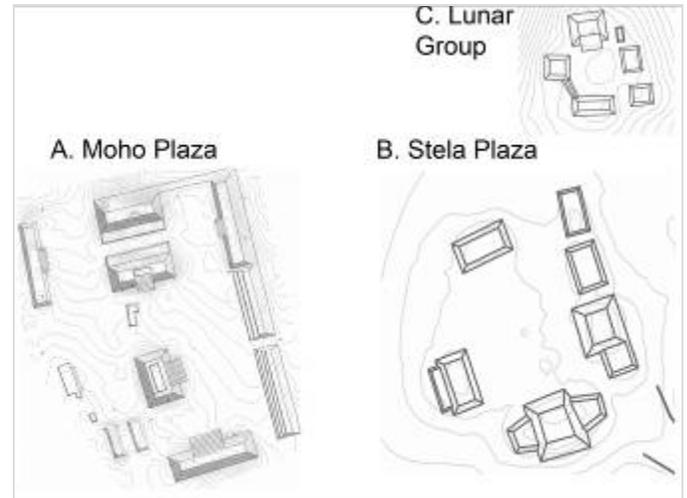
features, not the gathering and placing of fill. Moreover, at Pusilha, the deliberate incorporation of natural features such as boulders into architecture seems to have served a religious function.

Finally, Leventhal (1990) also mentions that tombs in the southern Belize region were often re-used, a pattern also noted at nearby Caracol and at Minanha. Although we have excavated no tombs at Pusilha that were clearly used for sequential burials, at least one major tomb was reopened and resealed, and another elaborate crypt is a secondary burial.

Equally important in defining the southern Belize region are features common at other Maya sites that are lacking or rare in southern Belize. An important and well-known feature of southern Belize architecture is the lack of vaulted superstructures and tombs. A second feature that is quite rare in southern Belize is the E-group or astronomical commemoration group. The paucity of E-groups, many of the best known of which are Late Preclassic in date, may not seem particularly surprising in a region where virtually all known architecture dates to the Late and Terminal Classic periods, but it should be recalled that in the neighboring southern Peten, particularly in the Dolores Valley, Juan Pedro Laporte has discovered and mapped more than a hundred E-groups dating to precisely this period.

Related to the lack of E-groups is a difference in burial patterns. In western Belize and eastern Peten, a common pattern is to place the principal tomb in a pyramidal structure on the eastern edge of a plaza group. In many cases, these “ancestor shrines” are also part of an E-group. In southern Belize, burials are indeed present in and in front of eastern structures. But in many cases these are range platforms that likely supported residences or other buildings. Moreover, important burials and

offerings are also found associated with the northern, southern and western structures of a group.



**Figure 4.** Three “Special Function Groups” at Pusilha, shown at the same scale. Contour interval is 1 m, except in (A) where it is 20 cm.

#### “Special Function Groups” at Pusilha

Survey has revealed a distinct architectural pattern at Pusilha, what I call the “Special Function Group” (Figure 4). Unlike habitation groups, built around one or more open patios oriented with the natural topography, Special Function Groups are built on a NNW-SSE alignment. As Ivan Šprajc (personal communication, 2004) has noted, this particular alignment is quite unusual for Mesoamerica; a more typical pattern is NNE-SSW. The archetypal pattern for a Special Function Group has three structures defining the eastern side of a patio. The northern two of these eastern platforms may have supported range structures. The southernmost (not the central) of the eastern platforms is generally the highest, and may be square rather than rectangular in plan. The two principal structures (often square at the base) are located to the north and south of the patio, and a single range structure is found on the western edge of the platform. The western side of the patio is quite open in comparison

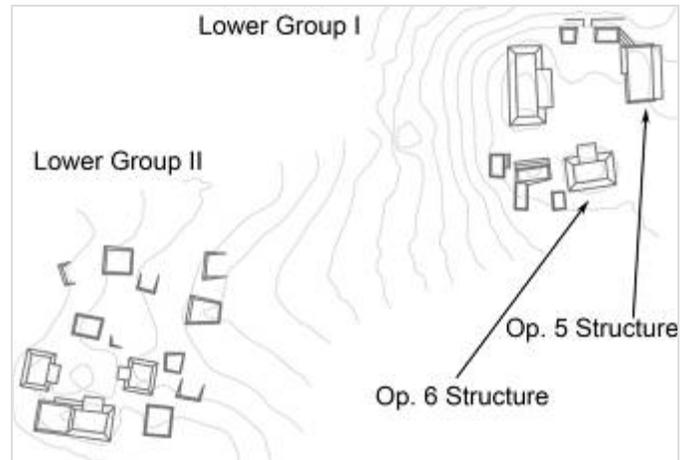
to the eastern side. At least three Special Function Groups are known at Pusilha: The Lunar Group, near the northeast corner of our map, the Stela Plaza, and the Moho Plaza, located just off the far southwest corner of the map.

Although built on the same axis and with the same general plan as the Stela Group and Lunar Group, the Moho Plaza is somewhat aberrant from the other two examples in four respects. First, the northern principal structure is an east-west ballcourt rather than a pyramidal mound. Second, the southern principal structure, although quite high, is rectangular and contains a hieroglyphic stair. Third, an additional large structure is located in the center of the open plaza. Finally, the Moho Plaza is built on low-lying terrain rather than on a commanding hilltop.

I have called these “Special Function Groups” not only because of their layout, but also because of the artifacts found in the two examples where we have conducted test-pitting operations. First, and most obvious, the Moho Plaza and the Stela Plaza contain carved sculpture with hieroglyphic inscriptions. In addition to the Hieroglyphic Stair, three carved ballcourt markers were found in the ballcourt. Second, ceramics from these groups are generally not utilitarian in character. The large and numerous jars, *tinajas*, basins, *ollas*, and serving plates found in most of our excavations are uncommon by comparison in the Stela Group and Moho Plaza. Instead, incense-burner fragments are quite common.

Third, animal bones and river-snail shells -nearly as ubiquitous as pottery sherds in residential areas of the site - are entirely absent from our collections from the Stela Plaza and Moho Plaza. Thus, the preparation and consumption of food do not seem to have been important functions in the two Special Function Groups where we have conducted excavations. One conjecture that

needs to be tested through further survey is that the Special Function Groups somehow indicate the corners and center of the site, in a manner similar to the U-shaped groups of Copan.



**Figure 5.** Lower Groups I and II, located 150 m southwest of the Gateway Hill Acropolis. Contour interval is 1 m.

### Directionality and Height

Although the Special Function Groups of Pusilha are built on a plan and according to an axis not known outside of southern Belize, other more complex aspects of site planning do reflect cosmological notions shared throughout the Maya lowlands (Braswell et al. 2004, 2005). The clearest example can be seen in how the Stela Plaza Group articulates with Ballcourt I. Here, the Stela Plaza, with its row of monuments depicting rulers and describing their exploits, is located to the northwest and is conceptual linked to the heavens, divine kingship, and the northern side of the world. For the Maya, ballcourts were associated with death, the south, and the underworld. The Stela Group is connected to the ballcourt by a 150m long *sacbe*. On both sides of the middle of the *sacbe* and at an intermediate height are residential groups that may represent our own world. The *sacbe*, therefore, connects and separates the three worlds much like the World Tree of

Maya mythology. An important concept of the plan of this part of the site is that not only does it reflect Maya cosmological notions of directionality and the universe, but also it expresses these notions in three dimensions. The Stela Group (representing the heavens) is some 12m higher on the hill than Ballcourt I (representing the underworld), and the residential groups are at an intermediate altitude.

### Other Important Groups

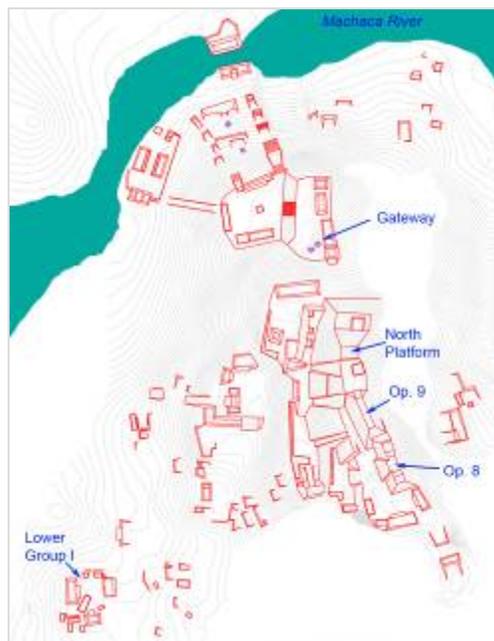
At least three other groups share some but not all of the features of the Special Function groups. In these cases, the portion of each larger group that shares one or more of the features of a Special Function Group is located on the highest terrain and forms the northernmost cluster of structures defining the greater group. Again, both altitude and the north are associated with the heavens, so it is plausible that these other groups (rather than eastern shrines of the sort found in the Belize Valley) were places of ancestor veneration. We have excavated in two of these: Lower Group I and the Pottery Cave Group and ample evidence of household and ritual activities were recovered, so their use was more general than that of the Special Function Groups.

We conducted extensive excavations of two structures in Lower Group I: the eastern range platform (called the Op. 5 Structure), and the southern pyramidal platform (or Op. 6 Structure; Figure 5) (Braswell et al. 2005). Both structures contained two burials. The most elaborate one was found not in the eastern structure, but in the southern one. This crypt contained the remains of an individual with inlaid teeth, but many of the important skeletal elements were missing. For this reason, we interpret it as a re-interment or other secondary burial. Symbols of high office found in the crypt include a white limestone baton, a slate “paddle” or

“wrench,” and a pyrite mirror most often associated with warriors. It is likely the burial of a Late Classic non-royal functionary who lived below and in the shadow of the acropolis (Braswell et al. 2005).

### The Gateway Hill Acropolis

The most important architectural group at Pusilha is the Gateway Hill Acropolis (Figure 6). An ancient toponym known from the Pusilha hieroglyphic corpus consists of a set of stairs and the glyph witz or ‘mountain.’ Rising vertically some 79m from the base of the ancient Maya bridge, the Gateway Hill Acropolis is indeed a stepped mountain. Faced with cut-stones and viewed suddenly from a canoe passing beneath the Maya Bridge, it must have been one of the most imposing acropoli in the Maya world.



**Figure 6.** Gateway Hill Acropolis, showing locations of Operation 8 and Operation 9 Structures. Contour interval is 1 m. Large boulder features are shown in gray and pink

The orientation of the Gateway Hill Acropolis follows that of the natural hill on which it is built: NNW to SSE. The

orientation of the Special Function Groups, therefore, mimics the natural axis of the acropolis. Two large boulders are centered on the northern face of the acropolis just south of the Maya bridge and on the climb leading up to the first terrace. In front of each boulder is a platform where perhaps religious activities were conducted. Numerous small and shallow cavities have been dug beneath each boulder, and it is easy to imagine that incense was burned and offerings were placed in them, in a manner similar to that practiced today in the Maya highlands. The natural orientation of these boulders also reflects the axis of both the Gateway Hill Acropolis and of the Special Function Groups. Two sets of stairs and terraced ramps symmetrically flank the boulders and lead up to the first terrace. A short *sacbe* or ramp leads 20m down from this first terrace to the south end of Ballcourt II, which is bordered immediately to the west by the Machaca or Pusilha River. Thus, Ballcourt II (associated with the underworld) is at the lowest level of the acropolis, it is connected by a *sacbe* to a terrace with range platforms (which may have supported dwellings), and some 50m above the terrace are the large structures where royal burials are located. Although the compass directionality is reversed, the vertical pattern of ballcourt/living space/ancestor worship is the same as found in the Stela Plaza-Ballcourt I complex.

From the first terrace, an eastern stair rising to the second terrace provides access to the higher portions of the acropolis. Here, three platforms - the highest of which is in the south, as in a Special Function Group - flank the eastern side of the terrace. Two more large boulders form the natural gateway that gives the hill its modern name. A long set of poorly preserved stairs leads to the fourth terrace and eventually to the base of the northernmost and lowest of three high structures whose westward orientation, axis,

and relative size again reflect the pattern seen in the Special Function groups.

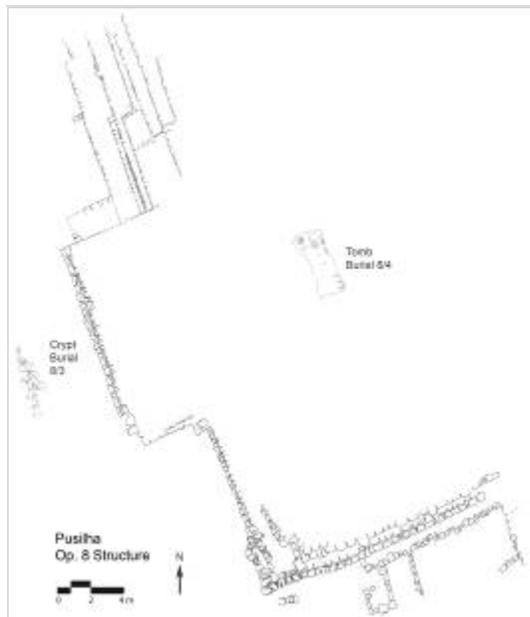
The northernmost platform has been subjected to horrific looting and at least three (but probably more) royal tombs have been opened and robbed. During the 2005 field season, we excavated both the central platform, which we call the Op. 9 Structure, and the southern pyramid or Op. 8 Structure. The Op. 9 Structure is not a true pyramid, but is the natural top of the hill. Its western side is faced with cut masonry and does not contain a stair; instead, there are steps on its northern and narrow face. The Op. 9 Structure served, therefore, as an elevated passageway linking the top of the northern pyramid to the Op. 8 Structure.

In 2005, we also excavated the Op. 8 Structure, the highest point and largest platform in Gateway Hill Acropolis (Braswell et al. 2005). Two important burials were found associated with the structure, and show how the same cosmological principles that determined site planning also are reflected in mortuary patterns.

#### **The Op. 8/3 Crypt and Op. 8/4 Tomb**

In front of the stair of the Op. 8 Structure and on the center line of the building, we discovered a simple crypt burial containing two individuals (Figure 7). The single ceramic vessel in the interment dates to the late 8th or early 9th century. The principal figure was encountered in an extended position, and an accompanying figure was flexed. As in all but one of the burials we have excavated, the heads of each figure point north, or - more correctly - are on the same alignment as the Gateway Hill Acropolis and the Special Function Groups. This orientation probably reflects not only ideas about the heavens, but also the concept of verticality that conceptually links north and up. Grave goods include an incised pyraform vessel to the east of the principal

individual, and the accompanying figure located to the north. This pattern, of grave goods to the north and east, is common at Pusilha.



**Figure 7.** Operation 8 Structure, showing locations of double crypt Burial 8/3 and royal tomb Burial 8/4.

In 2005 we also discovered a royal tomb in the Op. 8 Structure. Photographs have been published of some of the artifacts found in and around the tomb (Braswell et al. 2005), including eccentrics made of chert and obsidian, a multitude of jade beads, the three diadems that formed a royal saq hunal headdress, and a polychrome tripod plate. Iconographic elements borrowed from Teotihuacan link some of the items in and around the tomb most closely to the first and the seventh rulers. The 14 vessels are late Tepeu 2 in form and decoration. They are most consistent in date with Ruler G, who died some time between A.D. 731 and 751. If our identification is correct, this is the first Belizean ruler to be excavated whose name is known and whose exploits are described in hieroglyphic texts.

With the exception of items of personal adornment, the distribution of grave goods within the tomb follows the

same pattern described for the crypt. Thirteen of the ceramic vessels were found along the eastern side of the tomb, a direction associated with resurrection. These 13 vessels and the food they contained therefore awaited the rebirth of the king from the underworld and his subsequent journey to the 13 levels of heaven. A second interesting pattern in the linear arrangement of these vessels was noted by Cassandra Bill (personal communication 2006). Polychrome and light-colored vessels were placed toward the north while black and dark brown vessels were located toward the south end of the eastern wall of the tomb. In this case, color associations may also indicate directions: north associated with light and color, south with darkness.

The fourteenth vessel, a large and crudely made basin containing more than 80 items of jade, was discovered on the north side of the tomb: a direction associated with the heavens. Two small obsidian eccentrics were also found in the north. In contrast, no offerings were encountered along either the west or south walls, directions associated with death and the underworld.

A final observation is that the tomb was reopened in antiquity. Rather than entering from the antechamber, the capstones spanning the tomb were removed, and some items - including one of the three jade diadems forming the royal headdress - were moved. Although there is no evidence of tomb reuse, a pattern cited by Leventhal (1990) as characteristic of the southern Belize region, but also known at Caracol, the royal tomb of Pusilha and the secondary burial in the elaborate crypt of Lower Group I indicate that interments were revisited.

## Conclusion

Pusilha is a southern Peten site, with close ceramic, epigraphic, and iconographic ties to the Rio Pasion and Petexbatun

regions. It also shares certain cosmological ideas - the association of north and up with the heavens, south with the ballgame and underworld, and east with the emerging sun and resurrection - with most of the Maya region. But, like other sites in somewhat isolated and peripheral southern Belize, the inhabitants of Pusilha developed a distinct regional tradition that is expressed in burial practices, architectural forms, and site planning. The long independence of the southern Belize region no doubt contributed to the development of this tradition.

### Reference Cited

- Bill, Cassandra R., and Geoffrey E. Braswell  
2005 Life at the Crossroads: New Data from Pusilha, Belize. In *Archaeological Investigations in the Eastern Maya Lowlands: Papers of the 2004 Belize Archaeology Symposium*, Volume 2. Institute of Archaeology, NICH, Belmopan, Belize, edited by J. Awe, J. Morris, and S. Jones, pp. 301-312
- Braswell, Geoffrey E., & Sherry A. Gibbs  
2006 In the Land of the Avocado: Recent Archaeological Investigations at Pusilhá, Toledo District, Belize. In *Archaeological Investigations in the Eastern Maya Lowlands: Papers of the 2005 Belize Archaeology Symposium*, Volume 3. Institute of Archaeology, NICH, Belmopan, Belize. edited by J. Morris, S. Jones, J. Awe, and C. Helmke, pp. 271-286.
- Braswell, Geoffrey E., Christian M. Prager, and Cassandra R. Bill  
2005 The Kingdom of the Avocado: Recent Investigations at Pusilhá, a Classic Maya City of Southern Belize. *Anthropological Notebooks* 11(1):59-86.
- Braswell, Geoffrey E., Christian M. Prager, Cassandra R. Bill, Sonja A. Schwake, and Jennifer B. Braswell  
2004 The Rise of Secondary States in the Southeastern Periphery of the Maya World: A Report of Recent Archaeological and Epigraphic Research at Pusilhá, Belize. *Ancient Mesoamerica* 15:219-233.
- Hammond, Norman  
1975 *Lubaantun: A Classic Maya Realm*. Monographs of the Peabody Museum, No. 2. Peabody Museum of Archaeology and Ethnology, Cambridge, MA.
- Leventhal, Richard M.  
1990 Southern Belize: An Ancient Maya Region. In: Flora S. Clancy and Peter D. Harrison (eds.), *Vision and Revision in Maya Studies*, pp. 124-141. University of New Mexico, Albuquerque.
- Marcus, Joyce  
1992 Dynamic Cycles of Mesoamerican States: Political Fluctuations in Mesoamerica. *National Geographic Research and Exploration* 8:392-411.
- 1993 Ancient Maya Political Organization. In: Jeremy A. Sabloff and John S. Henderson (eds.), *Lowland Maya Civilization in the Eighth Century A.D.*, Washington, D.C.: Dumbarton Oaks, pp. 111-183.
- Morley, Sylvanus G.  
1938 *The Inscriptions of Peten*, Volume IV. Publication No. 347. Carnegie Institute of Washington, Washington, D.C.

---

## 7 **COMMONER RITUAL AND SOCIO-POLITICAL LIFE IN A LATE CLASSIC NEIGHBORHOOD: ARCHAEOLOGICAL INVESTIGATIONS AT THE NORTHEAST GROUP, CHAN, SITE, BELIZE**

*Chelsea Blackmore*

---

*While increased attention has been given to smaller-scale settlements, rarely is commoner ritual understood in the wider socio-political context of ancient Maya society. Investigations at the Northeast Group, a Late Classic neighborhood, have examined how the centralization of neighborhood-wide ritual was key to the negotiation and formation of social identity among its occupants. Evidence recovered from excavations in 2004 and 2005 indicate that two groups, Clusters NE-1 and 3, were the focus of social and ritual activities within the neighborhood. Excavations have identified considerable diversity between households, suggesting that neighborhood occupants shaped social status and identity through the control of feasting and farming ceremonies. This ability to actively manipulate status forces archaeologists to consider how commoner activities, no matter how “mundane”, may have impacted wider social, political, and economic networks.*

### **Introduction**

The elaborate art and iconography of the Classic Maya have long provided testament to the importance of ritual in elite ancient Maya identity-formation and politics. But what of ordinary Maya people? Recent critiques (e.g. Iannone and Connell 2003; Lohse and Valdez 2004; McAnany 1995; Pyburn 1997) have illustrated the variability that exists between and within settlement types, yet the role that commoners played in creating and maintaining this variability remains underdeveloped. Although we speak confidently of them as laborers and producers, we usually ignore commoners as socially diverse individuals. If commoners are only as important as the materials they produce, then we can never understand the impact these populations had on wider social and political processes.

If archaeological interpretations of ancient Maya society are based on the lives of the elite, then how can we accurately describe commoner populations, let alone ancient Maya society as a whole? Over the last two years, household research at the Northeast Group, part of the ancient agrarian

village of Chan, Belize has investigated how its occupants built and manipulated social status and identity through the control of ritual materials and activities (Figure 1). Posthole testing and excavations have demonstrated considerable diversity between households based on architectural style, differences in household debris, and the identification of ritual caches and burials. Because the Northeast Group approximates a “neighborhood”, it would have acted as a locus of intra-community interaction, maintained through social, economic and ritual activities. If these spaces were the loci of community interaction, they were also the arenas in which identity and status were expressed and manipulated.

### **Commoner Identity and Status**

Social identity is not simply a category we use for discerning differences in social position, it also refers to the way in which people interact and define themselves within a set of cultural rules. Whether we refer to households, neighborhoods, or communities, archaeological interpretations tend to focus on the integration of social

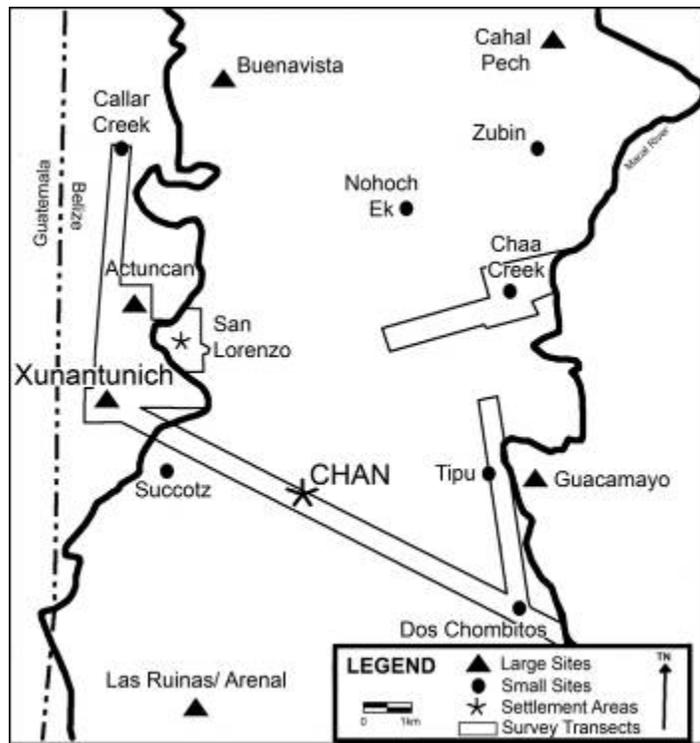


Figure 1: Location of Chan Archaeological Site

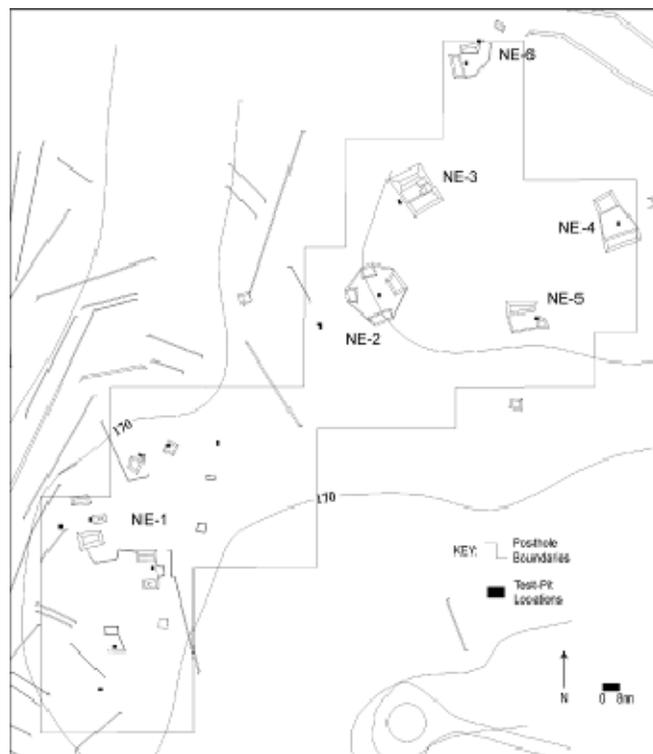
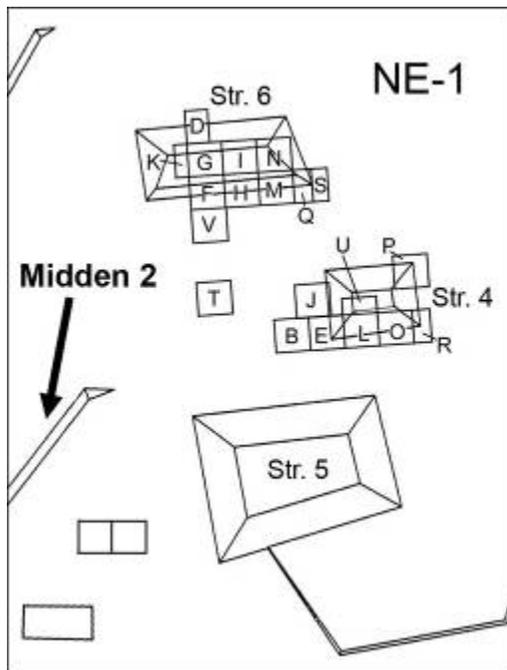


Figure 2: The Northeast Neighborhood Group

behaviors and activities. Yet integration does not necessarily negate differentiation; it “involves the social negotiation of difference and sameness, and ... often entails larger tensions between individuals, the group, and the state” (Meskell 2001:89). Since people vary in their economic strategies, status positions, occupations, and access to goods and resources, there is usually little room for social homogeneity. The effects of state and class-based societies are not limited to seats of government, economic power, or religious authority. Those living in the periphery, margins or rural areas of society are part of the infrastructure and as a result play a crucial role in the maintenance and reproduction of society.



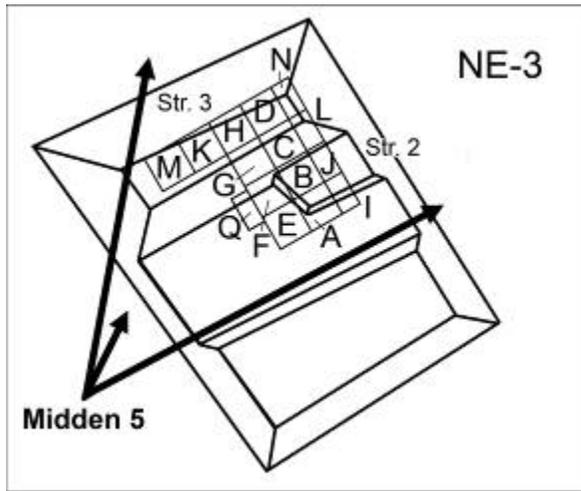
**Figure 3:** Midden 2 of Mound Group 2, Cluster NE-1

Archaeologists often equate status and power with displays of wealth, the control of space, and ritual activities. Because the built environment reflects cultural attitudes, an examination of spatial

arrangement, specifically the organization of space, may reflect aspects of social identity (Kent 1990). Similarly, control over ritual spaces and domestic activities therein allowed emergent elites to build and consolidate power (e.g. Lucero 2003; McAnany 1995). In the Maya area, ancestor veneration and the dedication and termination of structures were important aspects of domestic life, related to the cycles of the cosmos and acts of birth and renewal. Fire ritual and “censing” served to renew the community and household through the activation of its sacred spaces (Rice 1999; Stuart 1998). Feasting activities were dedicated in the commemoration of gods as well as the sacrifice and transformation of food into a “sacred element” (LeCount 2001: 941). While these revitalized and ensured the survival of the community, they also served as political and social currency. Lineage heads of both commoner and elite households would have been expected to host feasts, enact fertility rituals, and renew sacred spaces; thereby, legitimizing their position within a neighborhood, community, or region.

Dissertation research at the Northeast Group has examined how interior and exterior spaces were utilized and defined by the group’s occupants as a means to establish social standing within the community. By examining the function and organization of space and the corresponding distribution of material goods across the neighborhood, we can define the activities and behaviors in which people engaged; how these varied in relation to resource access; as well as the restriction and elaboration of particular spaces. If there is a direct connection between social status and the centralization of ritual activities, then evidence from higher-status households should include increased densities of ritual deposits, elaboration of architectural spaces,

and greater access to economic resources and “prestige” items.



**Figure 4:** Location of Midden 5, Cluster NE-3 (confirmed by test-pit on western edge)

### **The Chan Community and the Northeast Group**

The Chan archeological site is an ancient agrarian village located in the Upper Belize River Valley, approximately 4km southeast of the minor polity-center of Xunantunich (Robin 1999, 2002) (see Figure 1). The Northeast Group, one of a number of “neighborhoods” that characterize the Chan landscape, includes 6 mound clusters of variable size and spatial arrangement (Figure 2). Its size and organization fits definitions of “neighborhoods” found in Maya archeological and ethnographic resources. Bullard (1964:281), for example, defined neighborhoods as a collection of households organized in a “hamlet-like cluster of from 5-12 structures”. Vogt (1976), meanwhile, relates neighborhoods to waterhole groups of modern-day Zinacantan. Although these places had little formal spatial organization, scholars suggest (Blanton et al 1982; Pyburn 1997; Vogt 1976) that neighborhoods were organized on the basis of lineage, status, and possibly occupation. Set within broader social networks, neighborhoods bound people

through various interactions that would have defined identity both within the neighborhood and across settlements within the Chan community.

### **Investigations at the Northeast Group**

Household research at the Northeast Group has investigated how occupants built and manipulated social identity, specifically through the control of ritual materials and activities. Excavations in 2004 focused on the systematic coverage and sampling of both on and off-mound areas while those in 2005 focused on more extensive horizontal and penetrating excavations of architecture in Clusters NE-1, 3 and 6 (Blackmore 2004, 2005). In 2004, a post-hole and test-pitting program encompassed approximately 40,000m<sup>2</sup> of area. Posthole tests were placed at 6-m intervals along north-south transects throughout the neighborhood to delimit houselot boundaries. An additional twenty five 2x1m test-pits were excavated, placed in each of the six architectural clusters to elucidate construction history and investigate significant finds identified from posthole tests.

Of the 812 postholes completed, 46% contained evidence of cultural remains and 13 of these were considered unusually productive. Further exploration of these areas via test-pits resulted in the identification of at least 5 middens. Most notable among these were Middens 2 and 5, both of which produced a considerable diversity of material, both domestic and ritual in nature. Material recovered from Midden 2, located directly behind mound Group 2, Cluster NE-1 included ceramics, lithics, groundstone, incensario fragments, and obsidian prismatic blades (Figure 3). Based on excavations along the western edge of Cluster NE-3 and the identification of productive post-holes near the cluster, Midden 5 was identified as a series of refuse deposits disposed along the perimeter of the

group (Figure 4). Its thick lens of refuse, (approximately 60cm thick in comparison to 20-30cm in Midden 2), suggests that it was used frequently through the lifecycle of the cluster.

The diversity and quality of artifacts recovered from Clusters NE-1 and 3 in 2004 were unique when compared to elsewhere in the neighborhood (Blackmore 2004). The identification of higher concentrations of middens, obsidian prismatic blades, polychrome ceramics, and effigy censer fragments suggested that Clusters NE-1 and 3 may have been the focus of social or ritual activities within the neighborhood. Research in 2005 focused on extensive horizontal and penetrating excavations in Clusters NE-1, 3, and 6 to confirm whether these differences were in fact real. Excavations in Cluster NE-1 focused on Group 2, one of two- three mound patio groups (Structures 4, 5, & 6) that characterize the cluster (see Figure 3). Excavations focused on Structures 4 and 6, exposing both terminal architecture and internal stratigraphy through a series of twenty suboperations. Ceramic analysis conducted in 2006 indicated that Structure 6 was founded in the Early Classic and continuously occupied through the Late and Terminal Classic period. This contrasts with most other households in the Northeast Group, which are not established until the Late Classic period.

Prior to excavations, I suggested that Structure 4 was ritual in nature rather than an ancillary structure based on its square shape and location on the group's eastern side. Based on the recovery and identification of two burials and the dearth of utilitarian items that would have indicated a storage or kitchen area, the excavations supported my initial thesis. Two interments were dedicated during its construction, a capped cist buried under the western staircase, and a looted burial recovered from

the structure's interior. In contrast to Structure 4, Structure 6 was a residential living space as implied by the identification of three benches, one three-course rectangular bench in the center, and two-L-shaped benches on either end. As is common to ancient Maya households, we also recovered a simple stone-lined crypt found directly in front of the structure's staircase.

Although evidence suggests that Structure 6 is a residence, other architectural features imply a potential ritual focus of this structure in a manner parallel to that of Structure 4. While seeking the southeast corner of the structure, we identified a stone-lined pit, most likely an emptied corner cache, adjacent to the easternmost bench. Another unusual architectural feature, a niche, was identified on the southeast corner of Structure 6, set into the stairs leading out of the patio group. Nothing was found in association with the niche, making functional assessment difficult. Its location on the platform's eastern edge which faces away from the platform suggests that its contents were visible to people living outside of the group.

Cluster NE-3, a tightly arranged three-mound patio group, appears to have been occupied continuously from the early Late Classic through the Terminal Classic period (see Figure 4). Excavations in 2005 focused on the horizontal exposure of Structure 3, a small ancillary structure, and the eastern half of Structure 2, a larger residential building. In Structure 2's ultimate phase, it can be described as a 1.5m-high rectangular substructure with an eight-course staircase and a 3.5 m rectangular bench at its summit. What distinguish Cluster NE-3 are its architectural detail and the concentration and diversity of remains and deposits recovered from a relatively modestly sized space. Three areas stand out; first, a small alleyway between

Structure 2 and 3, second, a hearth and possible ritual or feasting deposit and finally a series of burials and caches identified in the center of the patio. In the alleyway between Structures 2 and 3, we recovered a number of worked pieces of limestone; shell, and jade (Figure 5), interspersed between concentrations of unslipped jar rims and necks. More than likely, this material is an accumulation of trash, swept into the alleyway from the two adjoining structures.

The second area of note is a niche built into the western edge of Structure 3 (Figure 6). Identified as a hearth based on the recovery of ash and animal bone, it appears to have been in use and modified during the last two construction episodes of Cluster NE-3. When first built, the hearth was 30cm deep and 45cm wide. Although the hearth was decreased in depth with the addition of the ultimate patio floor, it remained in use by the group's occupants as indicated by the recovery of ash in its final context. What makes the hearth important, however, is its capped portion, which became a ritual deposit sealed by the ultimate patio construction. This deposit was divided into two main segments: those materials found within the hearth and those scattered beyond it. The densest portion of the deposit was located in the hearth and included burnt animal bone, shell fragments, ceramic and lithic fragments, and a 20cm lens of ash. Outside of the hearth, the deposit extended an additional 85cm and included pockets of ash mixed with the surrounding fill context. The primary concentration of artifacts in this scatter, however, was located directly in front of the hearth including a single 20-cm unslipped calcite dish (see Figure 6). The entire deposit was then capped by the ultimate patio floor, a well-preserved plaster surface, 4cm thick.

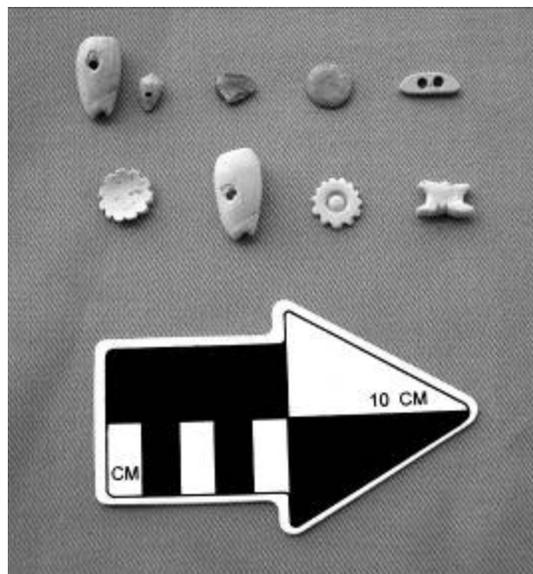


Figure 5. Alleyway trash from Cluster NE-3

The final area of interest in Cluster NE-3 is a series of burials and deposits recovered in a trench, measuring 4m long by 3.5m wide that cut through the approximate center of Cluster NE-3's patio (Figure 7). In 2004, a relatively large (2.3m NS x 1.0m EW) and well-constructed stone crypt was identified at the base of test-pit excavations (B1 in Figure 7). Osteological analysis indicates that two individuals were interred; the primary individual is a 35 to 50 year old male, placed underneath a female between the ages of 20 and 35 years old (Briggs 2004). In 2005, three additional burials were recovered. The first of these was a crypt burial containing at least three individuals (B2 in Figure 7). Identified adjacent to this was a second burial, a 65cm deep cist cut into bedrock. The interment itself, a single individual lying face down, was found at the base of the cist (underlying 40cm of fill) and was incredibly well preserved (B3 in Figure 7). To the east of this, we also identified a deposit of two lip-to-lip vessels, which were covered by a third larger, unslipped plate (D1 in Figure 7). Finally, while drawing the western section of our trench, we identified an additional burial, a small and poorly preserved crypt.



**Figure 6.** Ritual Deposit from Hearth, Str. 2, Cluster NE-3

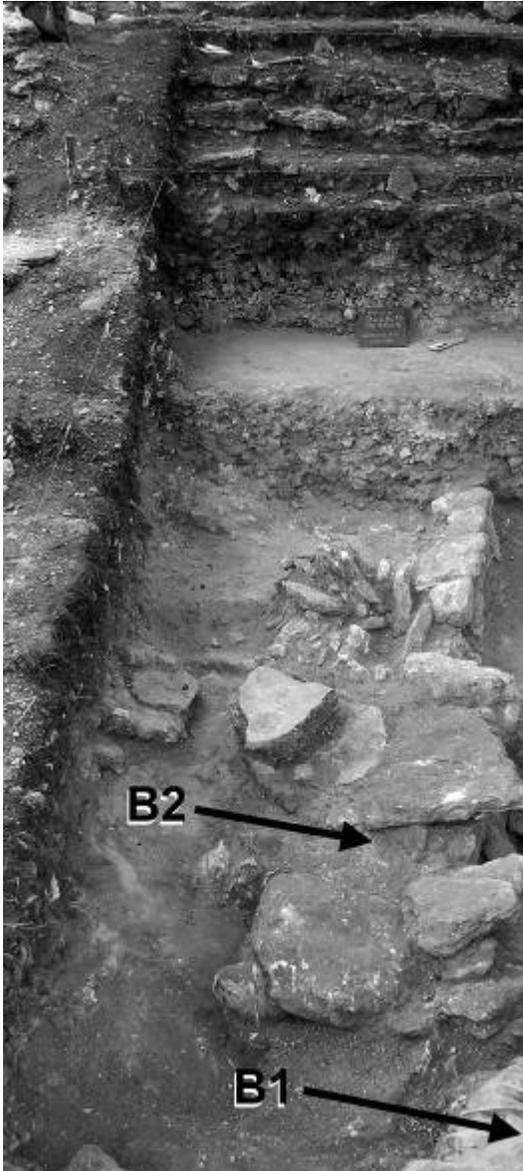
The final group excavated in 2005 was that of Cluster NE-6. Identified as a one of the four lower-status domestic households in the neighborhood, these excavations provided an important comparative base line for understanding the unique complex of materials identified in Clusters NE-1 and 3. Cluster NE-6 is a small, two-mound patio group (both structures under 1m in height), located at the northern end of the neighborhood. Architecturally and materially Cluster NE-6 can be characterized as a strictly domestic house mound group with simple platform

construction and domestic debris. In contrast, Clusters NE-1 and 3 were considerably more complex; excavations identifying staircases, benches, masonry architecture, multiple construction sequences, construction bins, jade, carved shell fragments, grave goods, niches, and corner caches; materials otherwise not found in Cluster NE-6.

The identification of domestic and ritual material in Cluster NE-1 and NE-3 suggest they each had a specific ritual purpose. Given its close proximity to a series of agricultural terraces, mound Group 2 of Cluster NE-1 may have been linked to farming and fertility ceremonies. The recovery of extensive midden remains, a hearth, and possible feasting deposit suggests that the occupants of Cluster NE-3 were lineage heads who hosted neighborhood-wide social activities. The burials and deposits of this cluster reaffirm this notion. The focus of activity in the center of the cluster reflects Maya concepts of directionality and reinforces this space as an axis mundi between the three levels of the universe. Whereas Cluster NE-1 included ritual and domestic activities, Cluster NE-3 appears to be focused on public displays and social activities.

### **Conclusion**

The identification of Clusters NE-1 and 3 provide a unique opportunity to explore how the control of ritual and neighborhood activity may have been a principal component in the expression and definition of social identity. Preliminary assessments of the quality and diversity of household debris, architectural style, and the identification of ritual caches and burials, suggests that the occupants of Clusters NE-1 and 3 were considerably more complex than other groups in the neighborhood.



**Figure 7:** Burials and Deposits underlying the Patio of Cluster NE-3

In particular, Cluster NE-3 may have been the focus of feasting or other social and public activities for the neighborhood. Without question the quantity and concentration of burials within the cluster suggest that its occupants were vested in the power of ancestor veneration. Cluster NE-6, in comparison, appears to be a simpler, more strictly domestic house-mound group. In the competition for social standing and power, residents of Clusters NE-1 and 3 were

ascendant hosts, while neighbors in Cluster NE-6 appear to be guests or observers.

As Hendon (2000:9) notes “On the one hand, we tend to speak confidently of the elite and non-elite, rulers and ruled, without doing much to dissect the internal differences in these large groupings or their interactions.” Because of the various limitations of archaeological data, we tend to focus on one aspect of social organization, while giving negligible treatment to intersecting facets. In particular, a focus on elite society has rendered commoners invisible and therefore unimportant to archaeological interpretations. While internal differentiation is an expected attribute of elite society, commoners are consistently portrayed as simple farmers and part-time craft specialists bound together by community ritual. By basing our investigations on such assumptions, we lose sight of the internal variations that comprise social identity; the very root of interactions between individuals, groups, and societies.

*Acknowledgements:* Funding for this project was made available by the National Science Foundation, Sigma-Xi, and the University of California, Riverside. I would like to thank the Belize Institute of Archaeology for their continued support of my dissertation research. This work would not have been possible without the guidance of my project director, Cynthia Robin, my dissertation advisor, Wendy Ashmore, and the Chan excavation team: Nester Alfaro, Yasmine Baktash, Bernadette Cap, Don Ventura Cocom, Don Virgilio Goodoy, Cirro Hernandez, Laura Kosakowsky, John Meierhoff, Glenis Smith, Elvis and Elmer Valdez, and Andrew Wyatt. As always, I owe a debt of gratitude to Shankari Patel for giving me the space and time to conduct my research so far from home.

## References Cited

- Blackmore, Chelsea  
2004 Preliminary Testing and Excavations at the Northeast Group, 2004. In *The Chan Project: 2004 Field Season*, edited by C. Robin. Northwestern University, Department of Anthropology.
- 2005 Excavations in the Northeast Group: Clusters 1, 3, and 6. In *The Chan Project: 2005 Field Season*, edited by C. Robin. Northwestern University, Department of Anthropology.
- Briggs, Margaret  
2004 Analysis of the Chan Burials. In *The Chan Project: 2004 Field Season*, edited by C. Robin. Pp. 97-128. Northwestern University, Department of Anthropology.
- Bullard, William  
1964 Settlement Pattern and Social Structure in the Southern Maya Lowlands during the Classic Period. In *XXXV Congreso Internacional de Americanistas*, vol. 1. México City.
- Hendon, Julia  
2000 Having and holding: Storage, Memory, Knowledge and Social Relations. *American Anthropologist*. 102, 42-53.
- Iannone, Gyles and Samuel V. Connell  
2003 Perspectives on Ancient Maya Rural Complexity. In *Perspectives on Ancient Maya Rural Complexity*, edited by Gyles Iannone and Samuel V. Connell, pp. 1-6, Cotsen Institute of Archaeology, Los Angeles.
- Kent, Susan  
1990 Activity Areas and Architecture: an Interdisciplinary View of the Relationship between Use of Space and Domestic Built Environment. In *Domestic Architecture and the Use of Space*, edited by Susan Kent, pp.1-8. Cambridge; Cambridge University Press.
- LeCount, Lisa J.  
2001 Like Water for Chocolate: Feasting and Political Ritual among the Late Classic Maya at Xunantunich, Belize. *American Anthropologist* 10(4):935-953.
- Lohse, John and Fred Valdez, eds.  
2004 Ancient Maya Commoners. University of Texas Press, Austin.
- Lucero, Lisa J.  
2003 The Politics of Ritual: The Emergence of Classic Maya Rulers. *Current Anthropology* 44(4): 523-558.
- McAnany, Patricia A.  
1995 Living with the Ancestors: Kinship and Kingship in Ancient Maya Society. University of Texas Press, Austin.
- Meskell, Lynn  
2001 Archaeologies of Identity. In *Archaeological Theory Today*, edited by Ian Hodder, pp. 187-213. Blackwell, Oxford.
- Pyburn, Anne  
1997 The archaeological signature of complexity in the Maya lowlands. In *The Archaeology of City States: Cross-Cultural Approaches*, edited by T. Charlton and D. Nichols. Smithsonian Institution Press, Washington, DC, pp. 155-168.
- Rice, Prudence M.  
1999 Rethinking Classic Lowland Maya Pottery Censers. *Ancient Mesoamerica* 10: 25-50.
- Robin, Cynthia  
1999 Towards an Archaeology of Everyday Life: Maya Farmers at Chan Noohol and Dos Chombitos Cik'in, Belize. Ph.D. dissertation, University of Pennsylvania
- 2003 Community Development at the Agrarian Village of Chan, Belize. Northwestern University. National Science Foundation Grant
- Stuart, David  
1998 "The Fire Enters His House": Architecture and Ritual in Classic Maya Texts. In *Function and Meaning in Classic Maya Architecture*, edited by Stephen D. Houston, pp.373-425. Dumbarton Oaks Research Library and Collection, Washington, D.C.
- Vogt, Evan Z.  
1976 Tortillas for the Gods: a Symbolic Analysis of Zinacanteco Rituals. Cambridge: Harvard University Press.

---

## 8 AN UNEXPECTED DISCOVERY IN THE CHAU HIIX SETTLEMENT: SUGGESTIONS FOR TERMINAL CLASSIC RESIDENCES IN NORTH-CENTRAL BELIZE

A. Sean Goldsmith

---

*Settlement reconnaissances at Chau Hiix during the past several seasons have identified a multitude of low-mounded features akin to those recorded at ancient cities throughout the Maya Lowlands. The additional discovery of both ground-level (non-mounded) as well as entirely buried occupation surfaces at Chau Hiix highlights the probability that demographic studies which refer to mounded features alone may under-represent population trends at many Maya sites. At Chau Hiix, at least one such “surface-invisible” feature was recently identified during systematic subsurface testing, and has been dated to the Terminal Classic Period. An expanded subsurface testing program at the site would seem likely to encounter many more such features, a suggestion partly supported by several ground-level stone alignments and notable artifact scatters which have been observed in “empty” terrain throughout the settlement area. While population decline around the end of the Classic Period is well attested at Lowland sites, shifts in non-elite residential strategies at Chau Hiix, especially as regards architectural investment, may significantly mask demographic continuities during this tumultuous transition.*

### **Introduction**

Cultural transformations during the Terminal Classic Period in the Maya Lowlands are postulated to have been variable in both socio-political and demographical result (Bey *et al.* 1997; LeCount 1999; Lucero 2002; Webster and Freter 1990; Wright and White 1996). While these transformations are often evidenced by data collected from elite contexts, Terminal Classic Period pan-regional shifts in economic flow, political alliances, or systems of ideology are also likely to have impacted local non-elite communities in ways visible to archaeological scrutiny (Ashmore *et al.* 2004; LeCount 1999; Masson 1997). Better yet, discernible shifts in agricultural, residential, or specialized productive strategies at the household level may inform our understanding of the actual mechanics of change across the transition between the Classic and the Postclassic Periods (cf. Robin 2003). Both of these avenues of inquiry require detailed study of rural household material deposition and community-level settlement patterning for

this time period – goals toward which only tentative steps have been made at most sites in Belize.

This paper is a presentation of data derived from settlement area research at the site of Chau Hiix, in north-central Belize (Figure 1), and is intended to add new data to the overall corpus of information regarding Terminal Classic household archaeology in the region. The Chau Hiix Houselot Project was designed to investigate the spatial nature of refuse deposition among a group of proximate non-elite domestic compounds (houselots) at a single, relatively small Maya centre. The goals and results of this project have been described in a previous Belize Archaeology Symposium volume (Goldsmith 2005), and are therefore summarized only briefly below.

### **The Chau Hiix Houselot Project**

Chau Hiix is a modestly sized Maya city in north-central Belize, relatively equidistant from Lamanai to the west, and Altun Ha to the east. The city has its origins near the beginning of the Middle Formative period (approximately 1000 BC), and was

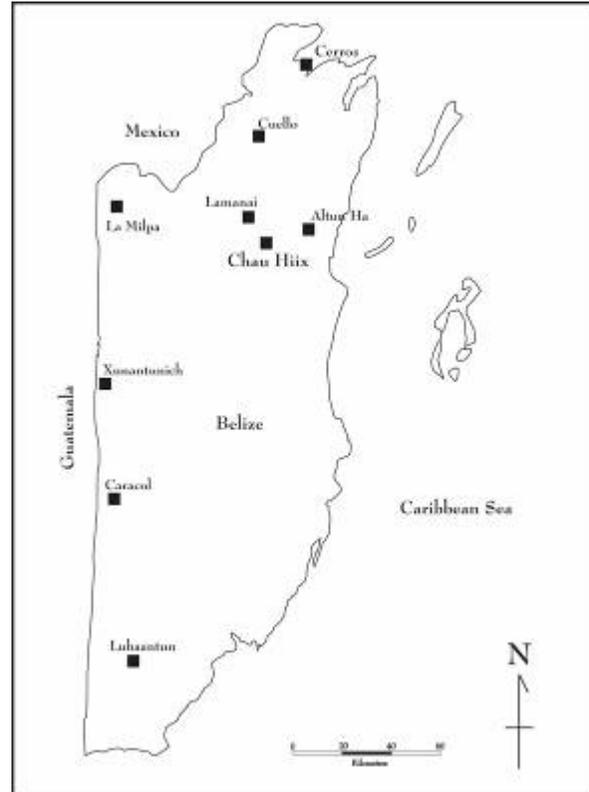


Figure 1: The location of Chau Hiix and other nearby sites

probably occupied continuously up until the Colonial Period (Andres n.d.; Andres and Pyburn 2004). Work at Chau Hiix has been ongoing since the early 1990's under the direction of Dr. Anne Pyburn of Indiana University, and with the gracious support and encouragement of the people of Crooked Tree Village, who have curated and protected the site throughout the 20<sup>th</sup> century. Settlement pattern research at Chau Hiix has been conducted sporadically since the mid 1990s (Cook 1997; Cuddy 2000). A systematic survey, posthole augering, and testpitting program within a large region to the north of the site centre was conducted by the author and several assistants between 1999 and 2003, and was designated the Chau Hiix Houselot Project (Goldsmith 2006).

The Chau Hiix Houselot Project was designed to explore the spatial distribution

of subsurface cultural material across a portion of non-elite settlement at Chau Hiix. The purpose of the project was to illustrate the high data-collection potential of systematic subsurface sampling over large areas. The project followed a three-stage methodology as follows: Stage 1 involved surface mapping of settlement features over a large portion of terrain to the north of the site centre (Figure 2), and resulted in the identification of numerous mounds, terraces, water catchment features, and so on. Stage 2 employed a systematic subsurface sampling program, using posthole augers, over a smaller area within the Stage 1 mapping zone (Figure 3). The third and final stage of the fieldwork, conducted during the 2003 field season, involved the excavation of targeted 1 x 1 metre test pits in areas of subsurface artifact density as

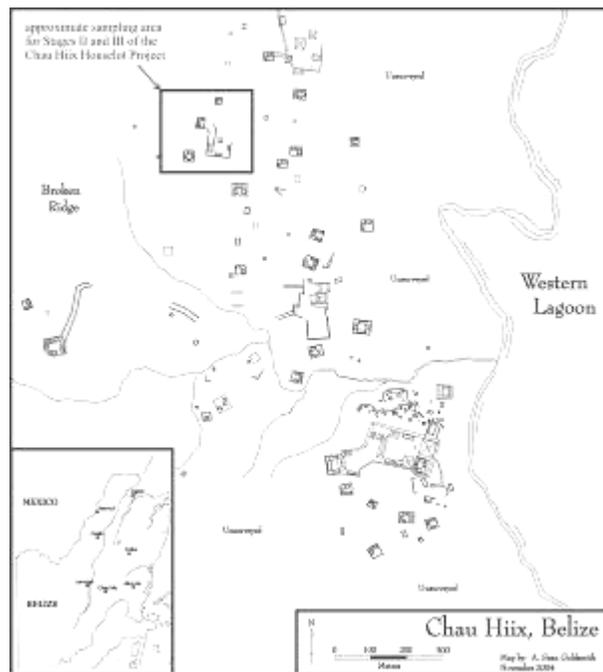


Figure 2: Site centre and mapped settlement of Chau Hiix

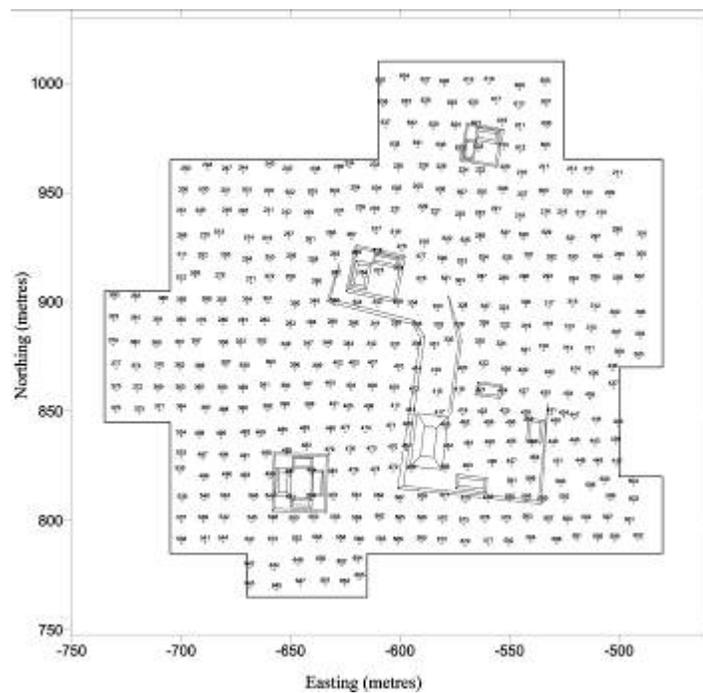
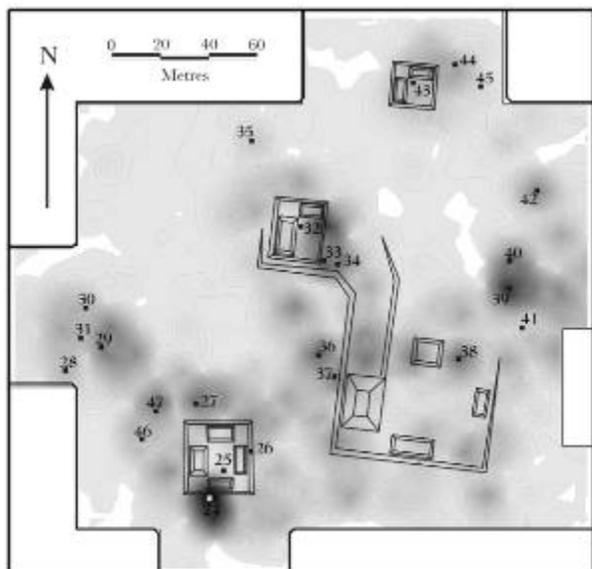


Figure 3: Locations of all Stage 2 auger tests

identified by the auger testing program (Figure 4).



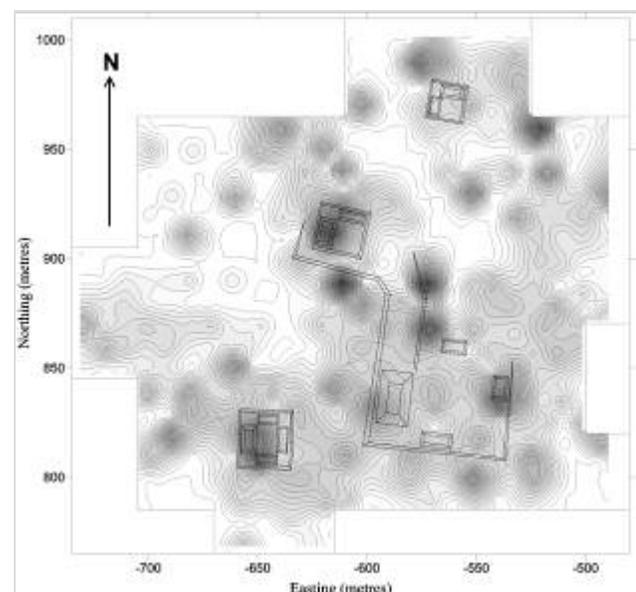
**Figure 4:** Locations of all Stage 3 testpits

The auger-testing program resulted in the collection of substantial quantities of artifact material. Almost all of the postholes contained artifacts of some kind, and what became clear during the fieldwork was that there was a great deal of variation in the densities of artifacts from one part of the sampling area to the next. To illustrate this variation, all posthole artifact data were entered into an electronic database, and subsequently represented in graphic form using contour mapping software to show spatial artifact density distributions. Figure 5 shows one such example, and is a representation of the spatial distribution of subsurface ceramic densities in the study area. Areas of greater contour indicate areas with higher numbers of ceramic sherds.

The resulting maps of artifact density distribution allowed the tentative delineation of “houselot” boundaries within the study area. The concept of the houselot is enjoying increased popularity as a methodological tool for data collection in

the Maya area (Deal 1985; Hayden and Cannon 1983; Killion 1990; Robin 1999). The dual intent of the Chau Hiix Houselot Project was (a) to delineate houselots in the study area, and then (b) to draw representative artifact samples from each houselot in order to make inferences about household activity.

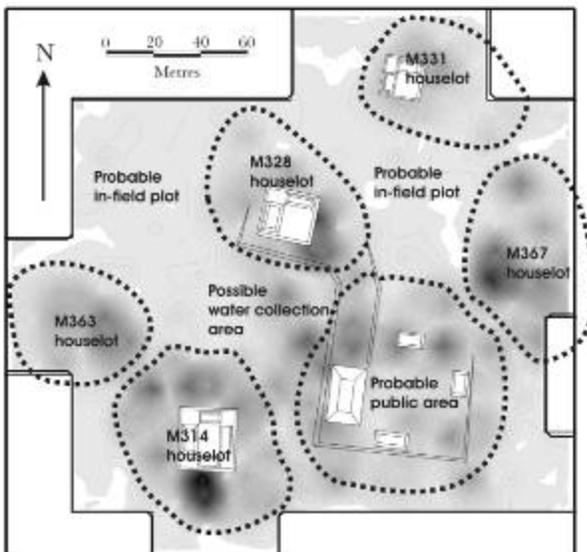
The primary result of the Chau Hiix Houselot Project was the identification of five discrete houselots within the study area (Figure 6), including three that contained visibly mounded architectural remains, and an additional two that did not exhibit mounded features of any kind. Ceramic materials recovered from all five of these houselots suggested occupation primarily during the Early Classic Period (see Goldsmith 2006 for further discussion of this Early Classic community). Data relating to other parts of the lengthy Chau Hiix chronology were limited. However, some evidence for Terminal Classic activity in this part of the site is suggested, and was recovered from the southwest portion of the study area.



**Figure 5:** Subsurface ceramic density variation in the study area

### Terminal Classic Period Evidence at Chau Hiix

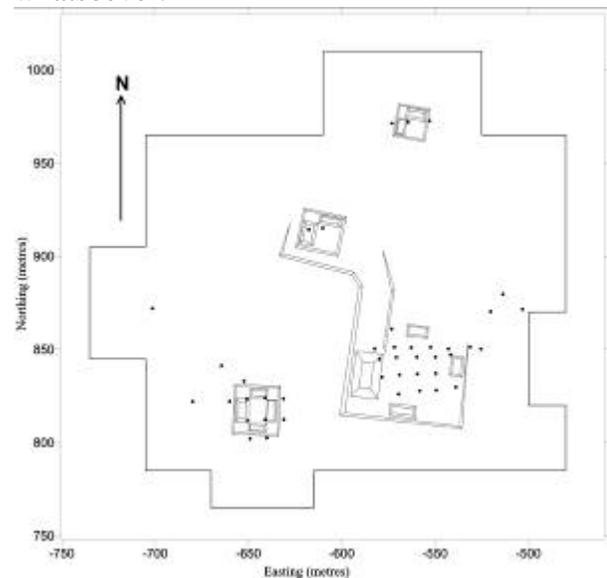
Architectural excavations in the elite monumental core of Chau Hiix have demonstrated not only that the city was occupied during the Late Classic to Terminal Classic transition, but also that the rulers undertook significant architectural projects at this time (Andres n.d.). Limited excavations into mounded remains immediately adjacent to the central architectural precinct have suggested the presence of a supporting population in the later parts of the Chau Hiix chronology, but unequivocal settlement evidence dating to the Terminal Classic period at Chau Hiix is virtually non-existent.



**Figure 6:** Extrapolated houselot boundaries as based on subsurface densities

During Stage 2 of the Chau Hiix Houselot Project, it was not uncommon for excavated auger holes to contain cobble fill matrices of the sort commonly found as subfloor ballast in monumental architecture and housemounds alike (Figure 7). In most instances, the locations of cobble fill auger holes were explained by reference to visibly mounded features within the study area. Other locations were further explained by

reference to what were ultimately found (through test pit excavation in the final stage of the project) to be occupation floors entirely invisible to surface scrutiny. But within the southwest portion of the study area, the discovery of cobble fill material in two auger locations was not immediately explained. To address this enigma, a 1 x 1 metre excavation unit was placed in the vicinity of one of the postholes in question (see Figure 4, Testpit 46). The terrain was highly unremarkable from the perspectives of both surface topography and surface evidence of cultural material (Figure 8), and were it not for the presence of cobble fill matrices in the auger holes themselves, there would have been no compelling reason to suspect cultural activity in this location whatsoever.



**Figure 7:** Locations of auger holes containing cobble fill matrices

Excavation of the 1 x 1 metre test pit proceeded in similar fashion to all test pits excavated during the 2003 season. Soil matrices were removed in contextual fashion, with the identification of contexts primarily based on the visual clues provided by soil color changes, changes in matrix consistency, the appearance of new material types, or marked changes in artifact

densities. All sediments were screened through ½” mesh to ensure the recovery of smaller artifacts such as shell or obsidian fragments. The final vertical profile of Test pit 46 is shown in Figure 9. The transition between contexts 1 and 2 of this test pit almost certainly represents the shattered remains of a plastered occupation surface, with context 2 constituting subfloor cobble ballast of a nature highly typical of subfloor contexts throughout the settlement area. In fact, in the absence of chronological markers to the contrary, this occupation surface would likely have been assigned an Early Classic period date on the basis of its similarity, and by proximity to several Early Classic period houselots within the study area.

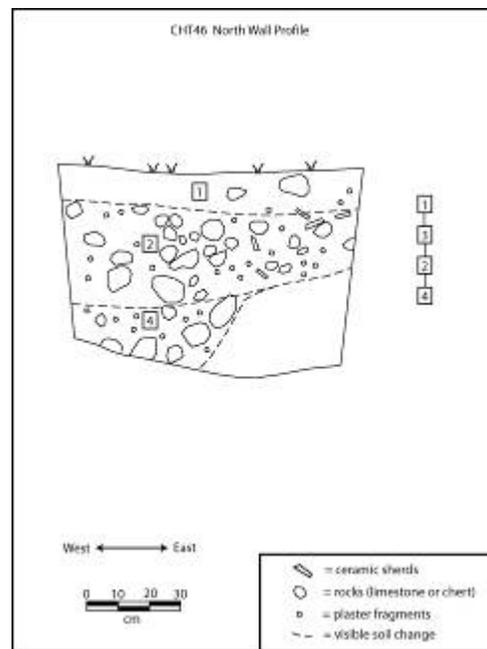


**Figure 8:** Flat terrain in the vicinity of Testpit 46

Within the sub floor context, however, and presumably deposited there at the time of the construction of the occupation platform itself, were ceramic fragments dated to the Terminal Classic period (Figures 10 and 11), in particular sherds assigned generally to the type Daylight Orange (R. Fry, personal communication). The location of these ceramics in a sealed context below the occupation surface strongly suggests that the construction of the low platform itself took place in or around the Terminal Classic Period.

The cobble fill matrices in the proximate auger holes as well as the

recovery of evidence, in Testpit 46, for the construction of a low plastered platform is thus interpreted to represent the occupation of this locality by Terminal Classic inhabitants, who for one reason or another did not construct a residential platform of sufficient stature to be preserved as a mounded feature on the modern landscape. The very existence of this occupation surface, however, in a location where occupation was previously unsuspected, contains certain implications worthy of further discussion.



**Figure 9:** Profile of Testpit 46, showing contexts and cobble subfloor ballast

## Discussion

From the perspective of analytical “cleanliness”, the fact of having a Terminal Classic period houselot stuck as a palimpsest on top of an otherwise completely Early Classic community is, to say the least, somewhat inconvenient. One of the underlying goals of the Chau Hiix Houselot Project was to be able access the notion of “community” as a concept relating to agency and daily practice (*sensu* Bourdieu 1977, Giddens 1984), and the Terminal Classic

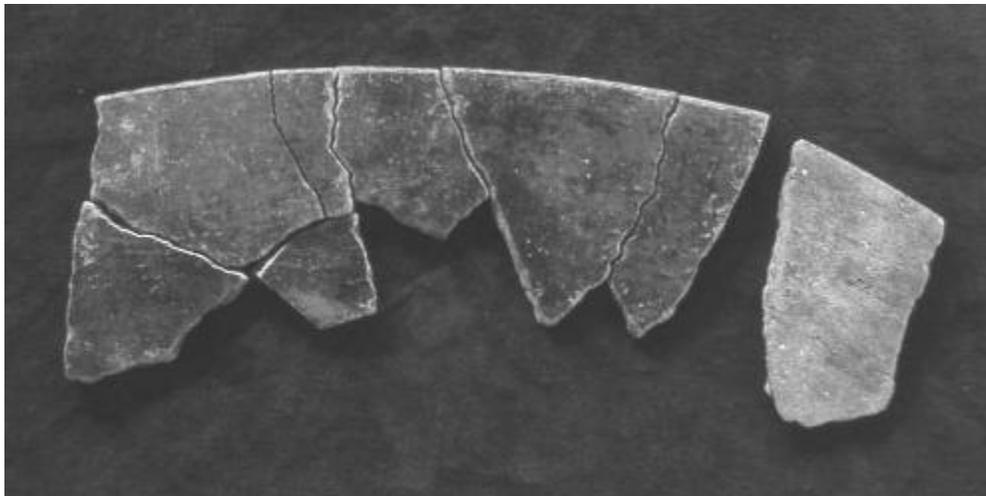
material was clearly not part of the Early Classic community. But there are certain implications in the discovery of this later residential space that are worth exploring.

The use of numerical formulae in the 1960's and 1970's to estimate ancient populations was based primarily on counts of surface mounds as a basic quantifiable datum (Casselberry 1974; LeBlanc 1971; Naroll 1962). Household archaeological research during the past two decades has repeatedly shown that entire domestic areas remain hidden from surface view at numerous Maya sites (Chase 1990; Cliff 1988; Johnston 1994; Pyburn 1989; Wilk and Wilhite 1991), and as a result, have the potential to skew the accuracy of population estimates based on surface features alone. The most straightforward solution to this potential issue has been to add a percentage to the visible mound total, which would account for the features that were invisible on the surface. Significantly, however, the general trend has been to add the *same* percentage to estimates from all different time periods. The underlying assumption, whether a conscious one or not, is that the behaviours and processes which ultimately made some residences visible and others invisible were constant throughout Pre-Columbian times. That assumption is something we may want to consider more carefully, because while apparently logical on the surface, it fails to take into account factors that operate at the level of settlement behaviour.

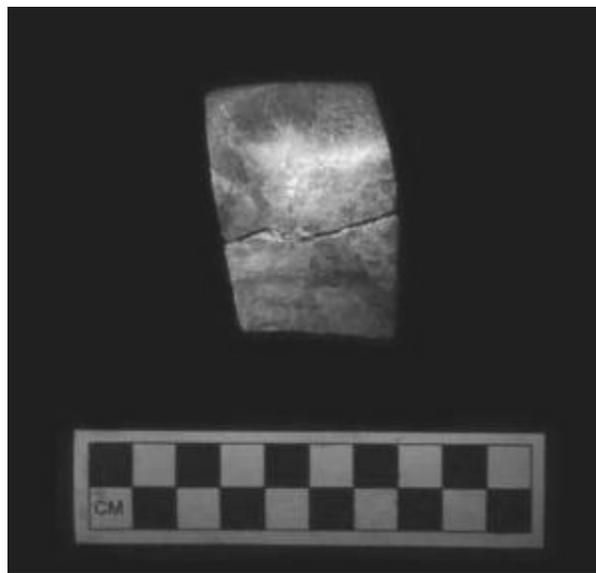
The reasons why some residential surfaces are visible as mounds and others are not depend on several factors. Some were certainly social, as in a conscious attention to symbols of status. The equation of status with stature in architecture, while probably not valid in all cases, has numerous precedents throughout the Maya area. The increased labour needed to build a large

platform as compared to a small one indicates the ability to garner such labour in the first place. On the other hand, other reasons for elevating a residential floor may have been more practical, as in a preference to maintain elevation against flooding. Certainly at Chau Hiix, no prominent ridges or hills exist within the extended settlement zone to offer natural defense against seasonal inundation. Still other reasons are certainly related to chronology, as it is well known that rural domiciles were sometimes built upon earlier floors, and thus gained a mounded appearance through accretion. Yet others may be completely post-occupational, such as the variable ability of soil to build up in one area as compared to another, and thus not related to the original residential strategy at all. The key point is that not one of these factors can be assumed to have remained constant throughout the history of the Maya civilization, even at single sites or within single local communities. Nevertheless, on the occasions that subsurface settlement features are considered in population estimates at all (and they usually are not), the methodology involves a certain percentage being added to the number of people that lived in a community at any given time. Reference to population using that same method was even employed (albeit briefly) by the Chau Hiix Houselot Project during discussions of the Early Classic Period community there: three houselots contained visibly mounded groups, and to that were added the two subsurface houselots discovered through posthole augering, with the conclusion that forty percent of the Early Classic population at the city of Chau Hiix might have lived in houselots that do not show on the surface today.

But such an additive process to the analysis of population encounters more serious problems when the surface



**Figure 10:** Terminal Classic Period plate fragments from Context 2 of Testpit 46



**Figure 11:** Daylight Orange Darknight Variety vessel fragment from Testpit 46

percentage is completely missing. Specifically, in the case of the Chau Hiix Houselot Project there are no surface traces of Terminal Classic houselots in that same area nor in the settlement that immediately surrounds it. While this may sound like an issue of mathematical semantics, the addition of forty percent (or fifty, or one hundred percent) to a nonexistent dataset still results in nothing. So the formula calculation for Early Classic houselots in this part of Chau Hiix would be inappropriate for the Terminal Classic, where the entire sample size (and

admittedly, the sample size is a single locality) comes from the subsurface universe.

The discovery of evidence for a strictly Terminal Classic houselot in a place where only those dating to the Early Classic were suspected raises the possibility that many more “invisible” Terminal Classic houselots will be found at Chau Hiix. If such a phenomenon turns out to be the case, then at some point it will be necessary to reassess our images of economic and social process at the end of the Classic Period in that city. Increasing percentages of ground-

level dwellings would, in that case, represent a residence shift that begged interpretation as a function of a behavioural change, a change, furthermore, that would likely inform our understanding of the events surrounding the Classic to Postclassic transition. Does a shift to ground-level dwellings also reflect economic or wealth shifts among Maya non-elites? Does the apparent reluctance of at least one Terminal Classic household to exploit the existing mounded platforms of a nearby abandoned Early Classic houselot have a meaning that we can discern? Are there any “invisible houselots” at Chau Hiix that date strictly to the Late Classic Period, or to the Postclassic Period, and if so, does the proportion of these non-mounded residences show any long term trends throughout the history of the city? The resolution to these and many other questions does not lie strictly in the realm of surface-based settlement pattern studies, because in at least one case at Chau Hiix, all of the available data have come from below the surface of the ground.

### **Conclusions**

The results of the Chau Hiix Houselot Project demonstrate strongly that systematic subsurface testing brings an important additional level of visibility to the total settlement universe. At Chau Hiix, even given the limited size of the area where such systematic augering was conducted, we were able to make inferences about parts of the Chau Hiix chronology for which information had been lacking up to that point, the Terminal Classic being one of those time periods.

Given the numerous reasons why people might decide to build their houses either on the tops of mounds or on flat ground, it seems reasonable to expect that one or the other preference might hold sway at some points in history and not in others. The intention of this discussion has certainly

not been to suggest that the small sample size currently available for Chau Hiix should be held up as a model for population estimation in the Terminal Classic across the Maya Lowlands. The data are presented here primarily because they are thought provoking in their characterization of a possible residence shift at a time when populations are assumed to have been falling at most Lowland Maya centres. If Terminal Classic period residences simply became more difficult to find on the modern landscape, then any assumption of population decline at Chau Hiix at the end of the Classic Period would be based on a methodological gap rather than an actual settlement pattern. Naturally it will take a good deal more similar fieldwork at Chau Hiix to determine whether or not this is the case. With any luck, further subsurface research in the Chau Hiix settlement will bring more surface-invisible houselots into the light where they belong.

*Acknowledgements* I would sincerely like to thank the Institute of Archaeology, National Institute of Culture and History for inviting me to participate in the 4<sup>th</sup> Belize Archaeology Symposium. Support for the fieldwork of the Chau Hiix Houselot Project was provided by the Indiana University Chau Hiix Archaeological Project, and by a research grant from the University of Calgary. This project would not have been possible without the assistance of the students of the 1999, 2001, and 2003 Indiana University Chau Hiix Fieldschools, and through the enthusiastic contributions of fieldworkers from the village of Crooked Tree. My research has benefited greatly from discussions with several of my colleagues on the Chau Hiix project, including especially Christopher Andres, Sarah Wille, Gabriel Wrobel, Alfredo Minnetti, Thomas Cuddy, and Leslie Sering. Dr. Anne Pyburn, Director of the Chau Hiix

Archaeological Project, has been a constant source of guidance and mentorship, and I thank her for her continuing support and suggestions.

## References Cited

- Andres, C. and A. Pyburn  
2004 Out of Sight: The Postclassic and Early Colonial Periods at Chau Hiix, Belize. In *The Terminal Classic in the Maya Lowlands*, edited by A. Demarest, P. Rice, and D. Rice. Westview Press, Boulder.
- Ashmore, W., J. Yaeger, and C. Robin  
2004 Commoner Sense: Late and Terminal Classic Social Strategies in the Xunantunich Area. In *The Terminal Classic in the Maya Lowlands*, edited by A. Demarest, P. Rice, and D. Rice, pp. 302-323. University Press of Colorado, Boulder.
- Bey, G., C. Hanson, and W. Ringle  
1997 Classic to Postclassic at Ek Balam, Yucatan: Architectural and Ceramic Evidence for Defining the Transition. *Latin American Antiquity* 8(3):237-254.
- Bourdieu, P.  
1977 1977 *Outline of a Theory of Practice*. Cambridge University Press, Cambridge.
- Casselberry, S.  
1974 Further Refinement of Formulae for Determining Population From Floor Area. *World Archaeology* 6(1):117-122.
- Chase, D.  
1990 The Invisible Maya: Population History and Archaeology at Santa Rita Corozal. In *Precolumbian Population History in the Maya Lowlands*, edited by D. Rice and P. Culbert, pp. 199-213. University of New Mexico Press, Albuquerque.
- Cliff, M.  
1998 Domestic Architecture and the Origins of Complex Society at Cerros. In *Household and Community in the Mesoamerican Past*, edited by R. Wilk and W. Ashmore, pp. 199-226. University of New Mexico Press, Albuquerque.
- Cook, P.  
1997 *Basal Platform Mounds at Chau Hiix, Belize: Evidence for Ancient Maya Social Structure and Cottage Industry Manufacturing*. Ph.D. Dissertation, University of Arizona, UMI Dissertation Services, Ann Arbor, Michigan.
- Cuddy, T.  
2000 *Socioeconomic Integration of the Classic Maya State: Political and Domestic Economies in a Residential Neighborhood*. Ph.D. Dissertation, Columbia University.
- Deal, M.  
1985 Household Pottery Disposal in the Maya Highlands: An Ethnoarchaeological Interpretation. *Journal of Anthropological Archaeology* 4:243-291.
- Giddens, A.  
1984 *The Constitution of Society: Outline of a Theory of Structuration*. University of California Press, Berkeley.
- Goldsmith, S.  
2005 Explorations of an Early Classic Community at Chau Hiix. *Research Reports in Belizean Archaeology* 2:  
2006 *The Houselots of Chau Hiix: A Spatial Approach to the Study of Non-Elite Domestic Variability at a Small Maya City*. Ph.D. Dissertation, Department of Archaeology, University of Calgary.
- Hayden, B. and A. Cannon  
1983 Where the Garbage Goes: Refuse Disposal in the Maya Highlands. *Journal of Anthropological Archaeology* 2:117-163.
- Johnston, K.  
1994 *The "Invisible" Maya: Late Classic Minimally Platformed Residential Settlement at Itzan, Peten, Guatemala*. Ph.D. Dissertation, Yale University, UMI Dissertation Services, Ann Arbor, Michigan.
- Killion, T.  
1990 Cultivation Intensity and Residential Site Structure: An Ethnoarchaeological Examination of Peasant Agriculture in the Sierra de los Tuxtlas, Veracruz, Mexico. *Latin American Antiquity* 1(3):191-215.

- LeBlanc, S.  
1971 An Addition to Naroll's Suggested Floor Area and Settlement Population Relationship. *American Antiquity* 36(2): 210-211.
- LeCount, L.  
1999 Polychrome Pottery and Political Strategies in Late and Terminal Classic Lowland Maya Society. *Latin American Antiquity* 10(3): 239-258.
- Lucero, L.  
2002 The Collapse of the Classic Maya: A Case for the Role of Water Control. *American Anthropologist* 104(3): 814-826.
- Masson, M.  
1997 Cultural Transformation at the Maya Postclassic Community of Laguna de On, Belize. *Latin American Antiquity* 8(4): 293-316.
- Naroll, R.  
1962 Floor Area and Settlement Population. *American Antiquity* 27(4): 587-589
- Pyburn, A.  
1989 *Prehistoric Maya Community and Settlement at Nohmul, Belize*. BAR International Series #509, Oxford.
- Robin, C.  
1999 *Toward an Archaeology of Everyday Life: Maya Farmers of Chan Noohol and Dos Chombitos Cik'in, Belize*. Ph.D. Dissertation, University of Pennsylvania, UMI Dissertation Services, Ann Arbor, Michigan.  
2003 New Directions in Classic Maya Household Archaeology. *Journal of Archaeological Research* 11(4):307-356.
- Webster, D. and A. Freter  
1990 Settlement History and the Classic Collapse at Copan: A Redefined Chronological Perspective. *Latin American Antiquity* 1(1): 66-85.
- Wilk, R. and H. Wilhite  
1991 The Community of Cuello: Patterns of Household and Settlement Change. In *Cuello: An Early Maya Community in Belize*, edited by N. Hammond, pp. 118 – 133. Cambridge University Press, Cambridge.
- Wright, L. and C. White  
1996 Human Biology in the Classic Maya Collapse: Evidence from Paleopathology and Paleodiet. *Journal of World Prehistory* 10(2): 147-198.

---

## 9 ***THE CURSE OF THE WARE: USING CERAMIC SYSTEMS IN BELIZE***

*James J. Aimers*

---

*The Terminal Classic period was one of rapid cultural change across the Maya lowlands. The subsequent Postclassic period was also one of intense interregional interaction across Mesoamerica, but this surely had roots in the Terminal Classic and earlier. Ceramics are one of the most important artifact classes for the identification of intersite and interregional interaction. Petrographic and chemical analyses can help trace the movement of vessels, but most ceramics were made and used locally, and the style of such ceramics can help map the exchange of ideas across the Maya world. In Belize, type-variety is the dominant method of ceramic classification for intersite stylistic comparison, but there are currently substantial inconsistencies in type-variety methods, especially in the use of ware classifications, that are hindering our ability to understand stylistic interaction. Here, I advocate the use of ceramic systems in Belize. Part of the original formulation of type-variety in the 1950's, but never adopted in Belize, ceramic systems can group stylistically similar ceramics from across the Maya world and help solve some of the problems of ware in type-variety. I illustrate the value of ceramic systems in assessing intra- and inter-regional interaction with specific Terminal Classic examples.*

### **Introduction**

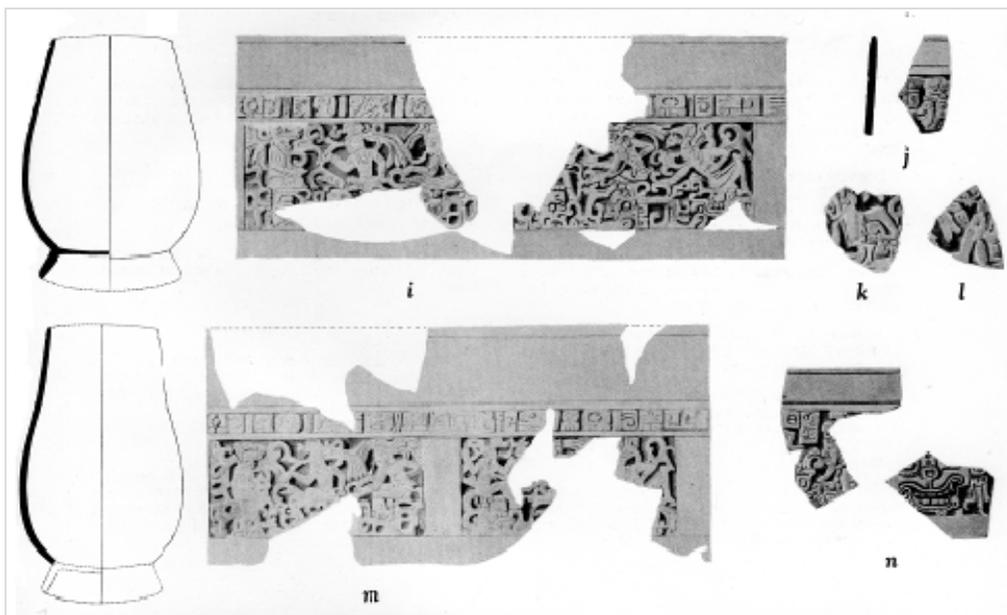
For those of us involved in the arcane and often solitary study of ceramic method and theory, the 2005 Society for American Archaeology (SAA) symposium *Squaring the Spheres* was unusually exciting. For two hours a number of archaeologists engaged in a lively, complex, and often impassioned discussion that made one thing clear: the ware concept, once a somewhat fuzzy but benign part of type-variety ceramic classification has been transformed since the 1960's into a snarling beast that now threatens our attempts to use Maya ceramics for anything other than description and chronology, and may even threaten those basic roles. In response, I would like to advocate the adoption of ceramic systems in Belize.

In ceramic systems one uses style (especially surface finish and decoration) to group similar ceramics without reference to their compositional and technological characteristics (i.e., paste or fabric). Furthermore, ceramic systems designations can provide a preliminary classification of

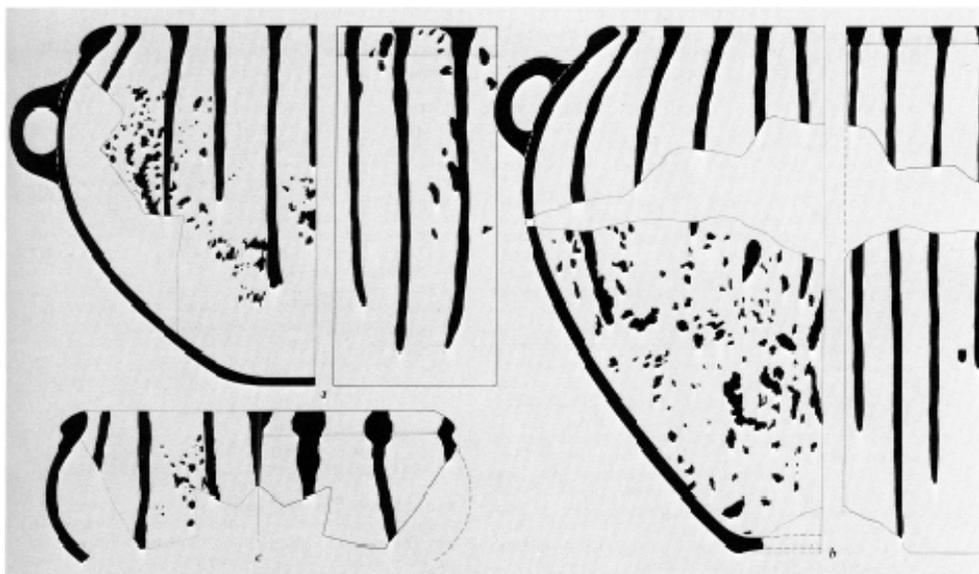
individual pots or sherds while ware, group, and type designations are pending. Ultimately, systems designations tell us something about intersite and interregional interaction. Petrographic and chemical analyses can help trace the physical movement of vessels but since the vast majority of Maya ceramics were made and used locally (see e.g., Arnold 1980; Foias 2002; Fry 2003; LeCount, et al. 2002), we must continue to refine our use of the style of locally-made ceramics to map the exchange of ideas between sites and regions. Although the ceramic system concept was part of the original formulation of type-variety in the 1950's (see Wheat, et al. 1958), to my knowledge it has never been used in Belize. Ceramic systems will not kill the beast that is ware, but it may at least provide a way to compare ceramics among sites and regions without depending upon ware.

### **The Nature of the Beast**

Prudence Rice (1976) identified the basic problem with ware three decades ago:



**Figure 1:** Pabellon Modeled-carved from Uaxactún (Smith 1955:Figure 88 i-n )



**Figure 2:** Balantun Black-on-slate from Chichén Itzá (Smith 1971:Figure 14a-c)

wares have been defined in terms of both paste and surface, yet these are technologically independent and should be analysed separately. Since then, Rice has promoted the concept of “paste ware” (Rice 1987) to address this problem and her work

with Leslie Cecil in the Petén Lakes has shown that paste wares can help address questions about ancient Maya social, political, and economic organization (see e.g., Cecil 2004).

Although most people seem to agree that surface colour is an unreliable criterion upon which to base ware designations, and Rice's 1976 article is widely cited, not everyone agrees with the emphasis she places on paste. This was brought into focus at the 2005 SAA symposium when I raised a problem that occurs frequently in ceramic analysis: How does one classify two vessels that are stylistically very similar, or identical, but have visibly different pastes? This happens both within assemblages from single sites and, more often, between sites. I was interested to find that there were two answers given to this question, and both methods are currently in use in Belizean archaeology. Basically, the differences revolve around whether ware is used as a hierarchical category above group, or is used modally, like shape, and thus non-hierarchically.

### **Lumpy and Splitty**

The "lumpy" answer was to place the two pots in the same type (and thus the same group and ware), but to note the paste variation as part of the type description. Thus, Lumpers treat paste as a modal characteristic that crosscuts types, as vessel form or lip shapes do, and there is plenty of evidence that pastes often do crosscut types. I asked if the fabric variation should then be moved down to the varietal level and some people felt this was reasonable, others did not. Willey et al. (1967:304) foreshadowed this approach when they expressed reservations about ware as a hierarchical concept above group. Later, Ball (1977:3) noted that: "it is taxonomically conceivable that variety differences within a type could be of technological (ware) magnitude, i.e., that a single type could crosscut two or more wares via two or more technologically distinguishable varieties."

The "splitty" contingent noted that by de-emphasising paste, the lumpy approach downplays important production-

related questions such as the identification of multiple production locales. They also noted that type-variety is a taxonomic classification system and thus *must* be hierarchical and "the goal of classification is to create high within-group homogeneity" (Rice 2005:4). The Splitters would place the two stylistically similar pots in different wares, and therefore in different groups and types (and possibly varieties). This is the dominant hierarchical type-variety method (see e.g., Gifford 1976; Sabloff and Smith 1970; Willey, et al. 1967:304) but Lumpers have abandoned it in part because it has the end result of creating so many types. All this splitting, the Lumpers countered, just makes understanding conceptual links between pottery types more difficult.

At least two observations flow from this apparent impasse. The first is that the way one approaches type-variety has much to do with the questions one is asking. If you are interested in the stylistic choices consumers make and their implications for intersite interaction you are likely to be a Lumper; if you are interested in production-related questions like the number of workshops producing a given style around a site you are likely to be a Splitter. The nature of the sample is also relevant (e.g., eroded sherds without slips are likely to lead to splitting based on paste). Several participants acknowledged these issues and many felt comfortable that the ware problem has led to at least two separate methods in type-variety. I was not as comfortable with this because it suggested to me that we are creating confusion about exactly what groups, types and varieties represent and endangering our ability to consistently compare ceramics from different sites.

A third possible solution to the "Curse of the Ware" is to disregard ware entirely (Willey, et al. 1994). I agree with Rice that the old surface-plus-paste version of ware must be discarded, but I worry about "throwing the baby out with the bathwater."

It seems to me that observable differences in paste should not simply be ignored because they undoubtedly mean something and these differences are going to be considered eventually if one is looking at the pottery closely. My opinion is that if some Mayanists continue to deal with paste variation at the ware level while others place it at the type or variety level, or not at all as they choose, we are creating a situation that creates more problems than it solves. Essentially we will no longer know what others mean when they say “Type X” and one of the major advantages of type-variety—perhaps THE major advantage—is that it provides common language (or a form of shorthand) that allows archaeologists at different sites to talk to each other about ceramics. I suspect we are about to create a monster of a problem that will be very difficult to solve once the results of these varied methods become fossilized in print, especially since methods are rarely described in detail.

### **Wither Ware at Lamanai?**

On the Lamanai project we have been discussing these issues intently (e.g., Aimers and Graham 2005). From the start of the project in 1998, the intent was to approach the ceramics in a number of different ways and to employ multiple, independent analyses and then to review the results before actually proposing any one or more kinds of classifications. Our approaches include contextual analysis along the lines of Pendergast and Graham’s already published work (e.g., Graham 1987; Pendergast 1985), petrographic analysis (Howie 1996), iconographic analysis (John 2007), and type-variety/ modal analysis (Powis 2002). In the next year or so we will compare our results and see where there are points of contrast and overlap.

### **Lumping While Splitting**

In terms of the type-variety classification at Lamanai, I believe I have come to a compromise between lumping and splitting, although my thoughts on the method described here are evolving and open to revision. Currently, I plan to place stylistically similar vessels in pastes that are macroscopically different along at least two axes of variation (e.g., coarse tan paste versus fine red paste) in different wares (and thus sometimes create new groups, types, and possibly varieties) following the dominant splitty type-variety method. But what about macroscopically identical pastes that have microscopic or chemical differences; that is, different paste recipes? These different paste recipes have tremendous potential to tell us about production location and even about the presence of different pottery making groups (for example, workshops) in or around the site. I want to acknowledge these recipes in my classification, but I simply can’t place these microscopic differences at the traditional high level of ware for at least two reasons:

1. We would have to conduct petrography on virtually our entire sample and although this is an admirable goal, it is not feasible in terms of time and money,
2. Creating wares for each paste recipe identified by petrography would create an unmanageable number of groups, types, and varieties.

Thus, microscopic paste differences will be split at the lowest hierarchical level, variety, which also means they are lumped at the type level as some Lumpers do. Nevertheless, I pulled back from placing *all* paste variation as modal qualities of types, or at the varietal level when I revisited Rice and Cecil’s work in the Petén Lakes. There, they have several stylistically similar types of Postclassic red dishes, in at least three macroscopically different pastes. These macroscopically identifiable paste wares (in

Rice's terms) align well with ethnohistorically known socio-political groupings around the lakes. It appears that the three groups were interacting enough to share styles but maintained different paste recipes and production techniques (Cecil 2001). If Rice and Cecil had simply ignored macroscopic paste variation and placed all these similar red dishes in one ware as the Lumpers might, they would have missed a valuable opportunity to tease out social groupings in the Petén Lakes (Cecil 2001, Rice 2005).

One more crucial issue is that if I try to use paste ware as an important criterion in my classification, I cannot reasonably identify a type in the Lamanai collection as one named at, say, Mayapán, without having physically examined sherds from Mayapán. Furthermore, Howie's work with clay sampling and petrographic analysis at Lamanai suggests that most clays used were from near the site, although in at least one case temper may have been imported (Howie, et al. 2005). Although these results are from preliminary reports, it seems likely that most of the pottery at Lamanai was made locally. Does it make sense, then, to give ceramics from Lamanai names from other sites when the paste wares are likely to differ due to different production locations, techniques, and raw materials? This at times has seemed an almost irresolvable issue in my analysis. However, following the work of Patricia Urban and others in Honduras, I've adopted ceramic system as a partial solution to this problem.

### **Ceramic Systems**

A ceramic system was defined in an unpublished 1959 paper by Phillips and Gifford (quoted in Forsyth 1983:9) as a "horizontal arrangement of roughly contemporaneous pottery types that are related in particular from the standpoint of design style and surface manipulation and which range over a wide area." Therefore, I

use overall stylistic similarities to link the ceramics of Lamanai to ceramics elsewhere through system. Even if I give some types Lamanai-specific names because they have distinctive pastes, systems designations will tell other archaeologists where to look for stylistically (conceptually) analogous types.

I may eventually further split the Lamanai examples into one or more-Lamanai specific varieties based on microscopic or chemical technological qualities, but my initial paste ware categorization is based on what can be detected by touch, the naked eye, and a 10X lens. This is in part a practical decision: to create paste ware designations based on qualities that are not readily observable in the field is to require petrography by anyone wishing to compare their ceramics to those of Lamanai, and also runs the risk of creating a huge number of wares, groups and types. The rationale is also theoretical - my questions at Lamanai at this point concern the site's chronology and its relationship with other sites. Howie is addressing questions of manufacture at the site and for her paste recipes are more important. Below, I discuss two well-known Terminal Classic types in a systems perspective.

### **Pabellon Modeled-carved and it's Imitations**

Pabellon Modeled-carved (Figure 1) was initially classified as part of the Altar Group of Fine Orange Ware at Uaxactún (Smith 1958), but similar ceramics have been found in most of the lowlands as far southeast as the Ulúa Valley (Lopiparo, et al. 2005) in a variety of pastes other than Fine Orange and in shapes and designs that also differ from the Petén. In the Petén lakes district imitation Pabellon Modeled-carved occurs in four distinct pastes (Rice and Rice 2004). Setting aside formal (or stylistic) differences for a moment, if you follow the standard "splitty" rules of type-variety, ceramics that look like these in anything

other than the distinctive Fine Orange Ware paste must be give different ware, group, type, and variety names. Awe (1985), Graham (1987), Helmke et al. (1998), and others have proposed that the Belize Valley versions of Pabellon Modeled-Carved are distinctive enough to deserve a new designation in part because they are generally made of calcite paste. There is also a similar type in a fine red paste in the Cehpech sphere called Sahcaba Modeled-carved, but this type also occurs in the Petén (including Uaxactún) and could occur here in Belize (Ball 1976). Further complicating the issue is the fact that Sahcaba Modeled-carved is placed in the Teabo Group of Puuc Red Ware at Uaxactún (Smith and Gifford 1966) and Mayapán (Smith 1971) whereas it is placed in the Terminal Classic Tinaja Group of Petén Gloss Ware just over the border from Belize in the Mopán drainage (personal observation, Atlas collections, Dolores, Guatemala; Laporte 2006:18). Thus, one question raised for analysts who find similar samples in Belize is, simply, what to call them.

This is where I think ceramic systems have great potential for type-variety. Even using drawings or photographs it is easy to tell if a vessel is stylistically analogous to Pabellon Modeled carved. One can then place the new sample in the Pabellon Modeled-carved System and then—and this is the part that I think is really advantageous—leave it at that until a more detailed paste analysis can be conducted and more accurate names assigned (or created, if the paste is “new”).

Even the few examples of modelled- or molded-carved sherds and vessels I have seen from the Belize come in a range of pastes. Some appear to be volcanic ash tempered, others appear to be calcite tempered and some are Fine Orange (i.e., “true” Pabellon Modeled-carved). However, systems assignments alone tell us a great deal about what these ceramics represent:

some sort of interaction between the Belize Valley and the northwestern Petén and probably the Gulf Coast. Nevertheless, system designations carry absolutely no connotations regarding production locale and they don’t require ware, group, type or variety designations. Yet, I believe that systems designations alone have the added potential to be used in creating sphere designations, which ultimately describe interaction among sites and between regions.

### **Black-on-Slate Types**

The following is an experiment with a more detailed classification that includes both system *and* paste ware. I offer this for discussion as a way to avoid the surface-plus-paste problem inherent in the traditional use of ware but this is not meant to be the definitive classificatory scheme—just one of several possibilities.

Smith (1971) created two different black-on-slate types at Chichén Itzá and Mayapán based in part on now-outdated chronological distinctions between the Cehpech and Sotuta complexes. Thus, Sacalum Black-on-slate was placed in the Slate Muna group of Puuc Slate Ware, while Balantun Black-on-slate was placed in the Slate Dzitas group of Chichén Slate Ware. These are minor spatial variants of the same stylistic idea, yet their different ware designations obscure this connection. Furthermore, there are black-on-slate ceramics in coastal Belize (personal observation, Caye Coco collections), in the Petén, and possible eroded sherds at Lamanai - these should be linked to the types from northern Yucatán. In the specific case of Balantun Black-on-slate from Chichén Itzá, (Figure 2) a systems perspective could create a designation like the following (although variations in the classificatory strategy below the system level are possible):

**System:** Black-on-Slate System, based on surface, form, decoration, etc. The

naming conventions for systems normally dictate that the system be named after the first published type. In this case both types were published simultaneously, so I have used only the more descriptive part of the name they have in common. This is a minor issue that may have to be addressed further, perhaps in reference to some of the *ware* names from Brainerd (1958) (e.g., Holoctun). However, Brainerd did not assign *type* names so this minor issue is rather complicated.

**Paste Ware:** Chichén Slate Paste Ware. Generally, paste wares should be based on naked eye and 10 X lens observation in terms of texture, color, hardness, temper (kind, quantity and size), presence-absence of firing core, thickness, and porosity (see Rice 1976). Smith (1971:28) stated that although Chichén Slate Ware differs little from Puuc Slate Ware superficially, the paste differences are macroscopic, and I observed them in samples at INAH Mérida in 2006. Thus, this distinction is based on paste color and texture (as in paste ware), not on surface.

**Group:** Slate Dzitaz Group.

**Type:** Balantun Black-on-slate.

**Variety:** Balantun Variety, and possibly other varieties based on petrography.

The point here is that black-on-slate ceramics from Belize can be placed in the Black-on-slate System right away, and then assigned to existing paste wares, or given new paste ware names (and thus group, type and possibly varietal names) after comparison with the established types.

### Silver Bullets and Conclusion

Can we kill the ware-beast? On one hand the answer is easy: abandon the ambiguous and problematic notion of ware that Rice described in 1976. On the other hand the solution is much more difficult. While we should surely disconnect paste and

surface in ware, I don't think we can just ignore the visible paste qualities of the sherds or vessels we study so I don't think paste can be—or ever is, in a thorough type-variety analysis-- abandoned entirely. For example, as similar as Balantun Black-on-Slate and Sacalum Black-on -Slate are superficially, there are visible differences in the pastes suggesting differences in production choices that may relate to differences between Puuc and Itzá people. The same is probably true of Pabellon Modeled-carved, Sahcaba Modeled-carved and Belize Modeled- (or Molded-) carved. And we can't just wait for petrography to sort all this out. To start, when identifying types at a site in terms of previously named types, it makes sense to check that the pastes are at least broadly similar to the naked eye or with a magnifying glass. Although this seems obvious it is not an easy task to locate and handle sherds from different sites, and in some cases it is impossible. In the summer of 2006 I visited many collections all over the peninsula, but the planning took over a year.

If there is general agreement on all of this at Lamanai it is that there probably isn't a single solution to ceramic analysis generally or even type-variety specifically. One of the basic steps, though, for any project using type-variety is to tame the ware concept back into something manageable and once again helpful. I am convinced that ceramic system designations do much of what ware was meant to do, without most of its problems. My ideas continue to evolve, but I believe that ceramic systems can help in resolving problems with type-variety that, as the quotation that ends this paper shows, have been running amok for almost half a century:

“During the past 20 years, the number of named pottery types in the Southwest has increased at such a rate that it is now virtually impossible for an archaeologist to know and be familiar with more than a small

percentage of them. Some of these types are totally new, but surprisingly large number represent refinements in terminology or segregations from more inclusive categories, resulting from further study and increasingly complex technological analyses. This proliferation of named types has alarmed many archaeologists. There can, however, be no legitimate doubt that if the intricate ceramic history of the Southwest and other areas of the New World is to be understood, research analysts must be free to break down their material to as fine a point as necessary in order to localize in time and space the infinitesimal variants of pottery which constitute, with other aspects of material culture, the documents of regional prehistory. *It is equally clear that some method must be found to integrate the smallest units into meaningful groupings of a larger order. Groupings of this kind are necessary in the derivation of cultural interpretations from archaeological materials*" (Wheat, et al. 1958, italics mine)

*Acknowledgements* I would like to thank the Belize Institute of Archaeology for supporting my research for close to 20 years, and Dr Elizabeth Graham, Dr. Linda Howie, and the other members of the Lamanai Archaeological Project for many (surprisingly) stimulating discussion of ceramics typology since 2002. Comments on the content of this paper by Dr. Arlen Chase and Dr. Patricia McAnany at the BAS were most useful. Finally, I would like to acknowledge the many archaeologists in Belize, Mexico, and Guatemala who have co-operated in this research, including Dr. Jaime Awe, Dr. Prudence Rice, Dr. Leslie Cecil, Dr. Joseph Ball, Dr. Marilyn Masson, Dr. Juan Pedro Laporte, Dr. Carlos Peraza, Dr. William Folan, Dr. Susan Milbrath, Dr. Adriana Velasquez Morlet, Dr. James Garber, and Dr. Rafael Cobos.

## Reference Cited

- Aimers, J. J. and E. Graham  
2005 Type Variety on Trial: Experiments with Classification and Meaning at Lamanai, Belize. Paper presented at the Society for American Archaeology 70<sup>th</sup> Annual Meeting, Salt Lake City.
- Arnold, D. E.  
1980 Localized Exchange: An Ethnoarchaeological Perspective. In *Models and Methods in Regional Exchange*, edited by R. E. Fry, pp. 147-150. Society for American Archaeology SAA Papers No. 1, Washington.
- Awe, J. J.  
1985 *Archaeological Investigations at Caledonia, Cayo District, Belize*. Unpublished Master's Thesis, Trent University.
- Ball, J. W.  
1976 Ceramic Sphere Affiliations of the Barton Ramie Ceramic Complexes. In *Prehistoric Pottery Analysis and the Ceramics of Barton Ramie in the Belize Valley*, edited by C. A. Gifford, pp. 323-330. Memoirs of the Peabody Museum of Archaeology and Ethnology Volume 18, Harvard University, Cambridge.
- 1977 *The Archaeological Ceramics of Becan, Campeche, Mexico* 43. Middle American Research Institute, Tulane University, New Orleans.
- Brainerd, G. W.  
1958 The Archaeological Ceramics of Yucatán. *Anthropological Records, University of California* 19.
- Cecil, L.  
2001 *Technological Styles of Late Postclassic Pottery from the Central Petén Lakes Region, El Petén, Guatemala*. Unpublished Ph. D. Dissertation, Southern Illinois University.
- 2004 Inductively Coupled Plasma Emission Spectroscopy and Postclassic Petén Slipped Pottery: An Examination of Pottery Wares, Social Identity and Trade. *Archaeometry* (46):385-404.

- Foias, A. E.  
2002 At the Crossroads: The Economic Basis of Political Power in the Petexbatun Region. In *Ancient Maya Political Economies*, edited by M. A. Masson and D. Freidel, pp. 223-248. Altamira Press, Walnut Creek CA.
- Forsyth, D. W.  
1983 *Investigations at Edzna, Campeche, Mexico, Volume 2: Ceramics*. Papers of the New World Archaeological Foundation No. 46., Provo, Utah.
- Fry, R. E.  
2003 Social Dimensions in Ceramic Analysis: A Case Study from Peripheral Tikal. *Ancient Mesoamerica* 14:85-93.
- 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.
- Graham, E.  
1987 Terminal Classic to Early Historic Vessel Forms from Belize. In *Maya Ceramics: Papers from the 1985 Maya Ceramic Conference*, edited by P. M. Rice and R. J. Sharer, pp. 73-98. BAR International Series 345(i), Oxford.
- Helmke, C., P. R. Colas and J. J. Awe  
1998 Comments on the Typology, Epigraphy, and Iconography of the Actun Tunichil Muknal Vase and Belize Valley Modeled-Carved Vessels. In *The Western Belize Regional Cave Project: Report of the 1997 Field Season*, edited by J. J. Awe, pp. 93-140. Department of Anthropology Occasional Paper Number 1, University of New Hampshire., Durham, New Hampshire.
- Howie, L., T. Powis and E. Graham  
2005 Can you Judge a Pot by its Color? Typological Groupings Under the Microscope at Lamanai, Belize. Paper presented at the Society for American Archaeology 70th Annual Meeting, Salt Lake City.
- Howie, L. A.  
2006 *Ceramic Production and Consumption in the Maya Lowlands During the Classic to Postclassic Transition: A Technological Study of Ceramics at Lamanai, Belize*. Unpublished Ph.D. Thesis, University of Sheffield.
- John, J. R.  
2007 *Postclassic Iconography at Lamanai, Belize, Central America*. Unpublished Ph.D. Dissertation, University College London.
- Laporte, J. P.  
2006 *Secuencia Cerámica Atlas Arqueológico de Guatemala Sureste de Petén*, Unpublished Manuscript, Dolores, Peten.
- LeCount, L. J., J. Yaeger, R. M. Leventhal and W. Ashmore  
2002 Dating the Rise and Fall of Xunantunich, Belize: A Late and Terminal Classic Lowland Maya Regional Center. *Ancient Mesoamerica* 13(1):41-63.
- Lopiparo, J., R. Joyce and J. A. Hendon  
2005 Terminal Classic Pottery Production in the Ulúa Valley, Honduras. In *Geographies of Power: Understanding the Nature of Terminal Classic Pottery in the Maya Lowlands*, edited by S. L. Varela Lopez and A. E. Foias, pp. 107-120. British Archaeological Reports International Series 1447, Oxford.
- Pendergast, D. M.  
1985 Stability Through Change: Lamanai, Belize, from the Ninth to the Seventeenth Century. In *Late Lowland Maya Civilization: Classic to Postclassic*, edited by J. A. Sabloff and E. W. Andrews V, pp. 223-249. School of American Research, University of New Mexico Press, Albuquerque.
- Powis, T. G.  
2002 *An Integrative Approach to the Analysis of the Late Preclassic Ceramics at Lamanai*. Unpublished Ph.D. Dissertation, University of Texas, Austin.
- Rice, P. M.  
1976 Rethinking the Ware Concept. *American Antiquity* 41(4):538-543.  
1987 *Macanche Island, El Petén, Guatemala: Excavations, Pottery, and Artifacts*. University of Florida Press, Gainesville.  
2005 Type-Variety: What Works and What Doesn't. Paper presented at the Society For

- American Archaeology 70<sup>th</sup> Annual Meeting,  
Salt Lake City.
- Rice, P. M. and D. S. Rice  
2004 Late Classic to Postclassic  
Transformations in the Petén Lakes Region,  
Guatemala. In *The Terminal Classic in the  
Maya Lowlands: Collapse, Transition, and  
Transformation*, edited by A. Demarest, P.  
M. Rice and D. S. Rice, pp. 125-139.  
University Press of Colorado, Boulder.
- Sabloff, J. A. and R. E. Smith  
1970 Ceramic Wares in the Maya Area: A  
Clarification of an Aspect of the Type-  
Variety System and Presentation of a Formal  
Model for Comparative Use. *Estudios de  
Cultura Maya* 8:97-115.
- Smith, R. E.  
1955 *Ceramic Sequence at Uaxactún,  
Guatemala* Publication 20. Middle American  
Research Institute, Tulane University, New  
Orleans.
- 1958 The Place of Fine Orange Pottery in  
Mesoamerican Archaeology. *American  
Antiquity* 24(2):151-160.
- 1971 *The Pottery of Mayapán*. Papers of the  
Peabody Museum of Archaeology and  
Ethnology 6(4). Harvard University,  
Cambridge.
- Smith, R. E. and J. C. Gifford  
1966 *Maya Ceramic Varieties, Types, and  
Wares at Uaxactún: Supplement to "Ceramic  
Sequence at Uaxactún, Guatemala"*.  
Publication 28, Middle American Research  
Institute, New Orleans.
- Wheat, J. B., J. C. Gifford and W. W. Wasley  
1958 Ceramic Variety, Type Cluster, and  
Ceramic System in Southwestern Pottery  
Analysis. *American Antiquity* 24(1):34-47.
- Willey, G. R., T. P. Culbert and R. E. W. Adams  
1967 Maya Lowland Ceramics: A Report  
from the 1965 Guatemala City Conference.  
*American Antiquity* 32(289-315).
- Willey, G. R., R. M. Leventhal, A. Demarest and W.  
L. Fash
- 1994 *Ceramics and Artifacts from  
Excavations in the Copan Residential Zone*.  
Papers of the Peabody Museum of  
Archaeology and Ethnology Vol. 80.  
Harvard University, Cambridge.

---

## 10 FRESH VOLCANIC GLASS SHARDS IN THE POTTERY SHERDS OF THE MAYA LOWLANDS

*Anabel Ford and Frank Spera*

---

*Pristine, fresh volcanic ash has been known as a dominant tempering agent in the Late Classic Maya (AD 600-900) ceramics. Archaeologist Anna O. Shepard first identified volcanic glass in Maya pottery sherds and struggled to solve the mystery of its origin as the lowland Maya lived on carbonate bedrock with the closest volcanic sources 350 km away. How did relatively large volumes (~ 10<sup>6</sup> m<sup>3</sup>) of volcanic ash become available for manufacturing of ceramic products for the entire Late Classic Period? This question has never been answered. While it has been accepted that the ash was of non-local origin, this anomaly has never been explained. Identification of the source of the volcanic ash used by the ancient Maya has implications for the economy of ceramic production as well as the ecology of the Maya forest. Resolving the origin of the unexplained appearance of volcanic ash in the Late Classic, coincident with the apex of Maya civilization, will contribute directly to our understanding of the development of the Maya society and address the impacts of volcanic activity at a distance.*

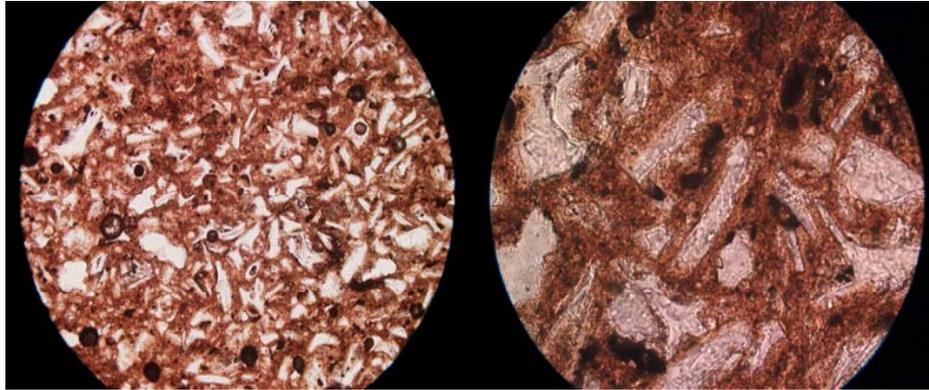
### **Introduction:**

It was 1930 and the researcher Anna O. Shepard, then at the Carnegie Institution of Washington, applied innovative geological techniques to archaeological problems, and so doing discovered that there was volcanic ash in pottery from the non-volcanic limestone Maya lowlands (Shepard 1937). This incongruity – geologically recent volcanic glass used as temper with clay derived from geologically ancient marine limestone – presented an anomaly that followed her throughout her career. Shepard's challenge to identify the source(s) for the volcanic ash in the limestone Maya lowlands and recover evidence of cultural and environmental influences preserved in the potter's craft (Shepard 1936 cited in Cordell 1991) was the basis of our research endeavour. We have begun an inquiry to evaluate the origin of the volcanic ash used in ancient Maya pottery production with the use of 21st century geochemical tools and have completed the first phase of this research, combining microprobe with classical petrographic techniques to reveal new dimensions to the issue of origins of the

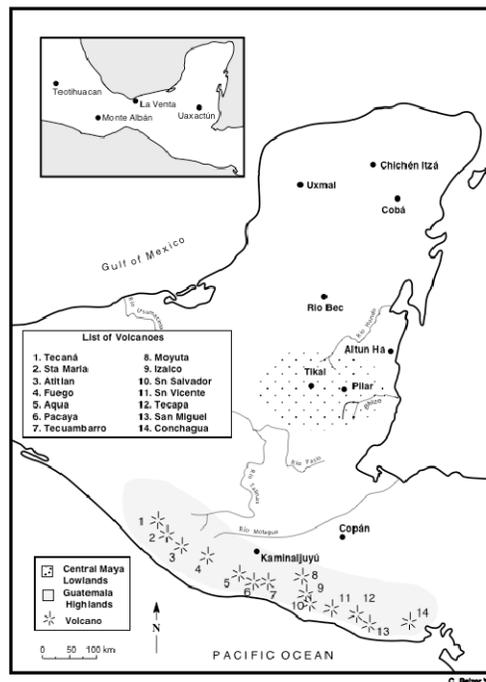
ash temper. The resolution of the problem of volcanic ash shards in Maya pottery sherds bears significantly on our understanding of the development of the Maya civilization.

### **Historical View of Volcanic Ash and the Maya**

Shepard's identification of diagnostic pristine volcanic glass shards is unexpected for clay deposits derived from chemical weathering of the Cretaceous/Eocene carbonates of the Maya area. Consequently volcanic ash has been interpreted as exotic tempering agent (Shepard 1937, 1951, 1956, 1962; Sunahara 2003). According to Shepard, and confirmed by all subsequent research, ceramics tempered with volcanic ash occurred predominantly in association with the Late Classic Period (c. AD 600-900). The consistency of the pastes pointed to a reliable and steady procurement source over the long period of use (Shepard 1939, 1942; in Smith 1955). Decades have passed since Shepard discovered this incongruity. We seek to rectify this.



**Figure 1.** Photomicrograph of Sherd #1902 site 272-136 L 10x (2mm field of view) and R 40x (field of view is 0.2 mm). Glass is abundant, visible as the sharp edged white shards embedded in the clay matrix of the sherd. Glass is chemically and mechanically unstable material; the abundance of pristine glass shards is consistent with aeolian deposition (air fall); the glass shapes have no evidence of weathering or fluvial transport.



**Figure 2.** Volcanoes of the Central American Guatemala Highlands and Central Maya Lowlands of El Pilar and Tikal

Late Classic Maya ceramics have been well-described in the literature beginning with the Carnegie studies that involved Anna O. Shepard, through the intensive Barton Ramie project (Willey et al. 1965; Gifford et al. 1976), and up into the active projects in the region today (e.g., Jones 1984; LeCount 1996; Lucero 2001, Sunahara 2003). Ceramics from the earliest

periods of the Preclassic, from c. 1000-800 BC through AD 250 are dominated by the local calcite (limestone) tempering as are those of the Early Classic (c. AD 250-600). The Maya mastered the unstable additive and produced finely made ceramics as well as the necessary cooking and storage vessels. It is in the Late Classic that there is a distinction of ceramic wares with the

abrupt presence of serving bowls and plates as well as water jars tempered with volcanic ash, leaving the cooking and storage vessels consistently tempered with the local calcite. Ceramic pastes tempered with volcanic ash are remarkably uniform in appearance and texture permitting a rough identification based on inspection and simple methods such as reactivity with hydrochloric acid (Ford and Glicken 1987; Ford and Rose 1995; LeCount 1996:360; Gifford et al. 1976:255). Gifford marked ash-tempered ceramics as British Honduras Volcanic Ash Ware (Gifford et al. 1976:255-267). These pastes are found widespread at every residential unit occupied in the Late Classic from the environs of the major center of Tikal to the major center of El Pilar, used in the production of everyday wares such as bowls, jars, and plates, as well as in the production of specialized elite polychromes.

These distinctive wares of Maya ceramics, when examined petrographically (Figure 1), display fresh, unaltered volcanic glass, and retain all the characteristics of pristine volcanic air fall tephra (see Ford and Glicken 1987; Ford and Rose 1995). Without a doubt, the ultimate source of the volcanic ash in the Late Classic Maya ceramics must have been the active volcanoes themselves. Yet how did the volcanic ash get to the limestone lowlands, more that 350 kilometres away? (Figure 1)

Volcanic ash may be chemically sourced to the Central American Highlands (CAH) or the Mexican Volcanic Belt (MVB), just as obsidian is sourced, but it is unlikely that the distant deposits more than 350 km away were the source of ash in the Maya ceramics (Figure 2). Arnold's (1985) research on resource procurement for ceramic production provides a benchmark. Clays are heavy and make up the principal material of pottery; 84% of clay sources are collected within 7 km of production. Similarly temper is collected with 97% of

the sources coming from under 9 km and none more than 25 km away. Only slips, paints, and décor are a comparatively minor component of the potter's craft, and sources can come from much greater distances; 56% of the resources were found within 30 km distance of where the ceramics were made (Arnold 1985:50-52).

What were the sources of volcanic ash that provided a ready and continuous supply for the Late Classic Maya? Importing volcanic ash from long distances would be prohibitive (Santley 2004) and the volcanological analyses support the hypothesis of an ash fall source (Ford and Rose 1995). There may have been a source or sources unidentified today but accessible and used by the Late Classic Maya. An ash fall source is logical and ash has fallen in the lowland Maya region from evidence in the Petén lake cores (Leyden et al. 1993) and records of the 1982 El Chichón (Espindola et al. 2000). Ash fall at once resolves procurement issues and provides a ready explanation for the morphology of the glass shards in the Maya ceramics.

## **Geological and Archaeological Issues**

### **Geological**

Advantages of volcanoes may be overlooked when considering immediate and direct impacts of volcanism. Benefits of volcanic eruptions include long-term positive effects related to soil fertility, well known from geothermal resources in volcanic regions all over the world (Williams and McBirney 1979; Ping 2000; Arnorsson 2000); and the availability of volcanic products for commerce and industry (Dehn and McNutt 2000). Both prehistoric and modern societies in the vicinities of volcanoes have used these products in various ways: volcanic ash as temper in ceramics (Arnold, 1985:59; Shepard, 1956:4,378- 381), obsidian (volcanic glass) for cutting implements or as

semi-precious stone in jewellery (Gaxiola and Clark 1989), and other extrusive rocks have been used in construction, as stone implements or abrasives (Dehn and McNutt 2000). When considering the impacts of volcanic eruptions from a distance, the by-products of eruptions, such as volcanic ash, can present an opportunity and this appears to be the case for the Late Classic Maya.

The Maya lowlands are underlain by lithified marine sediments geologically older than 60 million years (Instituto Geográfico Nacional 1972). The sites where the volcanic ash tempered ceramics are recovered, essentially within the central core area of the Maya, lie more than 350 air kilometres north of the active volcanic vents in the of Central America Highlands and 550 air kilometres from the closest volcanoes of the Mexican Volcanic Belt. There are multiple candidates for volcanic sources that could have used by the ancient Late Classic Maya (Ford and Glicken 1987; Ford and Rose 1995; Carr et al. 2003; Espindola et al. 2000; Mercado and Rose 1992). Moreover, while the amount of volcanic ash used in the ceramics of the Late Classic is considerable if one regarded it as a trade item (Ford and Glicken 1987), such as obsidian, the total amount is easily accounted for in a deposit of a single eruption of about 0.007 km<sup>3</sup> (Ford and Rose 1995:152).

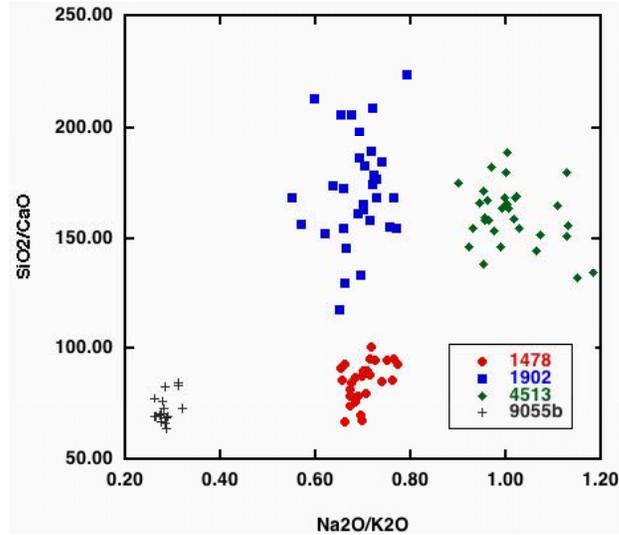
For about 200 years during the Late Classic, volcanic ash was dependably available in sufficient quantity for use in ceramic vessels made for domestic purposes. You cannot make chocolate cake without chocolate; therefore you cannot make volcanic ash tempered pottery without volcanic ash. With this the central issue is clearly articulated: (1) there was a single eruption of significant volume to accumulate in the lowlands in sufficient amount for use throughout the Late Classic period or (2) there was repeated influx of volcanic ash

into the lowland region that allowed for the continual use of ash as temper. If there is a single source, the glass elemental qualities should have a single compositional signature that links to one specific volcanic source. Multiple sources should demonstrate multiple compositional signatures and link to a sequence of eruptions over the Late Classic period at candidate volcanic source sites.

### **Analysis of Volcanic Ash Shards in Maya Pottery Sherds**

Our findings demonstrate the challenge of research to source the volcanic ash in the Maya lowlands. We began with the petrographic descriptions, gaining an appreciation for the detailed work that Anna Shepard undertook. On average, from 20-50% of the pastes were composed of the volcanic ash and the glass shards ranged in size from 10 to 300 microns, with a mode near to 50 microns. Associated igneous phenocrysts, particularly biotite and plagioclase feldspar (Ford and Spera 2005; Ford and Rose 1995) reflect air fall qualities, with no evidence of reworking by water or other mechanical means (see Figure 2) supporting Shepard's early assessments. The pastes speak to the potter's craft, the "recipe" used for the ceramic pastes confirms the cultural influence in the production of the Late Classic volcanic ash wares.

Our electron microprobe of glass shards from four unique pottery sherds of different residential sites in the El Pilar area provided encouraging results. Four separate compositional groups with virtually no overlap were found based on the major elemental analyses. In particular the mass fraction ratios SiO<sub>2</sub>/CaO and Na<sub>2</sub>O/K<sub>2</sub>O were especially useful as discriminates (Figure 3). Although intra-sherd volcanic glass shard compositions are relatively homogeneous, inter-sherd glass shard



**Figure 3.** Ratio Distribution of Major Elements of Volcanic Ash Shards in Four Example Late Classic Maya Pottery Sherds

compositions are distinctly different. Our exploratory results also revealed that the glass shards used as ceramic temper by the ancient Maya have uniformly high silica content (75-77 wt %), typical of rhyolitic volcanic ash. This seems to rule out the El Chichón volcano (Espindola et al. 2000; Weintraub 1982) that covered the areas around El Pilar with an andesitic composition ash (~ 60 wt % silica). Further, even though the volume of ash needed for everyday ceramic ware in the interval between 600-900 AD seemingly requires a consistent supply that would imply more than a single ash fall event (Ford and Rose 1995), our initial compositional microprobe analyses have not succeeded in fingerprinting the source or sources. The material used by the ancient Maya was unlike the typical composition of CAH volcanic sources (58-72 wt % silica).

Silica, the primary component in rhyolitic glass, is resistant to thermal effects, yet other elements are more mobile. The prehistoric ceramic firing is at low temperatures with respect to melting (Ford and Lucero 2000), but there remains the potential to modify glass shard compositions

by reactions between the rhyolitic glass and its surrounding matrix. Calcite ( $\text{CaCO}_3$ ) is an omni-present component in the Maya lowland soil derived from the chemical and physical weathering of lowland limestone and carbonate-bearing siltstones. Chemical weathering of carbonates in Maya lowland limestone leaves insoluble clays as a residue. Calcite decarbonates at  $850^\circ\text{C}$  and is reactive with silicate glass at ceramic firing temperatures— $500\text{--}800^\circ\text{C}$  (Rice 1987:87; Ford and Lucero 2000). It is possible, indeed likely, therefore, that there was chemical exchange of CaO between glass shards and surrounding clay-carbonate matrix. This effect would reduce the silica/lime ratio in glass shards because CaO reacts with and dissolves into pristine glass.

To test the nature of the changes in shard composition due to reaction with matrix and alkali element volatility, we initiated firing experiments with analyzed pumice, collected from the Moho Cay area of Belize, set in the Maya clay matrix starting material. Using clay collected in the field area, we prepared samples of clay and volcanic ash for firing. Controlled experimental tests were conducted at time

and temperature intervals that parallel the firing conditions reported in the literature by Shepard (1963:83-91) and Rice (1987:90-93). We discovered that there were changes in the specific elemental levels and that the changes would affect the SiO<sub>2</sub>/CaO and Na<sub>2</sub>O/K<sub>2</sub>O ratios in particular. We observed a decrease in the ratio of both silica/lime and soda/potash with increasing firing temperature and the duration of the firing event. That is, the composition of the fired laboratory shards did not match the starting glass composition for the long duration-firing experiments.

These results have expanded the scope of our investigation, to leave the central problem of source unresolved. We clearly need to better understand the effects of firing on the composition of the glass shards. We are now at a point where we have a bird's-eye-view of the problem. We know the major oxide compositional span for ~ 1000 shards in the Maya ceramic sherds established via electron microprobe of analysis. We have an initial study of the candidate volcanoes from the CAH and MVB regions—both of which represent possible source areas. We have learned that there are elemental changes that increasingly shift the composition of glass shards with maximum firing temperature and firing duration. The problem remains: Where did the ash originate? To determine the volcanic ash source or sources, we need to know:

- 1) The range of volcanic ash compositions from Late Classic Maya ceramics,
- 2) The composition changes of ash with firing time and temperature,
- 3) The location of candidate eruptions, and
- 4) The distribution of ash from candidate volcanoes.

Our aim then is to develop accurate descriptions of the volcanic ash shards in the Late Classic Maya ceramic sherds and to

determine the potential matches that exist with known volcanic ash falls for the region. We are examining information on the active volcanoes of Central America and Mexico. We are also compiling data on the environmental impacts of the ash at a distance.

### Summary

Pristine volcanic ash has long been known as a specific tempering agent in the Late Classic Maya ceramics. While it has been accepted that the ash was of non-local origin, this anomaly has never been explained. Identification of the source of the volcanic ash used by the ancient Maya has implications for the economy of ceramic production as well as the ecology of the Maya forest.

For seventy-five years, archaeologists of the ancient Maya have recognized the presence of volcanic ash in the Late Classic Maya ceramics. Left dormant, there was no acknowledgement of the implications of the ash in the ceramics. Sourcing the exotic tempering materials will impact our essential grasp of the Late Classic Maya economy. Were the Maya opportunists when a single eruption deposited ash in their midst to exploit over several centuries? Or did a sequence of ash falls concentrate in the Late Classic promoting new ceramic production strategies and perhaps improving local production capacities for the soil? Our research brings together data from the distinct disciplines volcanology and archaeology into focus with an anthropological question that can only be answered with volcanological data. Our results will have far reaching implications for understanding the rise and fall of the ancient Maya civilization

## Reference Cited

- Arnold, D.E. (editor)  
1985 *Ceramic Theory and Cultural Process*. Ashmore W. (ed) ed. Cambridge University Press, New York.
- Carr, M.J., Feigenson M.D., Patino L.C. and Walker J.A.  
2003 Volcanism and Geochemistry in Central America: Progress and Problems. In *Inside the Subduction Factory*, edited by J. Eiler and G. Abers, Rutgers University. Geophysical Monograph Volume 138: 153-179.
- Cordell, Linda S.  
1991 Anna O. Shepard and Southwestern archaeology: ignoring a cautious heretic. In *Ceramic Legacy of Anna O. Shepard*, edited by R. L. Bishop, pp. 132-153. Colorado University Press, Niwot.
- Dehn, J. and S. R. McNutt  
2000 Volcanic Minerals in Commerce and Industry In *Encyclopaedia of Volcanoes*, edited by H. Sigurdsson, pp. 1272-1299. Academic Press San Diego, San Diego, CA.
- Espíndola, J.M., J.L. Macías and R.I. Tilling  
2000 Volcanic History of El Chichón Volcano (Chiapas, Mexico) during the Holocene, and its impact on human activity. *Bull Volcanol* 62(2000):90-104.
- Ford, Anabel and Harry Glicken  
1987 The Significance of Volcanic Ash Tempering in the Ceramics of the Central Maya Lowlands. Paper presented at the 1985 Maya Ceramics Conference, Washington D.C.
- Ford, Anabel and Lisa Lucero  
2000 Malevolent Demons of Ceramic Production: Where have all the Failures gone? *Estudios de Cultural Maya* 21:57-74.
- Ford, Anabel and William I. Rose  
1995 Volcanic Ash in Ancient Maya Ceramics of the Limestone Lowlands - Implications For Prehistoric Volcanic Activity in the Guatemala Highlands. *Journal of Volcanology and Geothermal Research* 66(1-4):149-163.
- Gaxiola, Margarita, John E. Clark and Instituto Nacional de Antropología e Historia (México). Centro Regional de Hidalgo  
1989 *La Obsidiana en Mesoamérica*. 1. ed. Instituto Nacional de Antropología e Historia, México, D.F.
- Gifford, James C.  
1976 *Prehistoric Pottery Analysis and the Ceramics of Barton Ramie in the Belize Valley*. Memoirs of the Peabody Museum of Archaeology and Ethnology, Harvard University; v. 18. Peabody Museum of Archaeology and Ethnology Harvard University, Cambridge, Mass.
- Instituto Geográfico Nacional  
1972 *Atlas Nacional de Guatemala*. Instituto Geográfico Nacional, Guatemala City.
- Jones, L.  
1984 *A Petrologic Analysis of Lowland Maya Ceramics*. Ph.D. dissertation, University of London.
- LeCount, Lisa J.  
1996 *Pottery and Power: Feasting, Gifting, and Displaying Wealth Among the Late and Terminal Classic Lowland Maya*. Ph.D. dissertation, University of California Los Angeles.
- Leyden, B. W., M. Brenner, D. A. Hodell and J. H. Curtis  
1993 Late Pleistocene Climate in the Central American Lowlands. In *Climate in Continental Isotopic Records*, edited by P. K. Swart, pp. xiii, 374. 78 ed. Geophysical Monograph. American Geophysical Union, Washington, D.C.
- Lucero, L. J.  
2001 Social Integration in the Ancient Maya Hinterlands: Ceramic Variability in the Belize River Area. Tempe, AZ, Arizona State University.
- Mercado, Reinaldo and William I. Rose  
1992 Reconocimiento geológico y evaluación preliminar de peligrosidad del volcán Tacaña, Guatemala/Mexico. *Geofísica Internacional* 31(3):205-237.

- Ping, C. L.  
2000 Volcanic Soils. In *Encyclopaedia of Volcanoes*, edited by H. Sigurdsson, pp. 1259-1270. Academic Press San Diego, San Diego, CA.
- Rice, Prudence M.  
1987 *Pottery Analysis: A Sourcebook*. University of Chicago Press, Chicago, IL.
- Santley, Robert S.  
2004 Review Article: What Was Teotihuacan Doing in the Maya Region? *Journal of Anthropological Research* 60:379-396.
- Shepard, Anna O.  
1937 Ceramic Technology. In *Carnegie Institution of Washington Year Book*, pp. 144-145. Vol. 36. Carnegie Institution of Washington, Washington, D.C.  
  
1939 Technological Notes on the Pottery of San Jose. In *Excavations at San Jose, British Honduras*, edited by J. E. S. Thompson, pp. Appendix. Vol. 506. Carnegie Institution of Washington, Washington, D.C.  
  
1942 Classification of Painted Wares. In *Late Ceramic Horizons at Benque Viejo, British Honduras*, edited by J. E. S. Thompson. Vol. 528. Carnegie Institution of Washington, Washington, D.C.  
  
1951 Ceramic Technology. In *Carnegie Institution of Washington Year Book*, pp. 241-244. Vol. 50. Carnegie Institution of Washington, Washington, D.C.  
  
1956 Ceramics for the Archaeologist. Vol. 609. Carnegie Institution of Washington, Washington, D.C.  
  
1962 Ceramic Development of the Lowland and Highland Maya. Paper presented at the 35th International Congress of Americanists.  
  
1963 *Ceramics for the Archaeologist*. Carnegie Institution of Washington, Washington, D.C.
- Smith, Robert Eliot  
1955 Ceramic Sequence at Uaxactun, Guatemala, pp. 2 v. vol. I. Middle American Research Institute Tulane University, New Orleans, LA.
- Sunahara, Kay Sachiko  
2003 Ancient Maya Ceramic Economy in the Belize River Valley Region: Petrographic Analyses, pp. 176, Hamilton, ON (Canada).
- Weintraub, Boris  
1982 Mexican Volcano Spews Death and Devastation (El Chichón in Chiapas). In *National Geographic*, pp. 654-671, 676-684. Vol. 162.
- Willey, Gordon Randolph, W.R. Bullard, J.B. Glass and J.C. Gifford  
1965 Prehistoric Maya Settlements in the Belize Valley. In *Papers of the Peabody Museum of Archaeology and Ethnology*, edited by G. R. Willey, pp. xxix, 589 p.: ill., maps (1 fold. in pocket) ; 27 cm. and portfolio (36 tables) 28 cm. vol. 54. Peabody Museum, Cambridge.
- Williams, H. and A.R. McBirney  
1979 *Volcanology*. Freeman, Cooper, and Co., San Francisco.

---

# 11 THE CLASSIC TO POSTCLASSIC TRANSITION IN THE SIBUN VALLEY, BELIZE: DEFINING THE TERMINAL CLASSIC CERAMIC ASSEMBLAGE

Eleanor Harrison-Buck and Patricia A. McAnany

---

*Recent archaeological investigations in the Sibun Valley of Belize have identified Maya populations that survived the “collapse” of Classic Maya civilization. Excavations of several sites located in different parts of the Sibun Valley have revealed stratified deposits that help to further define the Terminal Classic ceramic assemblage. As a frontier zone, the Sibun Valley appears to have been impacted by two competing core areas - the Petén and Belize Valley to the west where large centers like Naranjo were highly influential in the Classic period and northern Yucatan where Terminal Classic centers such as Chichén Itzá fueled a trade network along the Caribbean coast that extended as far south as Belize. Potential spheres of interaction are discussed based on comparative analyses with ceramic complexes from other sites in Belize, namely the Belize Valley. The results of the study shed light on shifting spheres of interaction during the Terminal Classic period with varied social, political and economic processes occurring at different sites throughout the valley at the time of the “collapse”*

## Introduction

The Terminal Classic period—the transition from the Classic to Postclassic—marks an important period of political, economic, and social transformation throughout Mesoamerica (Diehl and Berlo 1989). During this transitional period from around AD 750 to 900, Maya centers in the Petén core area were declining, and northern Yucatec polities, such as Chichén Itzá, were on the rise. Both the architecture and ceramic data suggest that the Sibun River valley was a frontier zone, interacting with these two competing core areas of the Maya region during the Late-Terminal Classic transition. Positioned in the central part of Belize, the Sibun River valley (Figure 1) is linked to the Petén area—and its many powerful Classic Maya centers, such as Tikal and Naranjo—via the Belize Valley, which is the proximate drainage immediately to the north. To the east, the Sibun River flows into the Inner Channel of the Caribbean Sea, providing access via maritime transport to northern Yucatec capitals such as Chichén Itzá. These geographic links enabled the Sibun

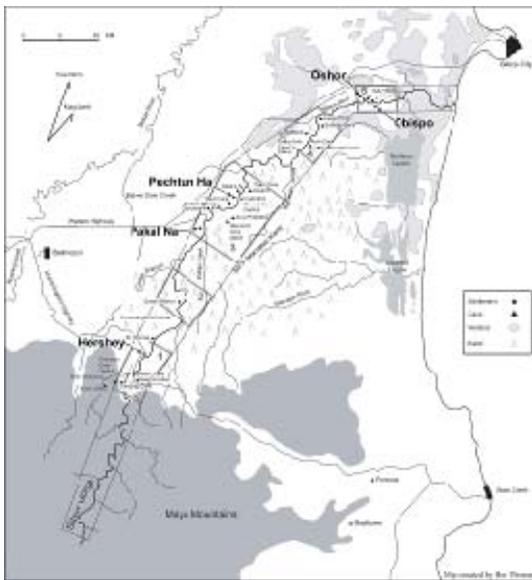
inhabitants to interact with both of these core areas.



**Figure 1.** Map of the Maya Lowlands (map prepared by B. Thomas).

At certain sites in the Sibun Valley, we note the introduction of new architectural styles and associated ceramic types that depart from the Petén-affiliated (Tepeu/Spanish Lookout) tradition and show

influence stemming from northern Yucatan (Harrison-Buck 2007). We discussed some of this archaeological evidence in last year's Belize Archaeology Symposium (see Harrison-Buck and McAnany 2006). In particular, we examined finds of Yucatec-style circular shrines—smaller versions of the Caracol Building at Chichén Itzá (Ruppert 1935). We also touched upon some of the northern-style ceramic material, namely the Kik Group types, which we found in the Sibun Valley at sites with Yucatec-style architecture. Here, we expand this discussion of Terminal Classic occupation in the Sibun Valley, focusing on the diagnostic ceramic material that we find throughout the valley during this time.



**Figure 2.** Map of the Sibun Valley settlements (map prepared by B. Thomas).

The study presented is based on a typological analysis of ceramic material from a series of excavations conducted at Pechtun Ha, Oshon and Obispo—three Maya settlements containing Yucatec-style circular architecture in the Sibun Valley (Figure 2). Additionally, we compare ceramics from two other sites in the middle and upper reaches of the valley—Pakal Na

and Hershey. Archaeological excavations at these five sites in the Sibun Valley yielded a series of well-stratified deposits that allow ceramic material to be examined contextually. In this way, Terminal Classic diagnostic ceramic material is identified in the assemblage using the Type-Variety format. The primary ceramic types found in the Sibun Valley during the Terminal Classic period include Roaring Creek Red bowls and dishes, Sibun Red Neck jars, Indian Creek Polychrome bowls, Dolphin Head bowls and dishes, and Cayo Unslipped utility jars. As part of the Sibun household assemblage, the Sibun Red Neck and Cayo Unslipped jar forms are the most common type of storage and cooking vessels, while Roaring Creek Red, Indian Creek Polychrome, and Dolphin Head Red represent the most common serving dishes and bowls found in the valley during the Terminal Classic period. Other less common diagnostics of the Terminal Classic assemblage in the Sibun Valley are found in the Garbutt Creek, Mountain Pine, Vaca Falls, Mount Maloney and Belize Ceramic Groups (for a full discussion see Harrison-Buck 2007).

In this paper, the Terminal Classic diagnostic ceramic types, as well as some of the special trade wares found in the Sibun Valley, are reviewed and the results of a distributional study are presented. Distribution patterns reflect discrete social networks and spheres of interaction that are notably different when assemblages are compared between the upper and lower reaches of the valley. Sites in the upper reaches of the Sibun Valley, like Hershey, display none of the northern-style (Kik Group) ceramics and Yucatec architecture, but rather, retain an affiliation with the Belize Valley and Petén region to the west during the Terminal Classic period. Meanwhile, the Sibun Maya living in the lower reaches of the valley seem to shift

their political and economic focus away from this western region by this time and establish a new interaction sphere along the coast with northern polities like Chichén Itzá.

### Defining Terminal Classic Diagnostic Ceramics

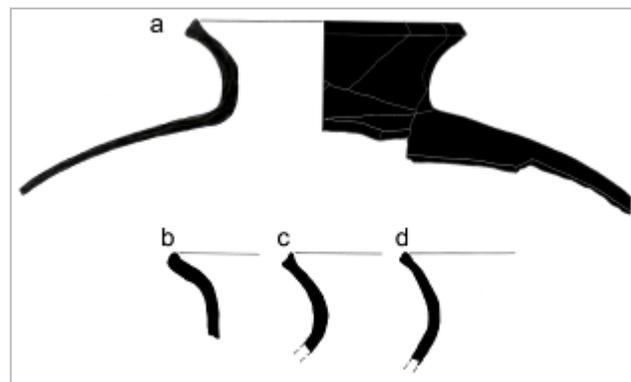
#### *Mount Maloney Black and Belize Red*

Ceramicists, including James Gifford (1976), Lisa LeCount (1996 and 2005), Jim Aimers (2002) and others working in the upper Belize Valley have helped to define the Terminal Classic diagnostics for this central-western part of Belize. Several key ceramic types define the ninth and tenth century Maya occupation in this area, referred to as the late facet of the Spanish Lookout Ceramic Complex or Tepeu 3 period.

Mount Maloney Black is a key Late to Terminal Classic ceramic diagnostic, initially defined by Gifford (1976) for Barton Ramie. LeCount (1996) has been able to identify and define certain varieties of Mount Maloney that serve as markers of the Terminal Classic period. While bowls are the most common form, jars are also present in the Belize Valley assemblage. LeCount (1996:160) notes that Terminal Classic Mount Maloney jars typically have overhanging, angled profiles, whereas the Late Classic II jars generally have smooth contours. Overall, Mount Maloney Black (Figure 3) is a rare type in the Sibun Valley assemblage, but when found they are invariably jar forms with overhanging, angled profiles and appear with other ceramics that date to the Terminal Classic, such as the Belize Molded-Carved type (see discussion of this type further below).

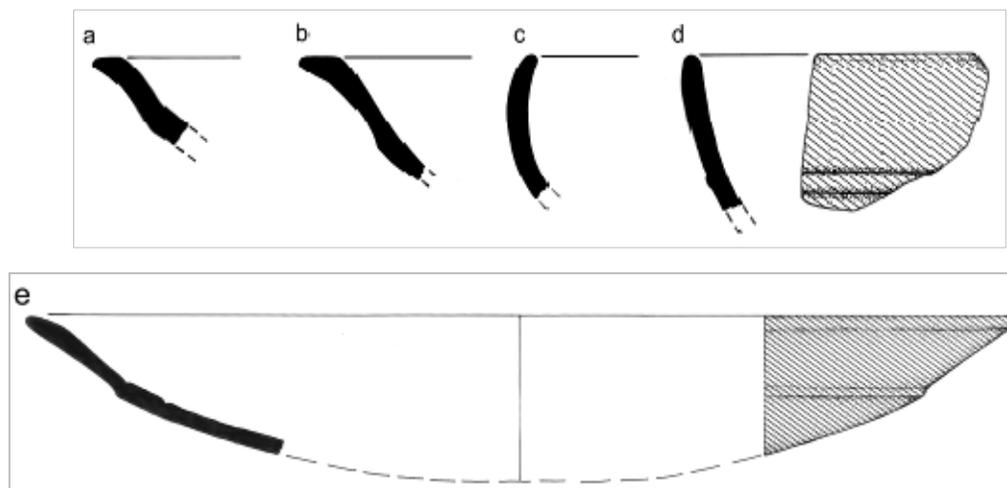
Belize Red is another type that has been identified in Terminal Classic contexts in the Sibun Valley (Figure 4). This red-slipped ware contains a high percentage of volcanic ash temper, which is largely

comprised of laths of SiO<sub>2</sub>, or glass. The ash paste is distinctive and readily identifiable in the Sibun assemblage. The paste of eroded sherds is chalky and rubs off on one's hands. Like Mount Maloney Black, Belize Red is relatively rare in the Sibun Valley. It is more frequent in the Late Classic II and shows a sharp decline in frequency during the Terminal Classic period at Hershey and Pakal Na (Figure 5). These two sites have a strong Late Classic II occupation that could be separated from later Terminal Classic contexts. In Figure 5, frequencies (quantified based on the total count of all rim and body sherds) show a marked decrease over time when Late Classic II and Terminal Classic assemblages are compared side-by-side. LeCount (1996:160-161, Table 5.9) documents a similar pattern in the Belize Valley at Xunantunich and San Lorenzo. The Belize Red type dominates the assemblage in both the Late Classic II and Terminal Classic periods, but shows a slight decline during the latter period.



**Figure 3.** a-d Mount Maloney Black: Mount Maloney Variety: a) Obispo RIP 1152, b) Hershey RIP 1469, c) Hershey RIP 1470, d) Hershey RIP 1471 (illustrations by E. Harrison-Buck).

Both Belize Red and Mount Maloney Black were most likely imported from the Belize Valley, given their abundance in this region (Aimers 2002; Gifford 1976; LeCount 1996). One exception may be a partially reconstructible



**Figure 4.** a-c. Belize Red: a) Oshon, RIP 1192, b) Oshon, RIP 1189, c) Hershey, RIP 1190, d) Obispo, RIP 1194, e) Pakal Na, Vessel 214 (illustrations by C. Cesario and E. Harrison-Buck).

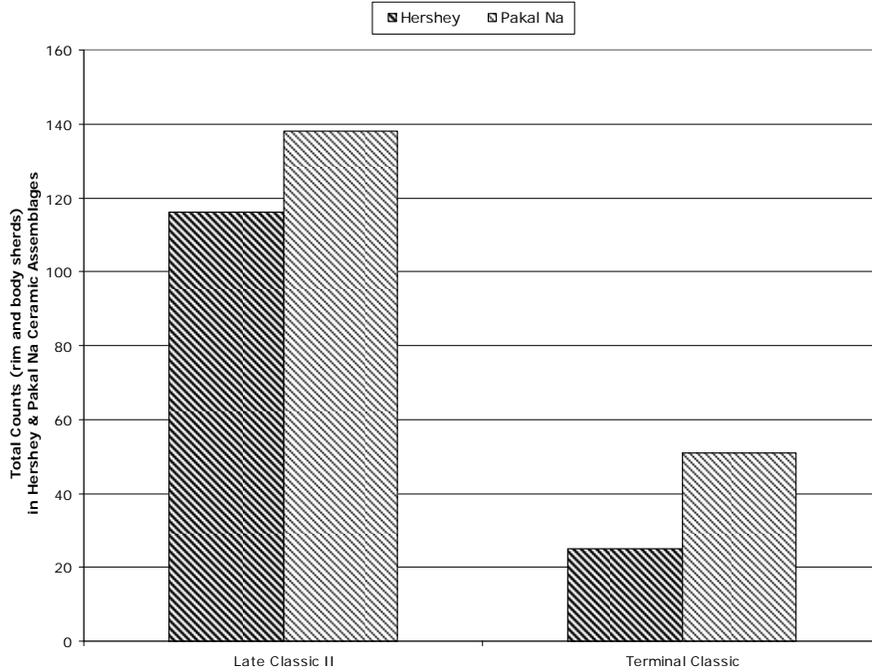
vessel (Figure 4e) from a Late Classic II burial deposit at Pakal Na. A thin-section of this vessel examined under a microscope revealed no ash temper, only calcite inclusions and it appears to be an imitation Belize Red platter.

Figure 6 displays the total percentage of Mount Maloney Black jars and the Belize Red ash wares in the Terminal Classic assemblages from the Sibun Valley settlements. Ceramic percentage is calculated based on the total number of rim sherds. Quantities are representative of Terminal Classic contexts and do not include the Late Classic II ceramic counts, discussed above. The five sites analyzed in this study are presented from west (Hershey) to east (Oshon) in Figure 6. Both Mount Maloney Black and the Belize Red are surprisingly rare in the Sibun Valley given its close proximity to the Belize Valley where these ceramics were undoubtedly manufactured. Overall, Hershey and Pakal Na contain a heavier percentage of both types compared with Pechtun Ha, Obispo, and Oshon. In sum, ceramics from Hershey

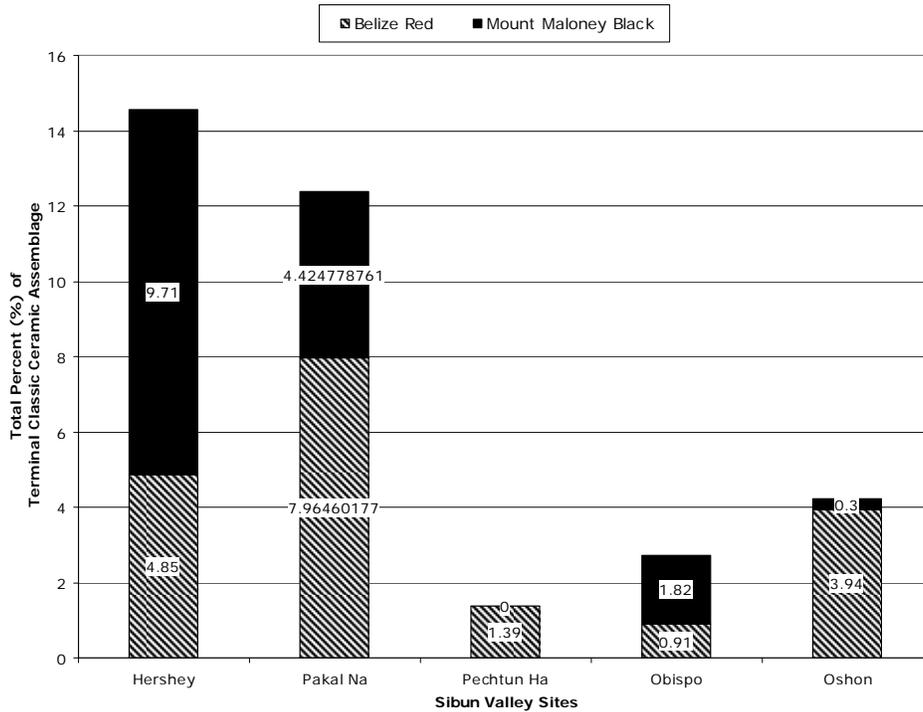
and Pakal Na (sites closest to the Belize Valley) reflect the strongest Tepeu/Spanish Lookout affiliation when compared to other sites in the valley.

#### **Roaring Creek Red and Sibun Red Neck**

Two of the most common Terminal Classic ceramic types found throughout the length of the Sibun Valley is Roaring Creek Red and Sibun Red Neck jars (Figures 7 and 8). Sibun Red Neck is a new type defined in this study. Figure 9 shows the total percentage of these two types represented in the Terminal Classic ceramic assemblage from each of the five sites in the Sibun Valley. Notably, the lowest percentage of Roaring Creek Red is found at Hershey, which seems to align with the ceramic distribution patterns of the Belize Valley. Roaring Creek Red is part of the Spanish Lookout Ceramic Complex defined by Gifford (1976) for Barton Ramie. However, the frequency of this Terminal Classic type is actually relatively low at Barton Ramie and other sites in the Belize Valley, especially when compared to other outflaring, red slipped dishes, such as the

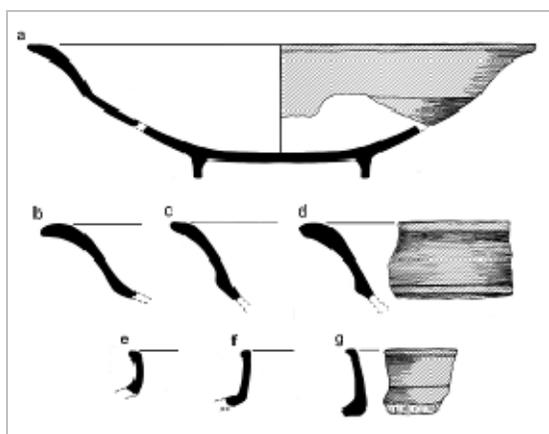


**Figure 5.** Frequencies of Belize Red at Hershey and Pakal Na in the Late Classic II and Terminal Classic periods (based on total counts of rim and body sherds).



**Figure 6.** Total Percentage of Belize Red and Mount Maloney Black in the Terminal Classic ceramic assemblages from sites in the Sibun Valley.

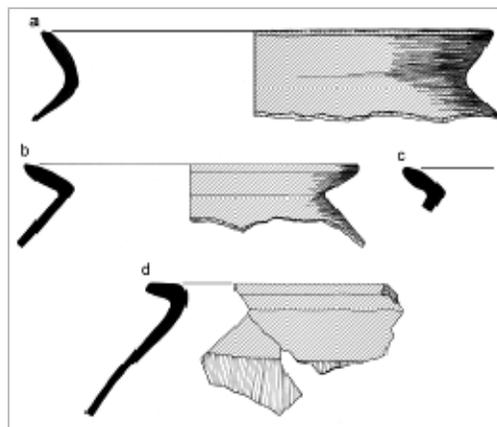
Belize Red type. Belize Red far exceeds the presence of Roaring Creek Red in the Terminal Classic ceramic assemblage at Barton Ramie, Baking Pot, Tipu, and Xunantunich (Aimers 2002; LeCount 1996:Table 5.9). Belize Red and Roaring Creek Red share an equivalent percentage of the Terminal Classic assemblage (4.85%) at Hershey (Compare Figures 6 and 8). Elsewhere in the Sibun Valley, Roaring Creek Red is by far the dominant red-slipped serving dish of the Terminal Classic ceramic assemblage.



**Figure 7.** a-g. Examples of Roaring Creek Red: Roaring Creek Variety: a) Hershey, RIP 1005/1031; b) Oshon, RIP 1406; c) Pakal Na, RIP 1468; d) Pechtun Ha, RIP 1407; e) Obispo, RIP 1409, f) Pechtun Ha, RIP 1408; g) Oshon, RIP 1024 (illustrations by E. Harrison-Buck).

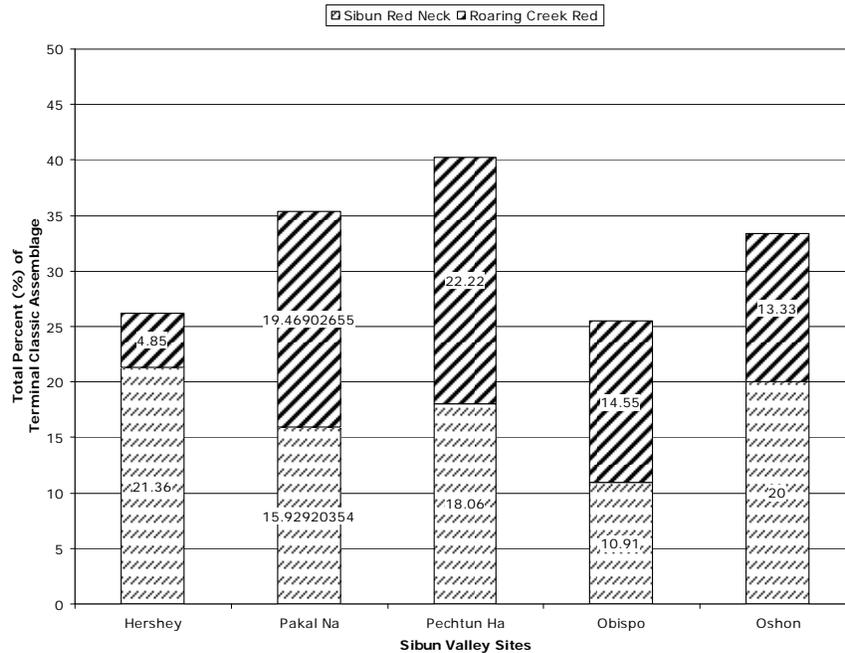
Likewise, the Sibun Red Neck jar (Figure 8) represents a common ceramic type found throughout the Sibun Valley, but is more rare in the Belize Valley. Gifford (1976:235-237 and Figure 144k and j) designated this type as Vaca Falls Red, illustrating two examples in his Barton Ramie report. However, he admitted the jar form was not common and in his description he seems unsure of where to place the few examples that he had. Aimers (2002) and LeCount (1996) do not mention this jar form in their analyses of the ceramic assemblages from Baking Pot, Tipu and Xunantunich. In

marked contrast, these jars are exceedingly abundant in the Sibun Valley. They appear quite distinct in form, paste and surface treatment from the Vaca Falls Red bowls. Therefore, in this study they have been given a new type name, designated as Sibun Red Neck jars.



**Figure 8.** a-d. Examples of Sibun Red Neck jars: a) Pechtun Ha, RIP 1004; b) Oshon, RIP 1377, c) Oshon, RIP 1015; d) Oshon, RIP 1006 (illustrations by E. Harrison-Buck).

Red slip extending down to the shoulder is the characteristic feature of these Terminal Classic jar forms. The remaining body of the Sibun Red Neck jar is unslipped. These vessels should probably be categorized as Uaxactun Unslipped wares, rather than Pine Ridge Carbonate wares (where Gifford placed them as part of the Vaca Falls Group). Like Roaring Creek Red, this distinctive type is a solid indication of a Terminal Classic context in the Sibun Valley and is never found in the Late Classic period. Other types of red neck jars do occur before the Terminal Classic period, but are distinct in form, paste and surface decoration. Several different types are found in earlier Classic period contexts in the Sibun Valley, including a jar form that has less of an outcurving neck, more direct rim, with a light orange wash and a red slip that covers only the tip of the exterior rim. This type may also continue into the



**Figure 9.** Total Percentage of Sibun Red Neck and Roaring Creek Red in the Terminal Classic ceramic assemblages from sites in the Sibun Valley

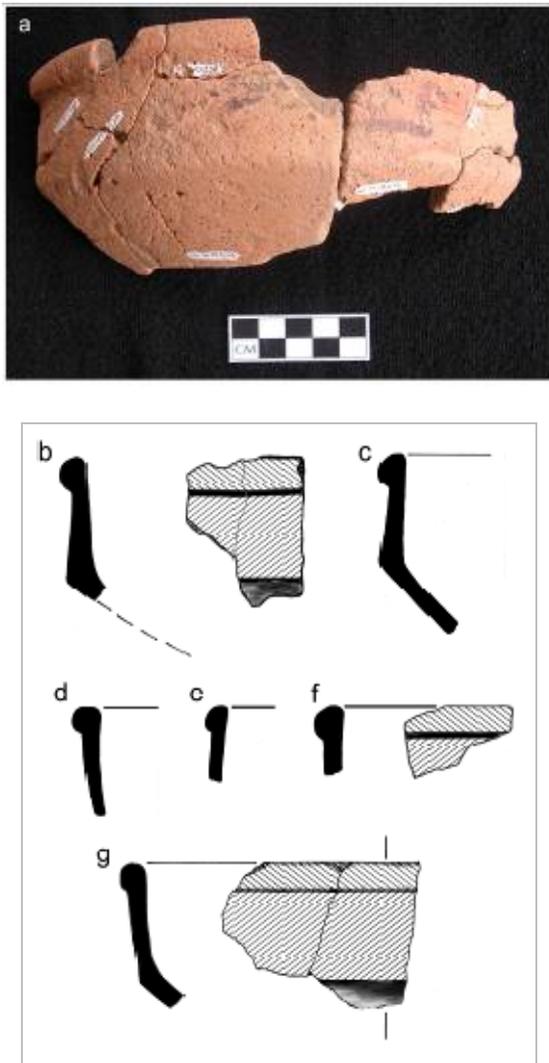
Terminal Classic period. Another type is thinner-walled and has a darker paste with gray surfaces and a reddish-brown slip around the neck. Comparable types may be Duende Daub Striated and Petroglyph red-rimmed, found in the Sibun Valley and Caves Branch District caves (Audet 2002: Fig. 7.4 a-d; Peterson 2006; Reents 1981), as well as the Stann Creek District (Graham 1994: Figs.5.17-5.18). These types are distinct from the Terminal Classic Sibun Red Neck type that is defined in this study.

Occasionally, the unslipped body of the Sibun Red Neck jar has a thin wash of black and is lightly striated (see Figure 8d), similar to the Red Neck Mother Striated type defined by Diane Chase (1982) for the site of Nohmul. Pendergast (1974) identified both the plain and the striated varieties in his study of Actun Polbilche, a cave in the middle reaches of the Sibun Valley. Both varieties of these Terminal Classic red-necked jars also are found at

Lamanai and Altun Ha (Graham 1987:78-79; Pendergast 1990). Thompson (1939: Fig. 76) also illustrates identical jar forms, both plain and striated, in his ceramic report on the site of San Jose. Pendergast (1974:83-84) concludes that on typological grounds, the ceramics from the Sibun are linked most closely with San Jose, located only about 45 km to the west-northwest of the Sibun Valley. He acknowledges that what is most surprising is the Terminal Classic ceramics from the Sibun bare little resemblance to the ceramics from Xunantunich, Barton Ramie and Baking Pot, even though it lies on the edge of the Belize River Valley area.

### Indian Creek Polychrome and Fat Polychrome

What is perhaps most strikingly dissimilar from the Belize Valley is the northern-style Kik Group ceramics introduced in the Sibun Valley during the

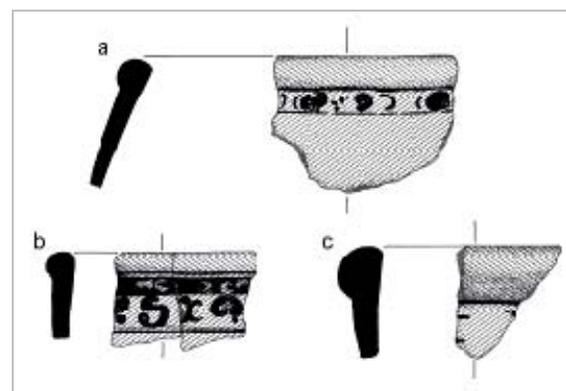


**Figure 10.** a-g. Indian Creek Polychrome: a) Pakal Na b) Oshon, RIP 1286; c) Pakal Na, RIP 1089; d) Oshon, RIP 1313; e) Oshon, RIP 1312, f) Oshon, RIP 1285; g) Pechtun Ha, RIP 1297 (photograph & illustrations by E. Harrison-Buck).

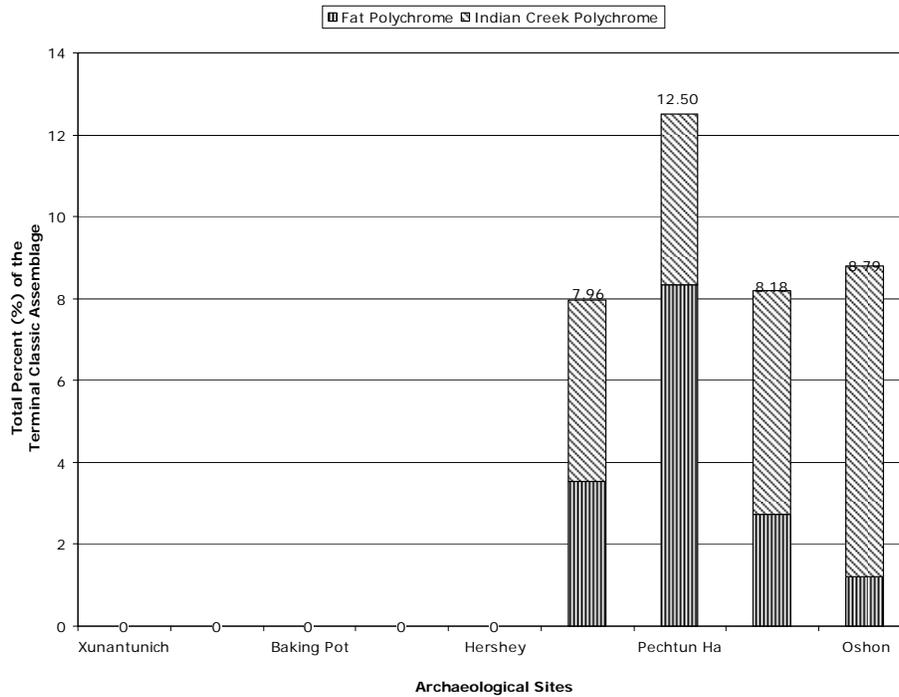
Terminal Classic period. The Kik Group ceramics, shown in Figures 10 and 11, are notably different from the ceramics of the Spanish Lookout Complex and, according to ceramic studies do not appear at sites in the upper Belize Valley. Likewise, none of the Kik Group ceramics have been identified at the Hershey site in the upper reaches of the Sibun Valley. This further suggests that Hershey was perhaps more closely aligned with the Belize Valley and Petén overland

trade network than the rest of the valley during the Terminal Classic period. In contrast, sites in the middle and lower reaches of the Sibun Valley that are closer to the coast - Pakal Na, Pechtun Ha, Oshon, and Obispo - have an abundance of Kik Group ceramics in terms of the total percentage represented at each site (Figure 12). The introduction of these “foreign” ceramic styles points to a different sphere of interaction developing along the eastern coast from which Hershey may have been excluded.

The form, paste and surface treatment of these “foreign” ceramics suggest that they belong to the Kik Ceramic Group, established by Diane Chase (1982) at the site of Nohmul in northern Belize. The Kik Group ceramics are perhaps best defined as Puuc or Chichen Red Wares, showing strong northern attributes in terms of form and surface decoration. The Kik Group ceramics have a consistent yellowish-orange paste and comprise a variety of large basin and bowl forms. These ceramics have a distinctive rim treatment—a bolstered rim with a rounded exterior fold in the lip—that makes these sherds relatively easy to identify in the Sibun assemblage.



**Figure 11.** a-c. Fat Polychrome: a) Pechtun Ha, RIP 1007; b) Pechtun Ha, RIP 1087; c) Pechtun Ha, RIP 1300 (illustrations by E. Harrison-Buck & C. Cesario).



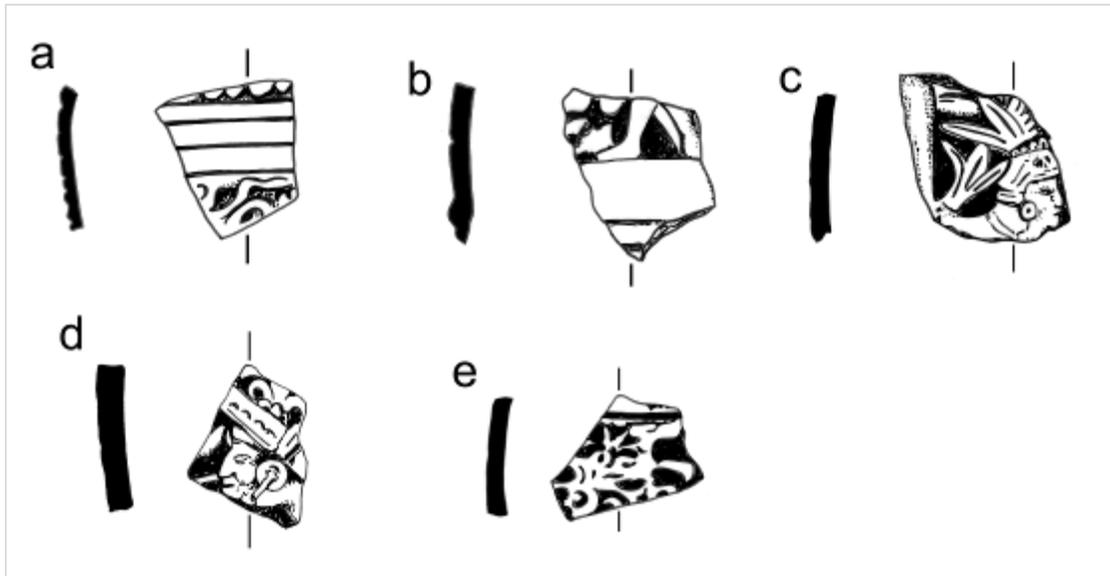
**Figure 12.** Total percentage of Kik Group ceramics (Fat Polychromes and Indian Creek Polychromes) from sites in the Sibun and Belize Valleys.

Indian Creek Polychrome (Figure 10) is a new type defined in this study that has been placed in the Kik Group. The rounded bolster rim and interior of the vessel contain a hard, waxy, deep red slip that is generally well preserved. On the best-preserved examples, a reddish-orange slip with black and red polychrome painted designs is found on the exterior just below the rounded lip. Most sherds are considerably eroded, but faint traces of black and red painted designs, including cross-hatching and other abstract motifs, have been identified on some examples. While no complete vessels were recovered from the Sibun Valley excavations, a similar example of a basal break bowl containing a ring base and polychrome crosshatched design was found at Altun Ha (Graham 1987:Fig. 2g).

Another Kik Group type found in the Sibun Valley is referred to as “Fat Polychrome” (Figure 11), which was

defined by Shirley Mock at the site of Northern River Lagoon (NRL) on the northern Belize coast (Mock 1994:106-107 and Fig. 51; Mock 2005:128 and Fig. 7; Masson and Mock 2004: 387 and Fig. 17.7d-e). Mock (2005:128) notes that Fat Polychromes are found at Santa Rita on the Chetumal Bay in northern Belize and at Saktunja and the Salt Creek sites, located along the coast south of NRL. In addition, the type is found at San Jose in central Belize (Thompson 1939:124-125, Figs. 59 and 65).

The basin form and pronounced bolster rim of the Fat Polychrome bare a strong resemblance to the Florescent Medium Puuc and Chichen Slate Ware basins (Brainerd 1958:52-53 and Figs. 41d, f, 43 a-c, and 73d 27-35; Smith 1971:Figs. 16d and g, and 27h-i). However, the paste characteristics, as well as the quantity and distribution of these northern-style ceramics



**Figure 13.** a-e. Belize Molded-Carved: a) Pakal Na, RIP1001, b) Hershey, RIP 1002, c) Oshon, RIP 1032, d) Oshon, RIP 1034, e) Oshon, RIP 1035 (illustrations by E. Harrison-Buck).

suggest they were probably produced in Belize. In the Sibun assemblages, Fat Polychromes are generally less abundant than Indian Creek Polychromes in terms of total rim counts and it is possible the latter was produced in the Sibun Valley. Chemical studies are being performed on a sample of Kik Group ceramics from the Sibun, which will confirm where these types were produced. If not locally produced in the Sibun Valley, the distribution pattern suggests they were probably manufactured somewhere near the coast in north-central Belize.

### Special Ceramics and Trade Wares

#### *Pabellon Modeled-Carved and Belize Molded-Carved Vessels*

Pabellon Modeled-Carved and Belize Molded-Carved ceramics are markers of the Terminal Classic period and have a wide distribution throughout the Maya Lowlands. The latter type appears in the Sibun Valley and elsewhere in Belize (Figure 13). Belize Molded-Carved ceramics often are interpreted as imitations of the

Fine Orange Pabellon Modeled-Carved ceramics (Aimers 2002:383; Mock 1994:318). However, Graham and others (1980:166) note the marked differences that separate Belize Molded-Carved from Pabellon Modeled-Carved, and suggest that it would probably be a mistake to view these vessels as imitations of the Fine Orange type. The Pabellon-Modeled type has two primary forms depicting two different scenes: “a ‘confrontation scene’ between two seated figures (vase with pedestal base) and a reclining figure (bowl with rounded sides)” (Sabloff 1975:195 and Figs. 384-386). Likewise, the Belize Molded-Carved ceramics show two fairly standardized vessel forms—a pedestal-based pear-shaped drinking cup (see Thompson 1939:Fig. 84) and a barrel-shaped drinking cup with three hollow oven foot supports (Graham et al. 1980:Figs. 7 and 8; Thompson 1939:Fig. 83a and b). Graham and others (1980:166) have identified one set of scenes depicted on the Belize Molded-Carved vessels, referred to as Panels A and B. Panel A presents five people, while Panel B depicts seven people,

with two individuals standing in profile interacting with a central elite figure. A portion of the scenes from Panels A and B are found on the examples illustrated in Figure 13, which are most similar to a complete vessel found at San Jose (see Thompson 1939:Fig. 83a).

Glyphic bands occur in both Pabellon Modeled-Carved and Belize Molded-Carved. Adams (1971) and Sabloff (1973 and 1975) have noted northern Yucatan influence in the scenes on the Pabellon Modeled-Carved ceramics and argued this “horizon marker” signified an intrusive northern invasion at sites, such as Seibal and Altar de Sacrificios, in the Maya “heartland”. Graham and others (1980:166) argue against the idea that the Belize Molded-Carved ceramics carry any northern influence, but Helmke et al. (1998) have identified the grammatical position and contexts of the *Lu Bat* glyph on Belize Valley vessels, which is similar to the use of the glyph on a Terminal Classic lintel at Chichén Itzá.

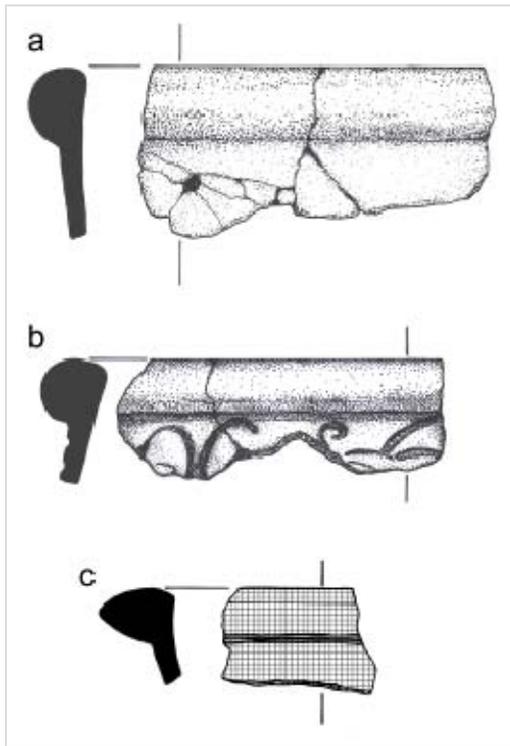
Both of these Terminal Classic ceramic types were produced using a mold or stamp. The transferred design on a leather-hard (pre-fired clay) vessel offered a template or guide for the potter who then delineated the lines with incising and carved out portions to create relief (Graham et al. 1980:164). Slipped red or orange, the rough edges of the carved design were rubbed smooth through burnishing, creating a polished surface and leaving the negative relief a rough matte surface. Although they do not represent the same scenes as depicted on the molded-carved ceramics, Brainerd (1958: Fig. 91g-o) illustrates a collection of stamps from Chichén Itzá. Stamps and molds at Chichén Itzá represent new ceramic production technology that was introduced during the Late-Terminal Classic period. The stamps would have facilitated the repeated imprinting of selected images on

ceramic vessels, providing a standardized form and set of visual iconography. The use of stamps and mold made ceramics point to mass production of products in the Terminal Classic, manufactured explicitly for widespread distribution.

### Northern Imports

There are several examples of basin forms found at Pechtun Ha, Obipso, and Oshon that have pronounced bolster rims like the Fat Polychrome type. However, the paste and surface treatment deviate from the Kik Group and may be direct imports from northern Yucatan, possibly Chichén Itzá. One example is a basin form with a rounded bolster rim that was found in a Terminal Classic midden deposit associated with an elite household at the site of Pechtun Ha (Figure 14a). The form and reddish-brown paste with remnants of a light grayish slip match Smith’s description of the Dzitas Slate ware basins—one of the most common slate ware types of the Sotuta Complex found at Chichén Itzá (Brainerd 1958:52-53; Smith 1971:174-177). Another basin fragment found in an elite residence at Oshon appears to be a northern import from the Cehpech Complex (Figure 14b). This basin form shows a small portion of a deeply incised design just below a pronounced rounded bolster rim. The vessel form, paste attributes, and incised decoration with remnants of gray slip on the exterior conform to Smith’s (1971:177-178) description of Puuc Slate ware, possibly the Tekit Incised type. Smith (1971:168) notes that while Cehpech pottery is abundant at all Puuc sites in northwestern Yucatan, it is also quite well established at Chichén Itzá. It is found in levels dating to the Terminal Classic period, coeval or at least partially overlapping with the Sotuta Ceramic Complex (Andrews et al. 2003). A distinctive basin form found on the floor of the interior room of the circular structure at

Obispo may represent another northern import. This vessel has a dark reddish-brown waxy slip and shows tooling on the exterior, underneath a pronounced triangular-shaped bolster rim (Figure 14c). The type is unidentified, but the form, surface finish and paste characteristics do not resemble any of the other ceramics in the Sibun Valley assemblage. The basin form and triangular bolster rim point to a northern origin.



**Figure 14.** a-c. Northern Imports (illustrations by E. Harrison-Buck and photographs by D. Buck).

### Concluding Thoughts

The presence of northern imports at Pechtun Ha, Oshon, and Obispo - the sites with Yucatec-style round structures - points to a physical interaction with northerners, possibly coming from Chichén Itzá. We believe that, like the circular shrines, Yucatec imports and northern-style ceramics are materializations of a coastal sphere of interaction that developed during the

Terminal Classic. Jeremy Sabloff (1977) and others (Kepecs et al. 1994; Masson and Mock 2004:367; Sabloff and Rathje 1975) have long noted the development of an extensive trade network along the eastern Caribbean coast, likely established and administered by Chichén Itzá during the Terminal Classic. In this way, northern traits infiltrated coastal and riverine settlements as far south as the Sibun Valley in Belize, hundreds of kilometers away from this northern Yucatan regional center.

The most common ceramic types found in the Sibun Valley - the northern-style Kik ceramics, Roaring Creek Red and Sibun Red Neck—are the least common types in the Belize Valley. However, these types have been identified in Terminal Classic deposits at settlements located in the north-central part of Belize, such as Altun Ha, Lamanai, San Jose, Northern River Lagoon, and the Stann Creek District (Graham 1985 and 1987; Mock 1994; Masson and Mock 2004; Thompson 1939). Importantly, these sites are located either on the coast or along rivers and creeks—in other words, at locales that are strategic for the movement of goods and ideas via canoe transport to and from the coast during the Terminal Classic period.

The ceramic evidence points to two different spheres of influence that converged in this frontier zone of the eastern Maya Lowlands in the Terminal Classic period. Differential distribution patterns noted between the upper and lower reaches of the Sibun Valley suggests that not all settlements in the Sibun Valley were involved in this coastal interaction sphere. Hershey, the site farthest inland, displays none of the Yucatec-style architecture and lacks the Kik Group ceramics. The Terminal Classic ceramic assemblage at Hershey shows the highest percentages of Tepeu/Spanish Lookout ceramic types, suggesting that this site continued to interact

with the Belize Valley and Petén despite the failing political structures and economic networks in this central region. Not surprisingly, the historical trajectory of Hershey mirrors many of the sites in the Belize Valley and Petén region, collapsing by the beginning of the ninth century. Meanwhile, sites such as Pakal Na, Pechtun Ha, Oshon and Obispo continue to thrive in the ninth and tenth centuries, mirroring the Terminal Classic florescence at Chichén Itzá. The results of this study shed light on shifting spheres of interaction during the Terminal Classic period, with varied social, political and economic processes occurring at different sites in the Maya Lowlands at the time of the “collapse”.

*Acknowledgments.* The authors wish to acknowledge the financial support of the National Science Foundation (BCS-0096603) and the Division of International Programs at Boston University. The project staff members, field school students, and local workmen who conducted the fieldwork reported upon in this analysis deserve a large note of appreciation. The Institute of Archaeology as part of the National Institute of Culture and History (NICH) of Belize issued permission to conduct fieldwork in the Sibun Valley during 1997, 1999, 2001, and 2003, as well as laboratory analysis during 2002, 2004 and 2005. We thank the staff and directors at the Institute, particularly Dr. Jaime Awe, Dr. John Morris, Dr. George Thompson, Ms. Sherilyne Jones, Mr. Brian Woodye, and the entire Belize Archaeology Symposium Organizing Committee. These research reports are a testament of your hard work and commitment to preserving Belize’s cultural heritage for the future.

## References Cited

- Adams, R. E. W.  
1971 *The Ceramics of Altar de Sacrificios*. Papers of the Peabody Museum of Archaeology and Ethnology, vol. 63, No. 1, Harvard University, Cambridge, MA.
- Aimers, J. J.  
2002 *Cultural Change on a Temporal and Spatial Frontier: Ceramics of the Terminal Classic to Postclassic Transition in the Upper Belize River Valley*. Unpublished Ph.D. Dissertation, Tulane University, New Orleans, LA.
- Andrews, A. P., E. W. Andrews V, and F. Robles C.  
2003 The Northern Maya Collapse and Its Aftermath. *Ancient Mesoamerica* 14:151-156.
- Audet, C. M.  
2002 Pottery from the Caves of the Thumb District. In *Sacred Landscape and Settlement in the Sibun River Valley: XARP 1999 Survey and Excavation*, edited by P. A. McAnany, pp. 79-102. SUNY Institute of Mesoamerican Studies Occasional Paper 8. Albany, NY.
- Brainerd, G. W.  
1958 *The Archaeological Ceramics of Yucatan*. University of California Anthropological Records, vol. 19. University of California Press, Los Angeles.
- Chase Diane Z.  
1982 *Spatial and Temporal Variability in Postclassic Northern Belize*. Ph.D. Dissertation, Department of Anthropology, University of Pennsylvania, Philadelphia.
- Diehl, R. A. and J. C. Berlo (eds)  
1989 *Mesoamerica after the Decline of Teotihuacan, AD 700-900*. Washington, DC: Dumbarton Oaks Research Library and Collection.
- Gifford, J. C.  
1976 *Prehistoric Pottery Analysis and the Ceramics of Barton Ramie in the Belize Valley*. Peabody Museum Memoirs, vol. 18. Harvard University, Cambridge, MA.

- Graham, E. A.  
1985 Facets of Terminal to Postclassic Activity in the Stann Creek District, Belize. In *The Lowland Maya Postclassic*, edited by A. F. Chase and P. M. Rice, pp. 215-230. University of Texas Press, Austin.  
1987 Terminal Classic to Early Historic Period Vessel Forms From Belize. In *Maya Ceramics: Papers from the 1985 Maya Ceramic Conference*, edited by P. M. Rice and R. J. Sharer, pp. 73-98. BAR International Series 345(I).  
1994 *The Highlands of the Lowlands: Environment and Archaeology in the Stann Creek District, Belize, Central America*. Prehistory Press, Madison.
- Graham, E. , L. McNatt, M. A. Gutchen  
1980 Excavations in Footprint Cave, Caves Branch, Belize. *Journal of Field Archaeology*, 7(2) L153-172.
- Harrison, E.  
2003 A Circular Shrine and Repositioned Stelae at the Oshon Site (Operation 24). In *Between the Gorge and the Estuary: Archaeological Investigations of the 2001 Season of the Xibun Archaeological Research Project*, edited by P. A. McAnany and B. S. Thomas, pp. 165-185. Submitted to the Department of Archaeology, Belmopan, Belize.  
<http://www.bu.edu/tricia/reports/xarp2003/index.shtml>
- Harrison E. and K. Acone  
2002 Further Investigations at Pechtun Ha: Feasting and Mass Importation of Cave Speleothems. In *Sacred Landscape and Settlement in the Sibun River Valley: XARP 1999 Survey and Excavation*, edited by P. A. McAnany, pp. 123-140. SUNY Institute of Mesoamerican Studies Occasional Paper 8. Albany, NY.
- Harrison-Buck, E.  
2007 *Materializing Identity Among the Terminal Classic Maya: A Study of Architecture and Ceramics in the Sibun Valley, Belize*. Unpublished Ph.D. dissertation, Department of Archaeology, Boston University, Boston, MA.
- Harrison-Buck, E. and P. A. McAnany  
2006 Terminal Classic Circular Shrines and Ceramic Material in the Sibun Valley, Belize: Evidence of Northern Yucatec Influence in the Eastern Maya Lowlands. In *Archaeological Investigations in the Eastern Maya Lowlands: Papers of the 2005 Belize Archaeology Symposium, Research Reports in Belizean Archaeology Volume 3*, edited by J. Morris, S. Jones, J. Awe and C. Helmke, pp. 287-299. Belize Print Ltd., Belmopan, Belize.
- Helmke, C. G., P. R. Colas, and J. J. Awe  
1998 Comments on the Typology, Epigraphy and Iconography of the Actun Tunichil Muknal Vase and the Belize Valley Modeled-carved Vessels. In *The Western Belize Regional Cave Project: a report of the 1997 Field Season*, edited by J. J. Awe, pp. 93-140. Department of Anthropology Occasional Paper, No. 1. University of New Hampshire, Durham.
- Kepecs, S., G. Feinman, and S. Boucher  
1994 Chichén Itzá and Its Hinterland, a World-Systems Perspective. *Ancient Mesoamerica* 9(1):141-158.
- LeCount, L. J.  
1996 *Pottery and Power: Feasting, Gifting, and Displaying Wealth Among the Late and Terminal Classic Lowland Maya*. Unpublished Ph.D. dissertation, UCLA.  
2005 Continuity and Change in the Ceramic Complex of Xunantunich During the Late and Terminal Classic Periods. In *Geographies of Power: Understanding the Nature of Terminal Classic Pottery in the Maya Lowlands*, edited by S. L. López Varela and A. E. Foias, pp. 93-106. BAR International Series 1447, Oxford.
- Masson, M. A. and S. B. Mock  
2004 Ceramics and Settlement Patterns at Terminal Classic-Period Lagoon Sites in Northern Belize. In *The Terminal Classic in the Maya Lowlands: Collapse, Transition, and Transformation*, edited by A. A. Demarest, P. M. Rice, and D. S. Rice, pp. 367-401. University Press of Colorado, Boulder.

- Mock, S. B.  
1994 *The Northern River Lagoon Site (NRL): Late to Terminal Classic Maya Settlement, Saltmaking, and Survival on the Northern Belize Coast*. Ph.D. Dissertation, The University of Texas at Austin.
- 2005 Pushing the Limits: Late to Terminal Classic Settlement and Economies on the Northern Belize Coast. In *Geographies of Power: Understanding the Nature of Terminal Classic Pottery in the Maya Lowlands*, edited by S. L. López Varela and A. E. Foias, pp. 121-133. BAR International Series 1447, Oxford.
- Pendergast, D. M.  
1974 *Excavations at Actun Polbilche, Belize*. Royal Ontario Museum Monograph 1. Toronto, Ontario, Canada.
- 1990 *Excavations at Altun Ha, Belize, 1964-1970, Vol. 3*. Royal Ontario Museum, Toronto, Canada.
- Peterson, P. A.  
2006 *Ancient Maya Ritual Cave use in the Sibun Valley, Belize*. Ph.D. Dissertation, Boston University, Department of Archaeology, Boston, MA.
- Reents, D.  
1981 *The 1978 Caves Branch Cave Archaeological Project Ceramic Analysis*. Manuscript on file, Department of Archaeology, Belmopan, Belize.
- Ruppert, K.  
1935 *The Caracol at Chichén Itzá, Yucatán, Mexico*. Publication No. 454. Washington, DC: Carnegie Institution of Washington.
- Sabloff, J. A.  
1973 Continuity and Disruption during Terminal Late Classic Times at Seibal: Ceramic and Other Evidence. In *The Classic Maya Collapse*, edited by T. P. Culbert, pp. 107-132. University of New Mexico Press, Albuquerque.
- 1975 *Excavations at Seibal: Ceramics*. Memoirs of the Peabody Museum of Archaeology and Ethnology Vol. 13, No. 2. Harvard University, Cambridge, MA.
- 1977 Old Myths, New Myths: The Role of Sea Traders in the Development of Ancient Maya Civilization. In *The Sea in the Pre-Columbian World*, edited by E. P. Benson, pp. 67-97. Dumbarton Oaks Research Library and Collections, Washington, DC.
- Sabloff, J. A. and W. J. Rathje  
1975 *A Study of Changing Pre-Columbian Commercial Systems: The 1972-1973 Seasons at Cozumel, Mexico*. Monographs of the Peabody Museum of Archaeology and Ethnology, No. 3. Harvard University, Cambridge, MA.
- Smith, R. E.  
1971 *The Pottery of Mayapan: Including Studies of Ceramic Material from Uxmal, Kabah, and Chichén Itzá*. Papers of the Peabody Museum of Archaeology and Ethnology Vol. 66. Harvard University, Cambridge, MA.
- Thompson, J. E. S.  
1939 *Excavations at San Jose, British Honduras*. Publication No. 506. Carnegie Institution of Washington, Washington, DC.

---

## 12 THE TERMINAL CLASSIC IN THE THREE RIVERS REGION

*Lauren A. Sullivan, Brett A. Houk, and Fred Valdez, Jr.*

---

*The Three Rivers Region was extensively occupied and utilized during the Terminal Classic. This paper focuses on the last occupation of the region, during the Terminal Classic, as represented by material remains, and the implications of interaction with neighboring areas. By the end of this period, the large centers and rural sites of the Late Classic were virtually abandoned with relatively little evidence of Postclassic habitation. The collapse of elite control and authority are discussed in light of recent architectural and ceramic data, which suggest a major cultural transformation at the end of the Terminal Classic.*

### **Introduction**

The data discussed in this paper were recovered from the Programme for Belize Archaeological Project (PFBAP) and the Chan Chich Archaeological Project (CCAP), both located in the Three Rivers Region of northwestern Belize (Figure 1). The Three Rivers Region encompasses parts of Belize, Guatemala, and Mexico (Adams 1995). Three escarpments—the Booths River escarpment, the Rio Bravo escarpment, and the La Lucha escarpment - form the principal topographic features of the area. Previous research has demonstrated that this area was extensively utilized, with at least five urban centers (La Milpa, Dos Hombres, Gran Cacao, Maax Na, and Great Savannah) and numerous smaller sites, groups, houses, terraces, and other features thriving by the end of the Late Classic on the Belizean side of the region (Valdez and Sullivan 2006; Walling et al. 2005).

While occupation in the area began during the Middle Preclassic, the later half of the Late Classic (Tepeu 2-3, ca. A.D.700 to 850) had the highest population levels (Adams et al. 2004). At this time, there was an increase in the number of sites of all sizes and in the construction of monumental architecture. As has been suggested for the entire Maya Lowland area, this population increase throughout the Late Classic and into the Terminal Classic most likely

stressed the agricultural system, taxed the natural resources, and led to increasing competition among the elite (Shimkin 1973; Willey 1973).

By the end of the Terminal Classic/Tepeu 3, the Maya experienced a significant reorganization as documented through the lowland Maya area. The mechanisms that triggered the decline have long been debated, with climatic factors (Gill 1994), land exhaustion (Adams 1995), warfare (Sabloff and Willey 1967; Webster 1977), and internal strife (Buttles and Valdez 2006; Valdez 1989) all cited as contributing elements. Further complicating the issue is the fact that the “collapse” was not uniform across the Maya area (D. Chase and A. Chase 2004). Many of the large centers of the Peten, such as Tikal, Uaxactún, and Yaxha, were virtually abandoned by AD 850–900, while sites in the northern lowlands thrived for several more centuries (Demarest et al. 2004). Other problems in the discussion of the Terminal Classic stem from the origin and use of the term “Terminal Classic.” This term was originally used at the 1965 Maya Lowland Ceramic Conference to mark the transition from the Classic to Postclassic based on ceramic characteristics (Willey et al. 1967). The term eventually came to be associated with the idea of widespread

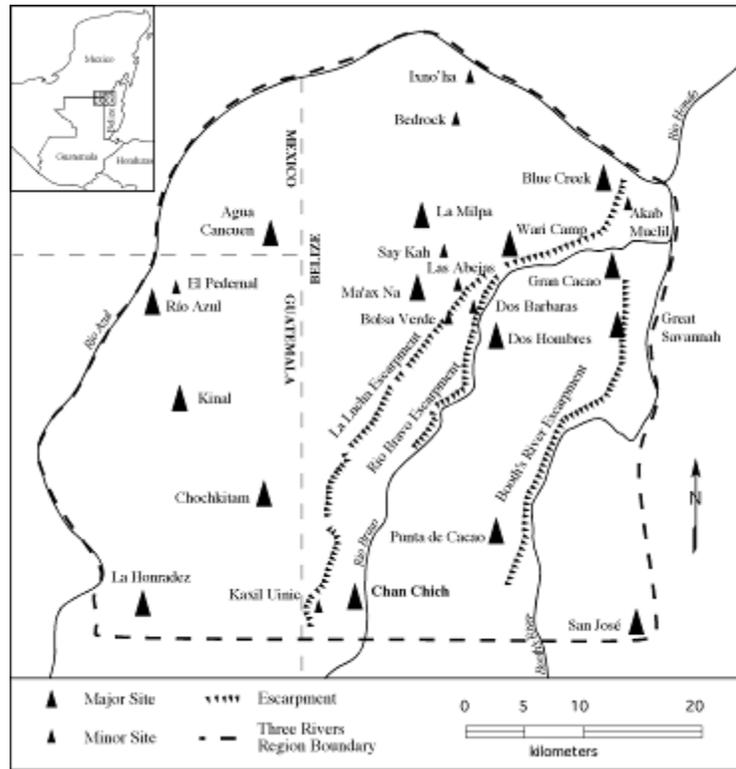


Figure 1. Map of Three Rivers Regions

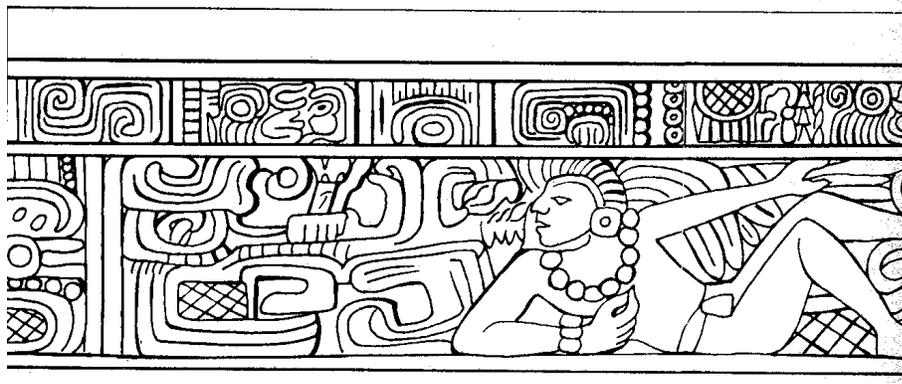


Figure 2. A partially reconstructable Fine Orange vessel

collapse, destruction, and the end of the cultural practices associated with the “Classic Maya” (Rice et. al. 2004). Extensive archaeological research over the past several decades across the Maya area has successfully demonstrated the highly variable nature of this time period.

Data from the Three Rivers Region indicate that after a prosperous Late Classic

to Terminal Classic there was a cessation of monumental construction, a major decline in rural population (Robichaux 1995; Adams 1999), and a decrease in ceramic production (Sullivan and Valdez 2004). Evidence for Postclassic occupation in the Three Rivers Region is scarce, with little to no evidence of a rural population or construction at the large sites above the escarpments

(Robichaux 1995). Jeff Durst (1996) reported Postclassic ceramics from excavations at Gran Cacao; however, the nature and extent of Postclassic at the site is not yet fully understood. Recent work at the site of Akab Muclil, a small settlement near the banks of the Rio Bravo, revealed an Early Postclassic construction phase (Padilla et al. 2006). However, to date we have yet to define Postclassic occupation at sites above the escarpments. These data suggest a breakdown of elite control and the subsequent abandonment of most of the Three Rivers Region by the end of the Terminal Classic/Tepeu 3 (ca. A.D. 850–900)

### **Architectural Data**

Towards the end of the Terminal Classic, construction techniques in the region were clearly not what they once were. As previously stated, the construction of monumental architecture virtually halted. The structures that are built appear to have been quickly made without the mortared retaining walls, carefully placed facing stones, thick plastered floors, or platform heights that were observed during the Late Classic. Another change was the construction of buildings in the middle of formerly sacred plazas. Low-walled structures made from stones stolen from existing Late Classic monumental structures and constructed on top of Late Classic plaza surfaces are observed or suspected at La Milpa (Structure 86) (Tourtellot and Rose 1993), Dos Hombres (Houk 1996), and Kinal (Hageman 1992).

At the smaller site of Dos Barbaras, Lewis (2005) has documented a significant Late Classic occupation for most of the site with the addition of one Courtyard (Group G) that appears to have been constructed in the Terminal Classic. The primary structure associated with this courtyard had moderate amounts of cut-stone masonry and plaster

flooring, while the foundation of the smaller structure was composed of small-medium sized cobble fill. Lewis (2005) also notes a plain stela that appears to have been erected late in the development of Dos Barbaras and may represent an attempt by the elite of the site “to exercise some degree of political autonomy during the political instabilities of the Terminal Classic” (Lewis 2005).

At Altun Ha, Pendergast (1992) suggests that the elite gradually lost control over labor forces, which resulted in a decrease in architectural construction, repair, and modification in central areas. Although the elite of Altun Ha did make a point to maintain and modify their own residential structures as if to “keep up appearances”, their leadership roles must have been drastically altered from what they once were (Pendergast 1992). At Tikal, when structures were renovated “the difference in architectural quality and finish was notable” (Valdes and Fahsen 2004: 151). These data all point towards a deteriorating economy, with the elites lacking the resources to maintain power and prestige at their former levels however hard they may have tried (Adams et. al. 2004; Sullivan and Valdez 2004).

Some of the best architectural data for the Terminal Classic come from La Milpa, where Hammond and Tourtellot (2004) report major construction projects initiated but left unfinished in the early ninth century A.D. These half-finished buildings were silent witnesses to the collapse of the site but do little to explain the reasons for the center’s abandonment. As Hammond and Tourtellot (2004:300) put it, “the substantial, dense population documented throughout the settlement area seems to have melted away” with no sign of violence and very little in the way of post-collapse squatter occupation.

### **Ceramic Data**

In the Three Rivers Region a clear Tepeu 2-3 ceramic component has been defined with a very strong continuity between the Late Classic (Tepeu 2) and the Terminal Classic (Tepeu 3). However, one of the problems in the region is trying to define a clear “break” between the Late Classic (Tepeu 2) and the Terminal Classic (Tepeu 3). Part of this problem may be due to the fact that Terminal Classic ceramics might be related to occupations of earlier (Tepeu 2) structures without the addition of new construction layers to aid in clearer chronological separation (Graham 1985; Lincoln 1985). Another issue is the absence of typical Terminal Classic ceramic markers such as Daylight Orange: Darknight variety, Fine Orange, Plumbate, and other Terminal Classic “finewares” at the majority of upland sites in the area. Unfortunately, these ceramic types are generally associated with elite groups, and their absence does not necessarily reflect a lack of Terminal Classic populations (A. Chase and D. Chase 2004). Smith (1955) had similar problems in his original description of Tepeu 1, 2, and 3—referring to a “Tepeu General” category, which included styles that could not be clearly associated with a Tepeu subphase (e.g. Tepeu 1, 2, and/or 3). While he was able to use well-preserved mortuary vessels to help clarify these divisions, he had a much harder time with utilitarian vessels. Smith (1955:24) suggested that Tepeu 1 and 2 ceramics were likely “used by the people of Tepeu 3” and that precursors to Tepeu 3 styles could be identified in Tepeu 1 and 2 contexts, further obscuring firm divisions.

Ceramic data from the Three Rivers Region do indicate the following trends from the Late to the Terminal Classic: an increase in utilitarian wares (specifically large unslipped and striated jars); an increase in the thickness of these large vessels (especially at the lip) (Adams and

Adams 2000); an increase in the use of “face” vessels with appliquéd and modeled decoration; the appearance of slate ware and/or imitation slate ware; a decrease in the predominant Late Classic types such as Achote Black, Subin Red, and Tinaja Red; and a decrease in overall ceramic diversity and quality. By the end of the Terminal Classic, the ceramics were generally of poor quality, with crumbly paste, large, coarse, and poorly sorted inclusions, and little to no slip.

Examples of these large utilitarian unslipped jars can be found at Dos Hombres and Dos Barbaras. One of the two Late Classic burials from the site center of Dos Hombres was placed in a lip to lip cache consisting of a Cayo Unslipped vessel covered by a Subin Red bowl (Houk 1996; Sullivan 2002). A similar pattern is observed in Tepeu 2-3 burials from the site of Dos Barbaras. A burial consisting of a large Cayo Unslipped vessel covered by a Subin Red bowl was found in front of the largest structure at Dos Barbaras (Lewis 2005; MeBar and Lewis 2005; Sullivan 2002). An increase in utilitarian wares has also been noted at other sites in the region (Sullivan and Sagebiel 2003). At Tikal, Burial 77 (A.D. 771) is thought to contain the remains of the latest known ruler as recorded on Stela 11 (A. Chase 1992). Coggins (1975) has observed that the pottery recovered from Burial 77 is the same in form and function as the pottery recovered from a typical Late Classic residential burial assemblage. This phenomenon was also noted at Uaxactún where Smith (1955:6) states: “Tepeu burials contain no obvious trade pieces and no vessels specially made for interment” (aside from a few exceptions). Similarly, Ball (1993:263) notes “a de-emphasis of painted wares” in the northern lowlands during the Late Classic.

The increase in the number of “human face” effigy vessels may reflect a move away from more abstract religious symbolism and toward anthropomorphism similar to what was observed at Altar de Sacrificios (Adams 1973). Diane Chase (1992) suggests that this move away from abstract symbolism, which began in the Late Classic, was a trend not fully realized until the Postclassic with the “Classic Collapse” marking the religious transformation of Maya society. Two caches, recovered from the site of Dos Barbaras, consisted of two unslipped “face” vessels flanking the stairway of the largest structure at the site (Group B - Structure 6). Similar “face” vessels were found at the site of Ma’ax Na below the stairway of an elite residential structure and may be related to the remodeling of the building. At the site of Bolsa Verde, a face vessel was recovered in a cache associated with the one of the latest construction phases of the largest structure at the site (King and Shaw 2003). An unslipped and appliquéd style vessel that contained unmodified *Spondylus* shell and a piece of modified shell was recovered from the stairway of the largest structure at Las Abejas. The dating of these vessels is somewhat problematic in that they are associated with other Late Classic types and are not restricted to pure Terminal Classic deposits. In some cases (e.g., Las Abejas, Dos Barbaras) these vessels are associated with the last construction phase and *may* be associated with the termination and/or abandonment of a structure.

Previous research in the area (Sullivan 2002; Sullivan and Sagebiel 2003) has suggested that throughout the Late Classic there was an increase in local autonomy in terms of ceramic production and distribution as well as a breakdown of the prestige good exchange system that characterized earlier times. Ball’s (1993) work in the Mopan-Macal area and

including a range of sites (i.e., Buenavista, Cahal Pech, Guerra, Nohock Ek, and Eden) also points strongly towards localized ceramic complexes during the Late Classic, correlating these changes to a more fragmented political environment which sets the stage for the Terminal Classic decline. While in other areas (small sites along the coast, Lamanai, Altar de Sacrificios, Seibal, and in the Yucatan) the Terminal Classic brings with it a proliferation of new ceramic types hinting at increasing interregional exchange and communication (Adams 1971; Graham 2004; Mock 2004; Sabloff 1975), this is clearly not the case for most of the Three Rivers Region. The majority of slate ware recovered most likely represent locally made imitations of Ticul Thin Slate and may represent a feeble effort on the part of the elite to associate themselves with the growing sites to the north.

In terms of identifying any continuing Postclassic occupation through ceramics, only a few Postclassic sherds have been located at sites on the escarpment, including a whole censer from the summit of a mound at Chan Chich (Guderjan 1991), censer fragments from the base of Stela 2 at Dos Hombres (Houk 1996), and from Stela 7 and Stela 12 at La Milpa (Hammond and Bobo 1994). The presence of these few censers probably indicates pilgrimages to major Classic period centers and does not represent Postclassic occupation (Hammond and Bobo 1994). A Postclassic “jaguar-shaped” plumbate foot was recovered by Stan Walling at Chawak But’o’ob, a Late to Terminal Classic commoner residential site along the Rio Bravo Escarpment. Recent excavations at Akab Muclil, which is at the base of the Rio Bravo escarpment in a much different ecological setting, suggest some Early Postclassic occupation of the region may have occurred (Padilla et al. 2006).

### **Ritual Deposits**

Further evidence of Terminal Classic activities is found in the deposits recovered from the sites of Dos Hombres and Chan Chich that include large quantities of broken ceramics and other artifacts placed on elite residential courtyard floors or steps to buildings (Adams et al. 2004; Houk et al. 1999). These deposits are open to various interpretations until additional study is performed on them, but, at least superficially, they resemble middens in terms of their composition, but ritual termination deposits in terms of their contexts (Adams et al. 2004; Houk 2003; Houk et al. 1999). The deposition of broken pottery, dark soil, and other remains on the top of final construction phases is seen at many sites in Belize, including Blue Creek (Clayton et al. 2005), Blackman Eddy (Garber et al. 1998; 2004), Punta de Cacao (Guderjan et al. 1991), and Cerros (Garber 1989), and has often been interpreted as specific ritual behavior aimed at terminating the structure. When viewed as a group, however, there is much variation in these features, and it is likely that multiple activities (some ritual, others not) are responsible for their formation.

At Dos Hombres, approximately 4.3 cubic meters of a midden-like deposit (Problematic Deposit 2) were excavated in a test pit in a small, elite courtyard at the entrance to the elevated acropolis at the site. This deposit was approximately 40–50 cm thick and had been placed on the last floor of the courtyard. The vast majority of artifacts were broken, but the deposit contained some of the most exotic artifacts recovered from any context at the site, including numerous partially reconstructable vessels, an eccentric biface of chert from northern Belize, a roller stamp, a figurine head with an elaborate bird headdress, a ceramic animal face, a drilled jaguar tooth, an obsidian biface, numerous obsidian blade

fragments, and an anthropomorphic whistle. The ceramics from the deposit comprised over 6,700 sherds, which included primarily utilitarian types (striated or unslipped) and a variety of finewares, including a Cubeta Incised sherd with hieroglyphs, Daylight Orange: Darknight variety plate fragments, and Palmar Orange Polychrome vessel sherds. The Daylight Orange: Darknight variety sherds provide the Tepeu 3, Terminal Classic, age assessment for the deposit. If this deposit were a midden related to Terminal Classic occupation of the Acropolis, faunal remains, in addition to artifactual material, would be expected. The only bone identified from the excavated sample, however, included approximately five fragments of unidentifiable animal bone, three pieces of worked bone, 10 fragments of turtle carapace (perhaps from a rattle), a drilled jaguar tooth, and five human cranial fragments (Houk 1996:Table C.10).

At Chan Chich, Terminal Classic artifacts were encountered on the steps of two palace structures in the western half of the site (Houk 2001; Houk et al. 1999). One structure (Structure C-2) is located in Courtyard C-1 (Norman's Temple); a tightly enclosed group built on a heavily modified hilltop. The other structure (Structure C-6) is located in Plaza C-2, near the base of the same hill (Houk 2001).

Partial vessel fragments, exotic artifacts, and human skeletal material were concentrated on the lower three steps on both of these structures (Structures C-2 and C-6). Although not as dense as the Dos Hombres deposit, these features are comparable in composition. They contained numerous partially reconstructable vessels, figurine fragments, shell artifacts, obsidian blades, manos, incised bone, and a whistle fragment. Faunal remains were absent or represented by very small samples, including a jaguar canine discovered during the 2001 excavations. A partially

reconstructable Fine Orange vessel (Figure 2) and sherds from an imitation Fine Orange vessel date these features to the Terminal Classic (Houk 2002).

The significance of the features from Chan Chich and Dos Hombres lies in their context and composition. They lack faunal remains that would suggest the deposits are middens, and they are found either on steps to palaces (as at Chan Chich) or physically blocking important access points (as at Dos Hombres). The frequency of artifacts that could be termed “exotic” bear similarities to termination events, but Houk (2001, 2003) has argued that these features are secular in nature and presumably tied to rather tumultuous last days at the two sites.

Perhaps the case of Special Deposit 1 at Blue Creek demonstrates the difficulties in interpreting these Terminal Classic deposits; two distinct and at odds interpretations have been put forth to explain the origin of that deposit by Guderjan (2004) and Clayton et al. (2005). Special Deposit 1 was “a dense concentration of ceramic sherds and dark soil [that] was encountered on Structure 3’s stairway” at Blue Creek (Clayton et al. 2005:122). This feature “was located along the building’s centerline and extended 1.2 m into the plaza and 2.2 m up the slope of the mound,” and “the material entirely covered the remains of the stairway shrine and fanned out from its sides, burying the lowest four to five steps of the stairway” (Clayton et al. 2005:122). Guderjan (2004:239) concluded, perhaps through a misunderstanding of the conclusions reached by Clayton et al. (2002), that the deposit “was a large-scale termination ritual that included smashing pots against the facade of the [Structure 3].” Clayton et al. (2005:128), however, put forth a compelling argument that the feature represents a secondary deposit of midden material and “appears to represent the remains of complex termination activities directly associated

with the abandonment of the structure, and perhaps the site itself, but much of the material used in the Terminal Classic event had been produced by long-term feasting-refuse discard behavior.”

The feasting argument is an interesting one, and perhaps the deposit at Dos Hombres bears re-examination in light of it. However, Problematic Deposit 2 from Dos Hombres, with its high frequency of non-ceramic, elite artifacts, and its low frequency of faunal material, does not seem to be feasting debris in either primary or secondary context.

Others have interpreted similar Terminal Classic deposits as middens of squatters (see Culbert 1973), and Helmke (2006) has documented Terminal Classic “occupation debris” features at Pook’s Hill 1 in the Roaring Creek Valley, south of the Three Rivers Region. The deposits described by Helmke (2006:182–183) include “‘terminal occupation debris’ that comprises secondary, commingled deposits of artefactual remains.” These deposits typically include a mixture of domestic artifacts, a few special finds, and the remains of food refuse and faunal materials, and were found “either directly atop and/or abutting terminal phase architecture,” usually in internal corners formed by terraces and stairs or corners between structures (Helmke 2006: 182–183). Helmke (2006) concludes reasonably that these may represent piles formed from sweeping clean steps or high-traffic areas.

## **Conclusions**

The data presented here demonstrate that a drastic change in regional organization occurred during the Terminal Classic. The upland area of this region along the escarpments that was heavily utilized in the Late Classic was virtually abandoned. The quality of the architecture declined and construction ceased, ceramic quality and

quantity decreased, and the nature of the ritual deposits hint at the destruction of elite culture as it was once known. Regardless of the specific mechanisms behind these changes it is clear that the elite lost the control and power they once had, resulting in the abandonment of ceremonial centers and a depopulation of the countryside.

The archaeological evidence of abandonment and its aftermath is problematic and debatable, as demonstrated in the multiple attempts to characterize and understand so called “problematic” Terminal Classic deposits and their contexts. As described above, the examples from Pook’s Hill 1 south of the region, as well as those described at Blue Creek by Clayton et al (2005) seem fundamentally different from the Terminal Classic deposits at Chan Chich and Dos Hombres. It is likely that different activities resulted in the formation of these features. Furthermore, similar deposits have yet to be found at other major centers, particularly La Milpa. This observation calls into question Houk’s (2000, 2001) hypothesis that a regional calamity befell the elite of the region at the end of the Terminal Classic, and it reinforces the notion that the timing and nature of elite abandonment of the major centers was highly variable. Each site may have followed its own unique trajectory along the path to collapse; some experiencing violence and others going “out with a whimper,” as Hammond and Tourtellot (2004:301) have proposed for La Milpa. Overall, the nature of the Terminal Classic demise of the major sites in the Three Rivers Region is poorly understood, and this situation is even worse for the rural settlement areas for which we have little to no data relating to their abandonment.

*Acknowledgments* The ideas in the paper are the result of work by many individuals from multiple institutions associated with research in the Three Rivers Region, and we

would like to thank the participants of not only the Programme for Belize Archaeological Project, but those of the Blue Creek Archaeological Project, the Blue Creek Regional Political Ecology Project, the La Milpa Archaeological Project, and the Chan Chich Archaeological Project, as well, for all their contributions to our understanding of ancient Maya society in the region. We thank the Institute of Archaeology (IA), especially John Morris and Jaime Awe, for supporting and encouraging our continued work in Belize. We also thank the IA for organizing this symposium and promptly publishing the papers every year.

## References Cited

- Adams, R.E.W.  
1971 The Ceramics of Altar de Sacrificios. *Papers of the Peabody Museum of Archaeology and Ethnology* 63(1). Harvard University, Cambridge, Massachusetts.
- 1973 Maya Collapse: Transformation and Termination in the Ceramic Sequence at Altar de Sacrificios. In *The Classic Maya Collapse*, edited by T. P. Culbert, pp. 133-163. School of American Research, University of New Mexico Press, Albuquerque.
- 1995 The Programme for Belize Regional Archaeological Project: 1994 Interim Report, Introduction. In *The Programme for Belize Archaeological Project, 1994 Interim Report*, edited by R. E.W. Adams and F. Valdez, Jr., pp. 1-14. The Center for Archaeology and Tropical Studies and The University of Texas at San Antonio
- 1999 *Rio Azul: An Ancient Maya City*. University of Oklahoma Press, Norman.
- Adams, R.E.W. and Jane Jackson Adams  
2000 Rio Azul Ceramic Sequence Summary. In *Rio Azul Reports Number 5, The 1987 Season*, edited by R.E.W. Adams, pp. 264-272. The University of Texas at San Antonio.

- Adams, R. E. W., H. R. Robichaux, Fred Valdez, Jr., Brett A. Houk, and Ruth Mathews  
2004 Transformations, Periodicity, and Urban Development in the Three Rivers Region. In *The Terminal Classic in the Maya Lowlands: Collapse, Transition, and Transformation*, edited by Arthur A. Demarest, Prudence M. Rice, and Don S. Rice, pp. 324–341. University Press of Colorado, Boulder.
- Buttles, Palma J. and Fred Valdez Jr.  
2006 Terminal Classic Events: Colha, Belize and the Central Maya Lowlands. Paper presented at the 2006 Belize Archaeology Symposium. Belize City, Belize.
- Ball, Joseph W.  
1993 Pottery, Potters, Palaces, and Politics: Some Socioeconomic and Political Implications of Late Classic Maya Ceramic Industries. In *Lowland Maya Civilization in the Eighth Century A.D.*, edited by J.A. Sabloff and J.S. Henderson, pp. 243-272. Dumbarton Oaks, Washington, D.C.
- Chase, Arlen 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 and London
- Chase, Diane Z.  
1992 Postclassic Maya Elites: Ethnohistory and Archaeology. In *Mesoamerican Elites: An Archaeological Assessment*, edited by D. Z. Chase and A. F. Chase, pp. 118-134. University of Oklahoma Press, Norman and London.
- Chase, Arlen F. and Diane Z. Chase  
2004 Terminal Classic Status-Linked Ceramics and The Maya “Collapse”. In *The Terminal Classic in the Maya Lowlands: Collapse, Transition, and Transformation*, edited by Arthur A. Demarest, Prudence M. Rice, and Don S. Rice, University Press of Colorado, Boulder.
- Chase, Diane and Arlen F. Chase  
2004 Hermeneutics, Transitions, and Transformations. In *The Terminal Classic in the Maya Lowlands: Collapse, Transition, and Transformation*, edited by Arthur A. Demarest, Prudence M. Rice, and Don S. Rice, pp. 12-27. University Press of Colorado, Boulder.
- Clayton, Sarah C., Laura J. Kosakowsky, and W. David Driver  
2002 “Rubbish or Ritual? An Examination of Terminal Deposits at Blue Creek.” Paper presented at the 67th Annual Meeting of Society for American Archaeology, 20–24 March, Denver, CO.
- Clayton, Sarah, W. David Driver, and Laura Kosakowsky  
2005 Rubbish or Ritual? Contextualizing a Terminal Classic Problematical Deposit at Blue Creek Belize. *Ancient Mesoamerica* 16: 119-130.
- Coggins, Clemency C.  
1975 Painting and Drawing Styles at Tikal: An Historical and Iconographic Reconstruction. Unpublished Ph.D. Dissertation, Department of Anthropology, Harvard University.
- Culbert, T. Patrick  
1973 The Maya Downfall at Tikal. In *The Classic Maya Collapse*, edited by T. Patrick Culbert, pp. 63-92. University of New Mexico Press, Albuquerque.
- Demarest, Arthur A., Prudence M. Rice, and Don S. Rice  
2004 Assessing Collapse, Terminations, and Transformations. *The Terminal Classic in the Maya Lowlands: Collapse, Transition, and Transformation*, edited by Arthur A. Demarest, Prudence M. Rice, and Don S. Rice, pp. 545-572. University Press of Colorado, Boulder.
- Durst, Jeffrey J.  
1996 Excavations at Gran Cacao (RB 43) Site Investigations in Northwestern Belize. Unpublished M.A. Thesis, Department of Anthropology, The University of Texas at San Antonio.
- Garber, James F.  
1989 *Archaeology at Cerros, Belize, Central America, Volume II, The Artifacts*. Southern Methodist University Press, Dallas.
- Garber, James F., W. David Driver, Lauren A. Sullivan, and David M. Glassman

- 1998 Bloody Bowls and Broken Pots: The Life, Death, and Rebirth of a Maya House. In *The Sowing and the Dawning: Termination, Dedication, and Transformation in the Archaeological and Ethnographic Record of Mesoamerica*, edited by Shirley Boteler Mock, pp. 125–134. University of New Mexico Press, Albuquerque.
- Garber, James F., M. Kathryn Brown, W. David Driver, David M. Glassman, Christopher J. Hartman, F. Kent Reilly III, and Lauren A. Sullivan  
 2004 Archaeological Investigations at Blackman Eddy, Belize. In *Archaeology in the Belize Valley: Half a Century of Maya Settlement Studies*, edited by James F. Garber, pp. 48-69. University Press of Florida, Gainesville.
- Gill, Richard  
 1994 The Great Maya Droughts. Unpublished Ph.D. dissertation, Department of Anthropology, The University of Texas at Austin.
- Graham, Elizabeth  
 1985 Facets of Terminal to Post-Classic Activity in the Stann Creek District, Belize. In *The Lowland Maya Postclassic*, A. F. Chase and P. M. Rice, eds., pp 215-229. University of Texas Press: Austin.  
 2004 Lamanai Reloaded: Alive and Well in the Early Postclassic. In *Research Reports in Belizean Archaeology, Vol. 1*, edited by Jaime Awe, John Morris, and Sherilyne Jones, pp. 223-241. Institute of Archaeology, Belmopan, Belize.
- Guderjan, Thomas H.  
 1991 Chan Chich. In *Maya Settlement in Northwestern Belize: The 1988 and 1990 Seasons of the Rio Bravo Archaeological Project*, edited by T. H. Guderjan, pp. 35-50. Maya Research Program and Labyrinthos, California.  
 2004 Public Architecture, Ritual, and Temporal Dynamics at the Maya Center of Blue Creek, Belize. *Ancient Mesoamerica* 15: 235-250.
- Hammond, Norman, and Matthew R. Bobo  
 1994 Pilgrimage's Last Mile: Late Maya Monument Veneration at La Milpa, Belize. *World Archaeology* 26:19-34.
- Hammond, Norman, and Gair Tourtellot  
 2004 Out With a Whimper: La Milpa in the Terminal Classic. In *The Terminal Classic in the Maya Lowlands: Collapse, Transition, and Transformation*, edited by Arthur A. Demarest, Prudence M. Rice, and Don S. Rice, pp. 288–301. University Press of Colorado, Boulder.
- Hageman, Jon  
 1992 The 1991 Test Pit program at Kinal, Guatemala. Unpublished M.A. report, Department of Anthropology, The University of Texas at Austin.
- Hanratty, Catherine C.  
 1998 Excavations in the Structure 37 Courtyard. Paper presented at the 63rd annual meeting of the Society for American Archaeology, Seattle, Washington.
- Helmke, Christophe G. B.  
 2006 A Summary of the 1999–2002 Seasons of Archaeological Investigations at Pook's Hill, Cayo District, Belize. In *Archaeological Investigations in the Eastern Maya Lowlands: Papers of the 2005 Belize Archaeology Symposium*, edited by John Morris, Sherilyne Jones, Jaime Awe, and Christophe Helmke, pp. 173–192. Research Reports in Belizean Archaeology Volume 3. Institute of Archaeology, National Institute of Culture and History, Belmopan, Belize.
- Houk, Brett A.  
 1996 The Archaeology of Site Planning: An Example from the Maya Site of Dos Hombres, Belize. Unpublished Ph.D. dissertation, Department of Anthropology, The University of Texas at Austin.  
 2000 Life, the Universe, and Everything: Re-evaluating Problematic Deposit 2 from Dos Hombres, Belize. In *The 1998 and 1999 Seasons of the Chan Chich Archaeological Project*, edited by Brett A. Houk, pp. 141–150. Papers of the Chan Chich Archaeological Project, Number 4. Mesoamerican Archaeological Research Laboratory, The University of Texas, Austin, Texas.  
 2001 All Good Things: The Three Rivers Region ca. AD 850. Paper presented at the 66<sup>th</sup> annual meeting of the Society for

- American Archaeology, New Orleans, Louisiana.
- 2003 The Ties that Bind. In *Heterarchy, Political Economy, and the Ancient Maya*, edited by Vernon L. Scarborough, Fred Valdez, Jr., and Nicholas Dunning, pp. 52-63. The University of Arizona Press, Tucson.
- Houk, Brett A., Owen Ford, and Amy E. Rush  
1999 Fear and Loathing in Northwest Belize. Paper presented at the 64th Annual Meeting of the Society for American Archaeology, Chicago, Illinois.
- King, Eleanor M. and Leslie C. Shaw  
2003 A Hierarchical Approach to Site Variability. In *Heterarchy, Political Economy, and the Ancient Maya*, edited by Vernon L. Scarborough, Fred Valdez, Jr., and Nicholas Dunning, pp. 64-76. The University of Arizona Press, Tucson.
- Lewis, Brandon  
2005 Research at Dos Barbaras: An Overview. In *Programme for Belize Archaeological Project: Report of Activities from the 2004 Field Season*, edited by F. Valdez, Jr., pp. 145-158. Occasional Papers, Number 4. Mesoamerican Archaeological Research Laboratory, The University of Texas at Austin.
- Lincoln, Charles E.  
1985 Ceramics and Ceramic Chronology. In *A Consideration of the Early Classic Period in the Maya Lowlands*, edited by Gordon R. Willey and Peter Mathews, pp. 55-94. IMS Publication No. 10. Albany: Institute of Mesoamerican Studies, State University of New York.
- MeBar, Yoav and Brandon Lewis  
2005 Dos Barbaras, Group B, Structure 6: 2003 to 2004 Excavations. In *Programme for Belize Archaeological Project: Report of Activities from the 2004 Field Season*, edited by F. Valdez, Jr. pp. 159-186. Occasional Papers, Number 4. Mesoamerican Archaeological Research Laboratory, The University of Texas at Austin.
- Mock, Shirley  
2004 Maya Traders on the North-Central Coast Belize Coast. In *Research Reports in Belizean Archaeology, Vol. 1*, edited by Jaime Awe, John Morris, and Sherilyne Jones, pp. 359-370. Institute of Archaeology, Belmopan, Belize.
- Padilla, Anthony, Molly Morgan, and Jon C. Lohse  
2006 and 2005 Season Excavations at Akab Muclil, Northwestern Belize. In *Final Season Summaries of the Blue Creek Regional Political Ecology Project: 2005 Investigations in Upper Northwestern Belize*, edited by Jon C. Lohse, pp. 12-39. Report submitted to the Institute of Archaeology, National Institute of Culture and History, Belmopan, Belize.
- Pendergast, David  
1992 Noblesse Oblige: The Elites of Altun Ha and Lamanai, Belize. In *Mesoamerican Elites: An Archaeological Assessment*, edited by D. Z. Chase and A. F. Chase, pp.61-79. University of Oklahoma Press, Norman and London.
- Rice, Prudence M., Arthur A. Demarest, and Don S. Rice  
2004 The Terminal Classic and the "Classic Maya Collapse" in Perspective. In *The Terminal Classic in the Maya Lowlands: Collapse, Transition, and Transformation*, edited by Arthur A. Demarest, Prudence M. Rice, and Don S. Rice, pp. 1-11. University Press of Colorado, Boulder.
- Robichaux, Hubert  
1995 Ancient Maya Community Patterns in Northwestern Belize: Peripheral Zone Survey at La Milpa and Dos Hombres. Unpublished Ph.D. dissertation, Department of Anthropology, The University of Texas at Austin.
- Sabloff, Jeremy A.  
1975 Excavations at Seibal: Ceramics. *Memoirs of the Peabody Museum of Archaeology and Ethnology, Vol. 13, No. 2*. Harvard University, Cambridge, Massachusetts.
- Sabloff, Jeremy A. and Gordon R. Willey  
1967 The Collapse of Maya Civilization in the Southern Lowlands: A Consideration of History and Process. *Southwestern Journal of Anthropology* 23(4):311-336.
- Shimkin, Demitri B.

- 1973 Models for the Downfall: Some Ecological and Culture-Historical Considerations. In *The Classic Maya Collapse*, edited by T. Patrick Culbert, pp. 269-300. University of New Mexico Press, Albuquerque.
- Smith, Robert E.  
1955 Ceramic Sequence at Uaxactún. Middle American Research Institute Publication 20. New Orleans, LA: Tulane University.
- Sullivan, Lauren A.  
2002 Evidence for Changing Dynamics in the Regional Integration of Northwestern Belize. In *Ancient Maya Political Economies*, pp. 197-222, edited by Marilyn Masson and David Freidel. Altamira Press, Walnut Creek, CA
- Sullivan, Lauren A. and Kerry L. Sagebiel  
2003 Changing Political Alliances in the Three Rivers Region. In *Heterarchy, Political Economy, and the Ancient Maya: The Three Rivers Region of the east-central Yucatan Peninsula*, edited by Vernon L. Scarborough, Fred Valdez, Jr. and Nicholas P. Dunning, pp. 25-36. University of Arizona Press, Tucson.
- Sullivan, Lauren A. and Fred Valdez, Jr.  
2004 Northwest Belize: A Regional Perspective on Cultural History. In *Research Reports in Belizean Archaeology, Vol. 1*, edited by Jaime Awe, John Morris, and Sherilyne Jones, pp. 185-196. Institute of Archaeology, Belmopan, Belize.
- Tourtellot, Gair III, and John Rose  
1993 *More Light on La Milpa Mapping: Interim Report on the 1993 Season*. Version 2.25. La Milpa Archaeological Project.
- Valdés, J. A. and F. Fahsen  
2004 Disaster in Sight: The Terminal Classic at Tikal and Uaxactun. In *The Terminal Classic in the Maya Lowlands: Collapse, Transition, and Transformation*, edited by A.A. Demarest, P. M. Rice and D. S. Rice, pp. 140-161. University of Colorado Press, Boulder.
- Valdez, Jr., Fred and Lauren A. Sullivan  
2006 The Programme for Belize Archaeological Project: Recent Regional Investigations. In *Research Reports in Belizean Archaeology, Vol. 3*, edited by John Morris, Sherilyne Jones, Jaime Awe, and Christophe Helmke, pp. 317-328. Institute of Archaeology, Belmopan, Belize.
- Valdez, Jr., Fred  
1989 La Decadencia de la Civilización Clásica Maya: Evidencias de la Tierras Bajas. *Yaxkin* XII (2):45-63.
- Walling, Stanley L., Peter F. Davis, Sandra Dias, and Melissa DeVito  
2005 Report of the 2004 Rio Bravo Archaeology Project: Site R.B. 47: Chawak But'o'ob. In *Programme for Belize Archaeological Project: Report of Activities from the 2004 Field Season*, edited by F. Valdez, Jr. pp. 115-143. Occasional Papers, Number 4. Mesoamerican Archaeological Research Laboratory, The University of Texas at Austin.
- Webster, David L.  
1977 Warfare and the Evolution of Maya Civilization. In *The Origins of Maya Civilization*, edited by R.E.W. Adams. University of New Mexico Press, Albuquerque.
- Wiley, Gordon R.  
1973 Certain Aspects of the Late Classic to Postclassic Periods in the Belize Valley. In *The Classic Maya Collapse*, edited by T. Patrick Culbert, pp. 93-106. University of New Mexico Press, Albuquerque.
- Wiley, Gordon R., T. Patrick Culbert, and Richard E.W. Adams  
1967 Maya Lowland Ceramics: A Report from the 1965 Guatemala City Conference. *American Antiquity* 32(3):289-315.

---

## 13 **TERMINAL CLASSIC EVENTS: COLHA, BELIZE AND THE CENTRAL MAYA LOWLANDS**

*Fred Valdez, Jr. and Palma Buttlers*

---

*Terminal Classic events at the Maya site of Colha in northern Belize include the placement of a “skull pit” in the monumental center and an abandonment of the site following this deposit. The site of Colha is contextualized and the violent activity of the Terminal Classic occupation is presented. Implications of the skull pit and events across the Central Maya Lowlands are discussed for modeling one possible scenario of the Terminal Classic “collapse”.*

### **Introduction**

The “collapse” or “demise” of Classic Maya civilization has long been a subject of intense study and interest. We must begin by stating that the use of terms such as “collapse”, “demise”, or “fall” are in many ways inappropriate. These are utilized here not in any judgment of Maya civilization, but rather to denote the significant changes that exist between the expressed Classic Period manifestations and the Postclassic Maya societies. The use of any of these terms is intended to emphasize the end of a certain tradition, way of life, and perhaps social-political structure.

The reasons or elements often discussed when examining the Classic Period collapse include internal and external considerations; and these are then refined to natural, economic, or sociopolitical elements (cf. Adams 1973; Sabloff 1973; Webster 2002; Demarest, Rice, and Rice 2004). Some suggest that the Classic Maya demise resulted from overpopulation and the taxing of resources (Culbert 1973, 1977; Harrison 1977; Webster 2002). The role of external force or invasion is also considered for the collapse (Sabloff and Willey 1967; Adams 1973; Webster 2002), as is the possibility of an environmental crisis (Sanders 1962, 1963; Gunn and Adams 1988; Gill 2000). Disease has also been seen as a prime component in the Maya decline (Saul 1973).

However, it seems most likely that the demise of Classic Maya civilization resulted from a combination of these factors (Sabloff 1973; Culbert 1977; Valdez 1987, 1989). With the premise that varying elements may have been at work in the Classic Maya demise, it remains critical to understand (or at least expect) that the result would have been a decline in the different geographic areas occurring at varying rates and expressed archaeologically in multiple ways.

### **The Southern Lowlands**

It is important to briefly review relevant data of the Terminal Classic Period in the southern lowland region of the Maya area (Figure 1). The Pasion, Peten, and Rio Bec areas will serve as general points of reference before discussing the northern Belize site of Colha (Hester et. al. 1980; Figure 2) where findings bear significantly upon reconstructions of the Classic Maya collapse.

Archaeological work at the sites of Altar de Sacrificios and Seibal provide the best information concerning the Classic Period collapse in the Pasion area. Both Adams (1973) and Sabloff (1973) used their ceramic analyses and other data (e.g., architecture and sculpture) for determining an invasion hypothesis of the Pasion sites by Mexicanized Maya from the Gulf Coast. An interesting observation from the Altar de



**Figure 1.** Map of the Maya Area.

Sacrificios excavations is an indication of a violent end to the Classic Period as evidenced by excavated remains of large amounts of fired adobe from burned wattle and daub architecture (Adams 1973: 143). Adams (*ibid.*) further states:

The palaces at Altar were perishable and were set on stone-faced platforms. Such platforms surrounded the court on three sides. Since underlying the burned adobe layer were Boca ceramics, a likely interpretation is that the elite-class residential architecture burned at the end of the phase. We cannot be sure whether the firing was deliberate. If we accept the interpretation given below of a military intrusion by people of Jimba culture, then the fire may well have been deliberate.

From the available data, it seems that the Pasion area saw the Classic Maya collapse through the efforts of a foreign group(s). Some evidence indicates that the collapse, at Altar de Sacrificios may have been a violent termination; this is an issue that will be revived in discussing the Colha data.

Terminal Classic events in the Peten region appear less dramatic than those noted

for the Pasion. It seems that the Peten sites may have declined (or collapsed) without external force. This certainly seems to be the case as understood for Tikal where a delicate balance between ecological, social, and political situations must have been maintained at all times. In his analysis of the Tikal data, Culbert (1973: 91-92) concludes:

“I must, then, take a stand as a strong proponent of an internal mechanism for the Maya collapse. Tikal succumbs too early and too rapidly for the trigger to have been external, and foreign incursions in parts of the Maya Lowlands seem to me to be the result rather than the cause of the Maya collapse.” The Peten, using Tikal as an example, most likely fell as a result of internal events. This interpretation will be echoed in the discussion of Colha’s Classic Period demise.



**Figure 2.** Map of Northern Belize.

The Rio Bec area also provides information from the Terminal Classic Period. Influences in architecture and ceramics are credited for both north and

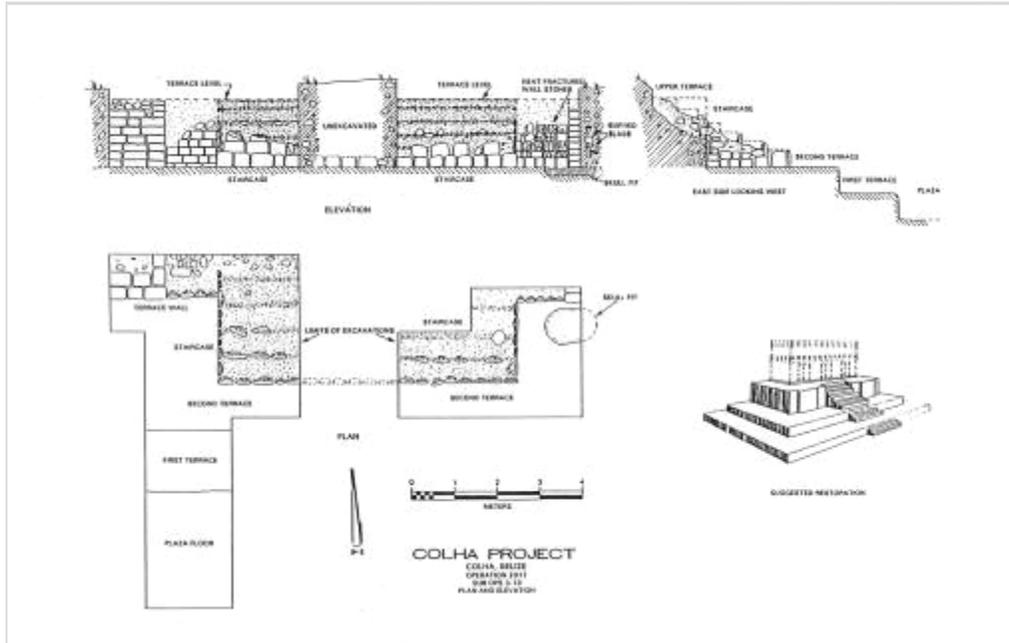


Figure 3. Colha Operation 2011 (from Eaton 1980).

south indicating that this region was actively trading in both directions. In his analysis of Terminal Classic lithics, Rovner (1974) made a curious observation that relates directly to finds at Altar de Sacrificios and Colha. Specifically, Rovner states:

“Over 80 percent of more than 600 lithic artifacts and debitage of this phase from the interior rooms of Structure IV at Becan show marked smoke blackening, heat discoloration, fire cracking, and spalls. It would appear that the inhabitants of these rooms were literally burned out of Structure IV.” Lithic evidence thus suggests that the Classic Maya met a violent end at Becan (ibid: 130).

Becan may be placed with Altar de Sacrificios in terms of witnessing at least one structure burned in the Terminal Classic. Both sites provide evidence for violent activity, although the source of this action remains uncertain, i.e., at Altar de Sacrificios the destruction and burning of (elite) residences may have resulted from invasion or from internal strife. The

Terminal Classic burning of Structure IV at Becan is also without direct evidence for external or internal instigation. At both sites, however, the burning is associated with an elite structure(s).

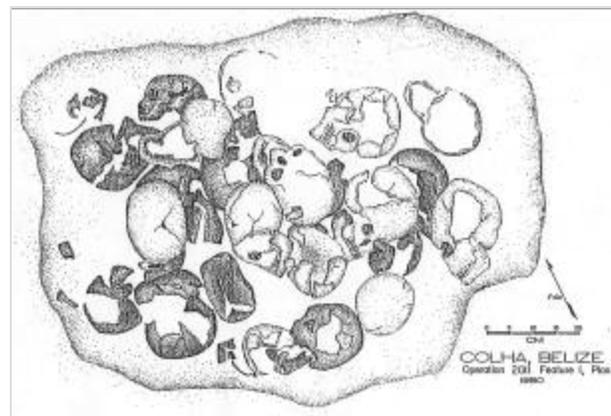


Figure 4. Skull Pit Illustration (after Steele et. al. 1980).

### Colha, Belize

The 1980 field season at Colha produced a remarkable find within the main plaza of the monumental center. A large linear mound on the south side of the plaza,

believed to have been an elite residential structure, was partially excavated. The excavation (Operation 2011) uncovered a skull pit, dating to the Terminal Classic, in a corner area between the central staircase and structure wall (Eaton 1980; Figure 3). The wall above the skull pit is constructed of limestone blocks that were shattered by fire. The destruction of the limestone wall probably resulted from the burning of the elite residential house; a perishable structure that may have fallen in front of the wall and over the skull pit.

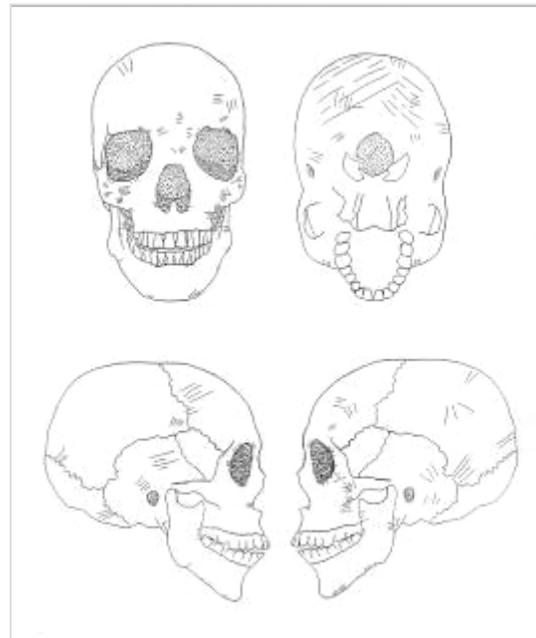
The skull pit (Figure 4) contained decapitated skulls of 30 individuals in two layers. The populations represented in the remains were ten children, six months to seven years of age, and 20 adults ranging in age from young adults to old adults (Massey 1986). The skull pit remains have been analyzed in detail for pathologies, cultural modifications, and post-mortem treatment (ibid.). A brief review of the analysis will be presented before discussing the skull pit and its position in understanding certain Terminal Classic events. All technical information provided below is derived from Massey's (ibid.) analysis.

Both children and adult teeth are known to have a number of pathologies including: calculus deposits, caries, ante mortem tooth loss, enamel hypoplasia, alveolar abscesses, and periodontal disease. The most common dental pathology observed for adults (19 of the 20) is calculus deposits followed by severe caries that affected 15 individuals. Eleven had lost teeth prior to death and seven of the adults showed markings of linear enamel hypoplasia. Dental caries are the most common problem noticed for the children's teeth. Other dental pathologies in the children included linear enamel hypoplasia and unusual notching of the incisors.

Bone pathologies in the adult population included infection of the bone,

joint deformation, cribra orbitalis, and an unusual roughness of the palate, while the children were found to be limited to cribra orbitalis (ibid.). Culture modifications to bone and teeth are present in the Colha skull pit sample. Both cranial shaping (at least eight individuals) and teeth filing (nine adults) are present.

Perhaps the most intriguing feature of the skeletal material is the presence of numerous cut marks. Twenty of the 30 skulls showed clear-cut marks; the other ten skulls are too damaged or covered with encrusted residue to be evaluated adequately. The average number of cut marks (per skull) in frontal view is 17. Figure 5 shows the composite of cut marks for each view. Most of the cuts are presumed to be the result of flaying. However, some cuts are indicative of efforts required in removing muscle or other soft tissue including the eyes and tongue. Deep cuts were also observed on two of the cervical vertebrae representing unsuccessful attempts at decapitation.



**Figure 5.** Distribution of Cut Marks (composite) on Skulls (after Massey 1986).

Charring of the bone is present on three skulls. One skull is badly burned while two are slightly charred. All three were excavated from the lower level of the skull pit, indicating that the burning occurred prior to interment. In sum, the Colha skull pit represents a population of 30 individuals including adult men, adult women, and young children. Children and teenagers between seven and eighteen years of age are not represented in the sample, therefore, negating the probability that the skull pit contained the remains of a nuclear family. While numerous dental and bone pathologies have been noted, the analysis does not indicate widespread serious disease or malnutrition (*ibid.*). However, the presence of these diseases (especially enamel hypoplasia) indicates at least periodic nutritional stress of significant degree.

The pit of decapitated skulls and the burned elite structure at Colha provide some of the strongest evidence for a violent end to the Lowland Classic Maya. The site of Colha is briefly (50 to 100 years), abandoned followed by the Postclassic re-occupation by a northern Maya group (Valdez 1987).

### **Other Considerations**

Environmental research by Gill (2000) has found a direct correlation between northern European climatic fluctuations and rainfall on the Yucatan Peninsula. Available data suggests that the Terminal Classic Period saw a serious drought that was quite devastating to the region (Hodell, Curtis, and Brenner 1995; Gill 2000). In a system where resources are taxed and population is high, a significant drought would add tremendous stress, encourage disease, and spark dissent.

Other studies (Valdez and Mock 1991) have found marginal areas to be occupied during the Terminal Classic. For

example, the Northern River Lagoon Site (NRL) is occupied primarily in the Terminal Classic Period. A primary purpose for its founding was probably related to salt making. The salt was then used in preparing fish and other marine resources for transport into the interior lowlands. With the demise of Classic Maya society, the NRL is abandoned.

### **Summary and Conclusions**

In this review of the Terminal Classic Period, selected sites have been studied for relevant findings concerning the Classic Maya collapse. The osteological data (Massey 1986), the climatic information (Gill 2000), the interpretation of the NRL site's function (Valdez and Mock 1991), all indicate hard times in the lowland area. The archaeological data of burned structures at Altar de Sacrificios, Becan, and Colha, in addition to the skull pit indicate a violent end to the Classic Period. It is interesting that the burned structure(s) at each site are elite-associated residence(s). Other sites not discussed here, but containing evidence for burned elite structures include Palenque, Tonina, Dos Pilas, and Copan.

The Colha skull pit seems to be representative of an elite group given the cultural modifications observed on the skulls and the location of the pit in front of the residential structure. If the skull pit does represent an elite group, one can postulate that the mass of the Colha population was probably in poorer physical condition. Disease among the commoner population must have been widespread and more serious as compared to the elite population who likely had better access to food, attendance, etc.

Although much of the provided data serve little more than as circumstantial evidence for understanding the Classic Maya demise, we will propose a scenario

that seems most consistent with the available information. First, there is a large Classic Period population that is pushing productivity to its limits. Second, a significant drought cut productivity through crop failures, etc. The drop in available water and food lead to malnutrition and disease; as may be evidenced in the Colha skull pit and as has been reported for other sites (Saul 1973). Third, the decline in food production forces “colonies” into marginal areas for procuring supplemental foodstuffs as seems to be the case for the NRL site. Fourth, if the skull pit represents an elite group, the general Maya population must have been plagued with disease and hunger. Such a situation would become intolerable and probably lead to an internal uprising.

Any social and political problems would simply be added to the implied dire physical conditions (cf. Hamblin and Pitcher 1980). This scenario also incorporates why violent Terminal Classic activity occurs at “elite”-residential structures, i.e., this is an act of literally removing an ineffectual authority.

At Tikal there is presently no evidence for this kind of violent end. However, the various conditions that seem to surround Tikal undoubtedly contributed to its demise as well. We are certainly in line with Culbert’s (1973) analysis that the Maya decline, at least at Tikal, were from internal mechanisms and varied from site to site. Where external forces appear, they seem to be an after-the-fact occurrence. These are Mexicanized Maya or some other opportunistic group that moves in on an already self-defeated Classic Lowland Maya.

A final note concerns those sites or areas that are not abandoned after the Terminal Classic. The areas that continue in occupation after the demise are in close proximity to fresh water. For example, the Peten Lakes sites in Guatemala, Lamanai in

Belize (Pendergast 1981), and Copan in Honduras (Webster and Gonlin 1988). It appears that the drought (Gill 2000) brought a significant blow to an already fragile society. Occupation at water safe sites most likely continued with a reduced population where the requirements of society were less demanding, at least for a while. The Postclassic Maya societies that followed these dramatic Terminal Classic events are clearly politically and perhaps socially structured in a different order. As Webster recently noted, “as it always does in the long run, the natural order prevailed, and the moral order changed”.

## References Cited

- Adams, R. E. W.  
1973 Maya Collapse: Transformation and Termination in the Ceramic Sequence at Altar de Sacrificios. In *The Classic Maya Collapse*, edited by T.P. Culbert, pp.133-163. University of New Mexico Press, Albuquerque.
- Culbert, T. P.  
1974 1973 The Maya Downfall at Tikal. In *The Classic Maya Collapse*, edited by T.P. Culbert, pp.63-93. University of New Mexico Press, Albuquerque.
- 1977 Maya Development and Collapse: An Economic Perspective. In *Social Process in Maya Prehistory*, edited by N. Hammond, pp.510-530. Academic Press. New York.
- Demarst, A. A., P. M. Rice, and D. S. Rice  
2004 *Terminal Classic in the Maya Lowlands*. University Press of Colorado. Boulder.
- Eaton, J. D.  
1980 Operation 2011: Investigations within the Main Plaza of the Monumental Center at Colha. In *The Colha Project Second Season, 1980 Interim Report*, edited by Thomas R. Hester, Jack D. Eaton, and Harry J. Shafer., pp. 145-161. Center for Archaeological Research. The University of Texas at San Antonio and Centro Studi e Ricerche Ligabue, Venezia.

- Gill, R. B.  
2002 *The Great Maya Droughts*. University of New Mexico Press. Albuquerque.
- Gunn, J. and R. E. W. Adams  
2003 Climatic Change, Culture, and Civilization in North America. *World Archaeology* 13(1): 87-100
- Hodell, D. A., J. H. Curtis, M. Brenner  
1995 Possible Role of Climate in the Collapse of Classic Maya Civilization. *Nature* 375:391-394.
- Hamblin, R. L. and B. L. Picher  
1980 The Classic Maya Collapse: Testing Class Conflict Hypotheses. *American Antiquity* 45(2): 246-267.
- Harrison, P. D.  
1977 The Rise of the Bajos and Fall of the Maya. In *Social Process in Maya Prehistory*, edited by N. Hammond. Academic Press, New York
- Hester, T.R., G. Ligabue, H.J. Shafer, J.D. Eaton, and R.E.W. Adams  
1980 The 1980 Season at Colha, Belize: An Overview. In *The Colha Project Second Season, 1980 Interim Report*, edited by T.R. Hester, J.D. Eaton, and H.J. Shafer, pp. 1-14. Center for Archaeological Research. The University of Texas at San Antonio and Centro Studi e Ricerche Ligabue, Venice.
- Massey, V. K.  
1986 *The Human Osteology of a Terminal Classic Maya Skull Cache at Colha, Belize*. Master's Thesis, Department of Anthropology, Texas A & M University.
- Pendergast, D. M.  
1981 Lamanai, Belize: Summary on Excavation Results, 1974 – 1980. *Journal of Field Archaeology* 8:29-53.
- Sabloff, J. A.  
1973 Continuity and Disruption during Terminal Late Classic, In *The Classic Maya Collapse*, edited by T.P. Culbert, pp.133-163. University of New Mexico Press, Albuquerque.
- Sabloff, J. A. and G. R. Willey  
1967 Collapse of Maya Civilization in the Southern Lowlands: A Consideration of History and Process. *Southwest Journal of Anthropology* 23(4):311-336.
- Sanders, W. T.  
1962 Cultural Ecology of the Maya Lowlands, Part I. *Estudios de Cultura Maya* 2:79-121.  
1963 Cultural Ecology of the Maya Lowlands, Part II. *Estudios de Cultura Maya* 3:203-241.
- Saul, F. P.  
1973 Disease in the Maya Area: The Pre-Columbian Evidence. In *The Classic Maya Collapse*, edited by T.P. Culbert, pp.301-324. University of New Mexico Press, Albuquerque.
- Valdez, F., Jr.  
1987 *The Prehistoric Ceramics of Colha, Northern Belize*. Ph.D. Dissertation, Department of Anthropology, Harvard University, Cambridge, Massachusetts.  
1988 La Decadencia de la Civilizacion Maya Classica: Evidencias de las Tierras Bajas Centrales. *Yaxkin* XII (2): 45-63.
- Valdez, F. Jr. and S. B. Mock  
1991 Additional Consideration For Prehistoric Salt-making in Belize. *American Antiquity* 56(3):520-525.
- Webster, D.  
2002 *The Fall of the Ancient Maya*. Thames and Hudson. New York.
- Webster, D. and N. Gonlin  
1987 Household Remains of the Humblest Maya. *Journal of Field Archaeology* 15(2):169-190.

---

## 14 **FACTORS OF STRESS AND PROCESSES LEADING TO THE END OF THE CLASSIC PERIOD AT BLUE CREEK**

*Thomas H. Guderjan and C. Colleen Hanratty*

---

*Archaeological investigations at Blue Creek, Belize has produced a rich database regarding the events and processes leading to its abandonment and offers special opportunities for the investigation of the processes leading to the end of the Classic Maya period. In this paper, we discuss the stressful dynamics of Late Classic period, including rapidly increasing the processes leading to the end of the Classic Maya period. In this paper, we discuss the stressful dynamics of Late Classic period, including rapidly increasing population, declining soil quality, and expansion of agricultural systems to their maximum. We then discuss the specific responses that are documented for the Terminal Classic period at Blue Creek and how the remnant populations of the Early Postclassic made use of the Classic period agricultural infrastructure.*

### **Introduction**

There has never been a lack of theory and speculation about the demise of complex Maya society at the end of the Classic period in the southern lowlands (i. e., Culbert 1973; Demarest, Rice, and Rice 2005). However, powered by the very popular volumes *Guns, Germs, and Steel* and *Collapse!* By Jared Diamond (1997, 2005), the overly simplistic environmental view has resurfaced with new strength. Partially in response to this, archaeologists are responding by assembling new and robust data regarding the end of the Maya Classic period, such as the 2006 Belize symposium.

Along with our many colleagues, we have been investigating the site of Blue Creek in northwestern Belize for 15 years. This has resulted in a large database relevant to understanding the nature of a Maya city (Guderjan 2007) as well as other issues. The work at Blue Creek has also produced a rich database regarding the events and processes leading to its abandonment and offers special opportunities for the investigation of the processes leading to the end of the Classic Maya period. In this paper, we discuss the stressful dynamics of Late Classic period, including rapidly increasing

population, declining soil quality, and expansion of agricultural systems to their maximum. We then discuss the specific responses that are documented for the Terminal Classic period at Blue Creek and how the remnant populations of the Early Postclassic made use of the Classic period agricultural infrastructure.

### **Blue Creek in the Early Classic.**

Before examining the Late and Terminal Classic, it is useful to review what is known of Blue Creek before then. In the Early Classic period, Blue Creek consisted of an inter-connected set of residential components that were separated by vast tracks of agricultural lands (Guderjan 2005, 2007; Guderjan, Baker and Lichtenstein 2003). Each of these residential components had their own internal structures of power, legitimacy and authority that seem to have consisted of multi-generational lineages (Guderjan 2007; Guderjan, Diel, Giacometti, and Andrews in press; Guderjan and Hanratty 2006). These lineages interacted on social, economic and political levels with each other and the royal lineage that resided in the site's central precinct. Their power was apparently derived from control over critical resources. In the case of Blue Creek,

these resources were agricultural lands that covered at least 50% of the landscape (Figure 1). In each of their residential complexes there were also central places, shrines, or terminus groups (Audet and Awe 2004; Cheetham 2004; Giacometti 2002). However, there were other residential components and multi-generational lineages that never achieved high status in the community because they did not control the agricultural lands adjacent to their homes. They were, in some way, in the employ of the land-holding elite.

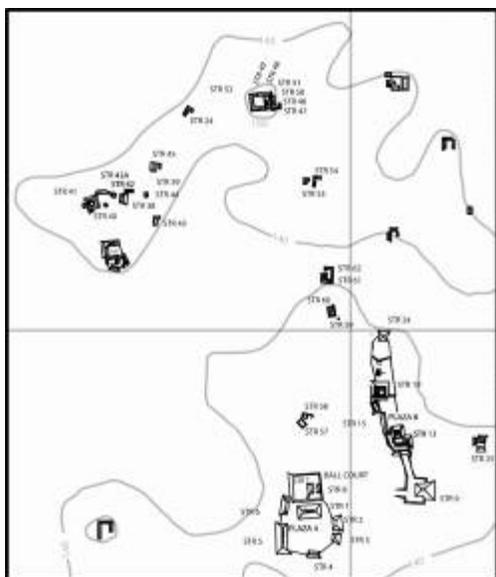


Figure 1. Map of central 20 square kilometers of Blue Creek

The central precinct sits atop the 100 meter tall, north-south running Bravo Escarpment. Above and west of the escarpment is a hill and bajo upland zone. Residences are found on the tops and flanks of these hills and the small bajos between them exhibit virtually no residential activity as they were used for agriculture. Below and east of the escarpment are large areas that were used for intensive agriculture with water managed by a large system of ditches covering many square kilometers?

Augmenting the presence of these high quality agricultural lands was Blue

Creek's setting at the headwaters of the Río Hondo (Barrett and Guderjan 2006). While the Río Hondo today forms the border between Belize and Mexico, in the past it was a conduit rather than a border. The Río Hondo is the northernmost river draining into the Caribbean Sea and provided canoe access from the coastal trade routes to the interior of the Petén region. For Blue Creek, the Río Hondo provided access to distant markets and a route to export its considerable agricultural produce.

As a consequence, Blue Creek became a wealthy city. Large quantities of imported artifacts such as jade are found throughout Blue Creek - from the most humble of perishable structures at the base of the escarpment to the most sacred structures within the site core (Guderjan 1998, 2005, 2007). In addition to prestige items, approximately 40% of the utilitarian lithics were also imported - most likely from Colha - despite the local availability of resources (Barrett 2004, 2006). From the Guatemala highlands, Blue Creek also imported large quantities of obsidian (Haines 2000).

Material goods were not the only items to make their way down river - innovative forms of architecture and ideologies based upon divine kingship found their way from the banks of the Rio Hondo to the rulers of Blue Creek. The rulers of Blue Creek were legitimized by the presence of innovative and symbolically charged forms of architecture. The plan of the central precinct itself is an expression of a regional order- several sites with similar plans exist along the Bravo Escarpment including Dos Hombres (Houk 1996), Quam Hill (Guderjan 1991), Punta de Cacao (Robichaux 2002), and San Jose (Thompson 1939).

Also, components of the central precinct incorporated concepts of ideology and power. Plaza A was surrounded by ritual

and multifunctional structures on three sides - leaving an open view of the agricultural fields and settlements a hundred meters lower to the east. This plaza is dominated by Structure 1, the earliest documented columnated superstructure in the Maya lowlands (Driver 2002, Guderjan 2004; 2007). On the opposite side of the plaza, Structure 4 incorporated an *axis mundi*, tethering the underworld to the cosmos (Guderjan 2004, 2005, 2007). Immediately north of Plaza A was a large platform on which an Early Classic ballcourt – one of the earliest in northwestern Belize (Guderjan 2004, 2007).

Plaza B is dominated by the royal palace and is flanked to the north and south by temple pyramids. The most notable is Structure 9, a typical Petén style temple with a single room superstructure positioned atop a steeply inclined substructure with a central staircase and stair-side outsets. The facade of Structure 9's outset near its summit was adorned with a five paneled, medium relief stucco frieze depicting a set of *ahaw* images. (Grube, Guderjan, Haines 1995).

The end of the Early Classic was marked by a major caching event in which nearly 1000 jade artifacts were buried in the *axis mundi* shaft of Structure 4 (Guderjan 1998, 2004, 2007) and the razing of the columned superstructure of Structure 1 to accommodate a royal tomb (Driver 2002; Guderjan 2004, 2007). These may be coincidental with other transformations or they may mark the end of power for the ruling lineage. Regardless which is the case, the presence of this suite of architectural, ritual and burial elements reinforce the idea that Blue Creek was an autonomous city with its own local ruling lineage. Further, Blue Creek was participating in the forefront of regional ideology while still conforming to regional patterning of major centers of power. Blue Creek's wealth was further expressed by its access to large quantities of

exotic goods such as jade. In short, Blue Creek was a small, wealthy city whose underlying economic base was its agricultural productivity and its relationship to the larger system of inter-polity trade.

### **The Late Classic**

Blue Creek's fortunes changed significantly during the sixth century with the fall of Tikal and the subsequent restructuring of trade networks. Jade and other imports ceased to flow into the community. There was also a sharp decline in imported lithic materials during the Late Classic. Colha chert for example, accounted for 40% of the utilitarian lithics during the Early Classic, but only 20% during the Late Classic (Barrett 2006). Similar trends are reflected in the amount of basalt, granite, obsidian, and marine shell imported into Blue Creek during this time period.

The Late Classic political reorganization is also reflected in the construction activities within the site core. For instance, during the early part of the Late Classic, Structures 2 and 3 were constructed in the form of a pseudo-E-Group that enclosed the east side of Plaza A (Guderjan 2006). Also, several buildings were re-oriented and buried under new, flat-topped structures more in similar to those seen in the northern coastal plain of Belize (Guderjan 2007).

Nonetheless, Blue Creek remained an active and vibrant community during the Late Classic as construction and modification of residences for the elite members of the community grew at an unparalleled rate in both the central precinct and other elite residential zones (Guderjan, Lichtenstein and Hanratty 2003; Guderjan and Hanratty 2006; Hanratty 2002).

Kín Tan is a large residential complex consisting of 9 elite residences (Structures 37, 41, 42, 43, 45, 46, 81, 82, and 83 complexes) on the tops of prominent hills. During the Early Classic, there was

only modest construction but most complexes were ritually charged. For instance, several ancestral shrines have been identified. One, Structure 34, included an important tomb from which a royal jewel in the form of a jade acrobat pendant was recovered (Guderjan and Hanratty 2006). This individual was the founder of a lineage that would reside around his tomb for 600 years. As time went on, they built larger and larger residences and left evidence of increasing wealth and authority. Like the residents of Rosita, their initial authority was probably based upon control of the critical resource, agricultural lands that surrounded their residences (Guderjan, Lichtenstein and Hanratty 2003; Hanratty 2002).

### Relevant Processes during the Late Classic Period

Several major processes can be documented during the Late Classic and in each case; the situation at Blue Creek is a microcosm of larger regional processes. The first three are all in the realm of cultural ecology or man-land relationships, or more specifically the interactions between the residents of Blue Creek and their environment. However, we are not building an argument of environmental causation for the Maya collapse. The environmental factors must be contrasted with those of human agency. There were also clearly factors beyond the scope of environmental determinism at play.

The first process of interest is the significant increase in population during that Late Classic. This has been broadly documented and discussed for the southern lowlands but is still difficult to quantify. In some studies, this has probably been exaggerated due to methodological issues with relevant ceramic analyses. Specifically, ceramic attributes of the Late Preclassic and Early Classic periods have been mistakenly

believed to cease at the end of the Late Preclassic. Since the temporal aspect of population studies has been based upon ceramic chronologies, this has the effect of overestimating the Late Preclassic population sizes while underestimating the size of Early Classic populations. This methodological fault lends false credence to a population decline during the “hiatus” and gives the appearance that Late Classic populations were increasing at an unrealistic rate. Nonetheless, Late Classic populations did increase considerably in size over the Early Classic scale.

At Blue Creek, already established residential areas such as Kin Tan grew to their maximum size. In all cases these were located in proximity to high quality agricultural lands and had clearly defined internal hierarchies with shrines and other central places within each residential component. However, in the Late Classic, new residential components such as U Xulil Beh (Figures 1 & 2) were founded in marginal agricultural settings.

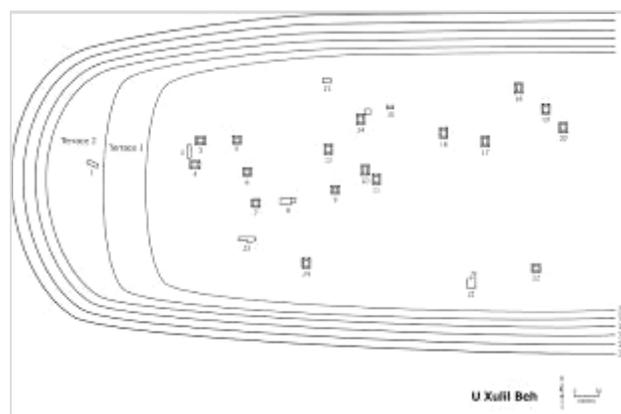


Figure 2. Map of U Xulil Beh

U Xulil Beh consisted of at least 20 residences located on a flat ridge surrounded on three sides by deeply down cut drainages. There was no central place, shrine, or residential structure that was more prominent than the others. Test excavations showed either only Late Classic or more

ambiguous “Classic” dates and no evidence of significant material wealth. U Xulil Beh then, was most likely a Late Classic expansion community. Further, U Xulil Beh did not have access or apparent control over the rich agricultural lands than underlay the power and authority of other residential areas. Instead, they built several broad terraces on the western margin of the group—almost certainly for agricultural purposes. These were likely communally held and could not have produced a significant surplus of products to go into the larger market economy.



**Figure 3.** Structure 50 deposit

During the Late Classic period there was also maximization of intensive agriculture. It is easy to monitor the scale of the large ditched agricultural fields that had probably already been in place for several hundred years (Dunning, Beach, and Luzzadder-Beach 2007). However, it is possible, if not likely, that they were expanded laterally in the Late Classic to their maximum extent. Jeff Baker’s early excavations of these ditches may have located a setting where significant fill had been carried in to fill low-lying areas. This then may have been ditched to connect to the extant system and to control soil moisture (Baker 2001, 2002).

Further, growing platforms were built at the base of the escarpment near the ditched fields to expand the amount of productive land (Baker 2001, 2002;

Lichtenstein 2000). While these are relatively small, only 48 square meters in one case, they represent a significant amount of construction effort and energetic and yielded only modest increased production. We can safely assume that they would not have been built if the highly productive soils immediately adjacent to them were not already under cultivation.

West and above the escarpment, the bajos separating residential components had also probably been cultivated for hundreds of years. In the Late Classic, a situation similar to the construction of growing platforms adjacent to the ditched fields can be seen. Terracing and cross-drainage features were built with considerable labor to expand the amount of arable land by only very small amounts. It could be argued that these expansions were necessary to feed an expanding population. However, the amount of agricultural land within Blue Creek - at least 40% of the area- was already more than adequate to grow food. One factor in the need for expansion was the likelihood that significant productivity was being lost to soil erosion and the declining quality of soils. Another factor was most likely the desire to maximize production for commercial purposes.

Mitigating the impact of this expansion of agricultural lands was the third process of significant soil erosion. At Blue Creek we see rapid erosion as a consequence of every new clearing. Further, rapid prehistoric alluvial events have been documented at the base of the Bravo Escarpment dating to approximately A. D. 1000 (Dunning, Beach, and Luzzadder-Beach 2007). Such events were certainly the result of equally rapid erosional events at higher elevations. Binford, Rice and their colleagues have documented rapid hillside erosion into the Petén lakes at the end of the Classic period that not only removed the topsoil but subsoils as well (Binford, et al,

1987). So, despite the maximization of agricultural lands, it is very likely that the end of the Classic was also marked by declining agricultural productivity.



**Figure 4.** Photo of Structure RS-21, Terminal Classic Yucatecan shrine

In general, then, we see evidence of increasing population coupled with increasing demands being placed upon the agricultural production systems that clearly point to increasing stress during this time. However, before our argument is misconstrued as an environmental deterministic approach, we must point out that other processes were also ongoing. There may have been a decline in the power of central authority at Blue Creek. More construction occurred in the elite residences outside of the central precinct than within it during the Late Classic. A small Early Classic plaza was converted to residential use. The ballcourt may have been terminated and in disuse. The graceful columned superstructure of Structure 1 was razed and a last royal tomb built. Elsewhere, one of us has argued that these events were the consequence of a political takeover of Blue Creek by another polity (Guderjan 1998). While this is far from certain, it is clear that significant restructuring occurred at the end of the Early Classic. Our point here is that we view the responses of human agencies to environmental challenges as being

differential and important to our understanding of the effects of these challenges. Further, we do not fully understand the structure of decision making, response and organization of the Late Classic.

### **The Abandonment of Blue Creek.**

At Blue Creek, we have been fortunate in that several “terminal” ceramic deposits have been found that date the final actions in several locations. As a result, we are now being able to track the progressive sequence of abandonment of the site. This is a sequence marked by the breakdown of old power and authority structures, rapid depopulation and re-organization of the surviving people.

The first locations to be abandoned were the central precinct and nearly elite residences. Large quantities of ceramics, mostly *Achote Black*, were deposited in front of Structure 3 on Plaza A. This event has been variously interpreted as the result of a termination ritual (Guderjan 2004) or the redeposition of ceramics from a feasting event (Clayton, Driver and Kosakowsky 2005). However, the most important point is that the deposit is certainly was the final activity at that location.

At about the same time, large amounts of portable goods were deposited against the baselines of buildings at Kín Tan. These deposits were placed against the group’s most sacred ancestor shrines (Structures 34 and 37) in the Structure 37 Plazuela and we continue to interpret these deposits as the results of termination rituals. The artifact assemblage included more than 14,000 sherds, 428 pieces of lithic debitage and 203 Special Finds were recovered. Of the Special Finds, 36 % were chert biface fragments, 35% were obsidian blades, 8% were chert cores, and 7% were metate fragments. The remaining 32% consisted of items such as chert eccentrics, ceramic

appliqués, figurines, beads, stamps, and whistles; mano fragments, armatures, spindle whorls, hammerstones, projectile point knives, scrapers, and counterweights. These events are similar to the pattern of ritual residential termination noted at Yaxunah (Suhler and Freidel 1994), Blackman Eddy (Garber et al. 1998), Dos Hombres (Houk 1996), and Floral Park (Glassman et al. 1995). No further construction activities or evidence of occupation are found within the central precinct or Kín Tan –both were abandoned (Guderjan, Lichtenstein and Hanratty 2003).

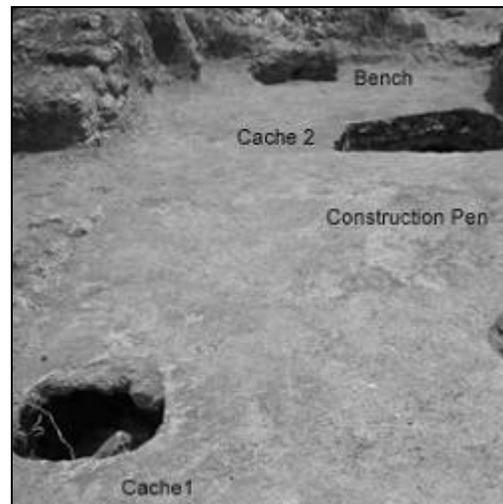


**Figure 5.** Perspective drawing of Rosita Structures R6 and R21.

We have recently excavated another such deposit (Figure 3), at the base of Structure 50. While this deposit has not yet been analyzed, its composition superficially compares more closely to those in the Structure 37 Plazuela than the one at Structure 3 and certainly dates to the same time period as both. Structure 50 is another central shrine at a residential complex in Kín Tan that is located midway between the Structure 37 Plazuela and the Central Precinct. Given the temporal similarities among the deposits at Structures 3, 34, 37 and 50) it appears that abandonment of the central precinct occurred rapidly and before the onset of the Terminal Classic period.

Some communities continued to exist, however. The Rosita community is approximately 3.5 kms northwest of the

central precinct. Rosita consists of at least twenty structures built from Late Preclassic through o the Classic periods (Preston 2007). In one group, a residential room was razed and replaced with a Yucatecan style shrine (Figures 4 and 5: also see Harrison-Buck and McAnany 2005). However, this was a makeshift construction that also involved stripping the masonry façade from the major building in the group (Preston 2007). At approximately the same time, a set of rooms was added to the summit of Structure 6, the other existing ritual building in the group. Two caches were *Daylight Orange: Darknight Variety* vessels were cached beneath the floor of this superstructure. (Figure 6). So, while population sizes were rapidly falling and central authority was crumbling at Blue Creek, the activity at Rosita indicates that residual populations were aligning themselves to external forces.

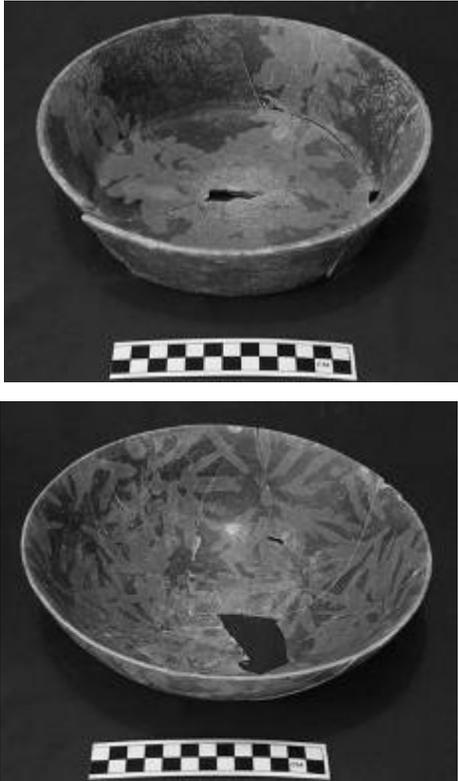


**Figure 6.** Terminal Classic cache locations on summit of Rosita Structure 5

### **The Early Postclassic.**

Only recently have we found any evidence of Postclassic occupation. At the Rempel Group (or Acab Muclil), previously known to have been constructed during the Early Classic, new, small platforms were constructed and numerous burials were

placed in and around the small monumental architecture (Padilla and Morgan 2006). Importantly, Aclab Muclil is located below the Bravo Escarpment, adjacent to the Río Bravo and was virtually surrounded by Classic period ditched agricultural fields. This pattern follows the known re-orientation of residual populations to defensive such as islands and other settings that could utilize remaining riverine trade networks. The Rempel Group or Acab Muclil was an outlying central place during the Early Classic period. However, it was the central place for the residual Early Postclassic population.



**Figure 7.** Daylight Orange, Darknight Variety Vessels from Structure RS-5 caches

These people may have exploited remnant orchards, perhaps of cacao or other tree crops that would have continued with minimal human intervention, in the nearby ditched field systems. We have yet made a

strong determination of what was being grown in these fields, but Postclassic Maya behavior gives us some indications. By the Early Postclassic, approximately A.D. 1000, the ditches themselves were largely infilled. Rather than being access routes for small canoes, the ditches would have become muddy impediments for access to the fields. We now know, though, that the fields were still used during the Early Postclassic and that at least one pole and thatch field house was built adjacent to an intersection of two ditches (Guderjan, Beach, Luzzader-Beach and Preston 2007). This strongly indicates that plants such as maize, that require human intervention for reproduction, were not being grown in the fields as there would be no purpose in such remote field houses. Instead, it is likely that some sort of tree crop was being grown. Such a crop could continue to produce economically useful products 100 or 150 years after the general abandonment of the area. Such a crop could be cacao which was known historically to have come in large quantity from the Río Hondo area through the city of Chetumal into larger trade networks during colonial times.

### Summary

Population size and agricultural activity at Blue Creek peaked during the Late Classic period. Further, agriculture almost certainly produced export goods that continued economically reinforce the authority of Blue Creek's elite. However, the use of marginal lands and the investment of great energy into minimal expansion of agricultural lands indicate stress on the system. This stress may have been caused by increasing population size, declining soil productivity or a desire to maximize production for commercial purposes. Certainly by the Terminal Classic, the structures of authority and power were rapidly disintegrating and residual

populations were looking elsewhere for validation of authority - and perhaps to support their very existence. By the Early Postclassic, the last residual populations retained earlier values and probably survived by harvesting agriculture goods that still grew due to the efforts of their ancestors. But, they were under such pressure that defensive structures were needed. At sometime around A D 100, they too were gone.

*Acknowledgements* We offer our many thanks and appreciation to our colleagues at Blue Creek and elsewhere who have contributed so much to this work and to the people of today's Blue Creek who have made our efforts possible. We also thank the staff of the Institute of Archaeology, especially Dr. John Morris, for organizing the Belize symposia and providing such a positive forum for interaction among archaeologists in Belize.

## References Cited

Audet, Claudia and Jaime Awe

- 2004 The Functions of Terminus Groups at Baking Pot. Paper presented at the annual meeting of the Society for American Archaeology.

Baker, Jeffrey

- 2001 Maya Wetlands: Ecology and Prehispanic Utilization of Wetlands in Northwestern Belize. Ph.D. dissertation, Department of Anthropology, University of Arizona, Tucson.

2003 *Maya Wetlands: Ecology and Prehispanic Utilization of Wetlands in Northwestern Belize*. Ph.D. Dissertation, Anthropology Department, University of Arizona. Tucson, Arizona.

Barrett, Jason W.

- 2004 Creating Hierarchy through Entitlements: Inequality in Lithic Resource Access among the ancient Maya of Blue Creek, Belize. Ph.D. dissertation,

Department of Anthropology, Texas A & M University, College Station.

2006

- Rethinking Long-Distance Exchange and the Economic Interdependence of Maya Sites during the Late Preclassic Period: The View from Northwestern Belize. *Archaeological investigations in the Eastern Maya lowlands*: Edited by John Morris, Sherlyne Jones, Jaime Awe, and Christopher Helmke. NICH.

Barrett, Jason W. and Thomas Guderjan

- 2006 "An Ancient Maya River Dock and Dam at Blue Creek, Belize." *Latin American Antiquity* 17:2: 227-239.

Cheetham, David

- 2004 The role of Terminus Groups in Lowland Maya Site Planning: An Example from Cahal Pech. *The Ancient Maya of the Belize Valley: Half a Century of Archaeological Research*, edited by James F. Garber. University Press of Florida, Gainesville.

Clayton, Sarah, David Driver, and Laura Kosakowsky

- 2005 "Rubbish or Ritual? Contextualizing a Terminal Classic Problematic Deposit at Blue Creek, Belize: A Response to "Public Architecture, Ritual and Temporal Dynamics at the Maya Center of Blue Creek" by Thomas Guderjan. *Ancient Mesoamerica* 16:1:119-131.

Culbert, T. Patrick

- 1973 *The Classic Maya Collapse*. University of New Mexico Press, Albuquerque.

Demarest, Arthur, Prudence Rice and Don Rice

- 2004 *The Terminal Classic in the Maya lowlands*. University Press of Colorado, Boulder.

Diamond, Jared

- 1997 *Guns, Germs and Steel*. W.W. Norton, New York.

- 2005 *Collapse: How Societies Choose to Fail or Succeed*. W. W. Norton; New York.

Driver, David

- 2002 An Early Classic Columned Temple at Blue Creek, Belize. *Latin American Antiquity* 13:63-85.

Garber, James F., W. David Driver, Lauren Sullivan and David M. Glassman

- 1998 "Bloody Bowls and Broken Pots: The Life, Death and Rebirth of a Maya House." in *The Sowing and the Dawning: Dedication and Termination Ritual Events in the Archaeology and Ethnology of Mesoamerica*, edited by Shirley Mock, pages 125-134. University of New Mexico Press, Albuquerque.

Giacometti, Antoine

- 2002 The Role of Plaza Complexes in Hinterland Settlements at the Maya Site of Blue Creek, Belize. M.A. Thesis, Institute of Archaeology, University College London.

Grube, Nikolai, Thomas Guderjan, and Helen R. Haines

- 1995 "Late Classic Architecture and Iconography at the Blue Creek Ruin, Belize." *Mexicon* 17:3:51-57.

Guderjan, Thomas

- 1991 *Maya Settlement in Northwestern Belize: The 1988 and 1990 Seasons of the Rio Bravo Archaeological Project*. Labyrinthos, Culver City, CA.

- 1998 "The Blue Creek Jade Cache: Early Classic Maya Ritual and Architecture." *The Sowing and the Dawning: Dedication and Termination Ritual Events in the Archaeology and Ethnology of Mesoamerica*, pages 101-112. Edited by Shirley Mock. University of New Mexico Press, Albuquerque.

- 2004 "Public Architecture, Ritual and Temporal Dynamics at the Maya Center of Blue Creek." *Ancient Mesoamerica* 15:2:1-17.

- 2005 "The Early Classic at Blue Creek" In *Research Reports in Belizean Archaeology*, Vol III pages 131- 142.

- 2006 "E-Groups, Pseudo E-Groups, and the Development of the Classic Maya Identity in the Eastern Petén." *Ancient Mesoamerica* 17: 1: 1-8.

- 2007 The Nature of an Ancient Maya City: Resources, Interaction and Power at Blue

Creek, Belize. University of Alabama Press, Tuscaloosa.

Guderjan, Thomas, Jeffery Baker, and Robert J. Lichtenstein

- 2003 Environmental and Cultural Diversity at Blue Creek. *Heterarchy, Political Economy and the Ancient Maya*, pages 77-91. Edited by Vernon Scarborough, Fred Valdez, Jr. and Nicholas Dunning. University of New Mexico Press, Albuquerque.

Guderjan, Thomas H., Timothy Beach, Sheryl Luzzader-Beach, and Tim Preston

- 2007 Blue Creek Archaeological Project, Report of 206 Fieldwork. Report submitted to the National Institute of Culture and History, Belize, by Maya Research Program, Fort Worth, Texas.

Guderjan, Thomas H., Lori B. Diel, Antoine Giacometti, and Elizabeth Andrews

- In Press Maya Social Organization and the Implications of a non-elite burial at Blue Creek. *Ancient Mesoamerica*.

Guderjan, Thomas, Robert J. Lichtenstein and C. Colleen Hanratty

- 2003 Elite Residences at Blue Creek, Belize. *Maya Palaces and Elite Residences*, pages 13-45. Edited by J. J. Christie. University of Texas Press, Austin.

Guderjan, Thomas and C. Colleen Hanratty,

- 2006 A Thriving Non-Royal Lineage at Blue Creek: Evidence from a Sequence of Burials, Caches and Architecture. *Acta Mesoamerica* 19.

Haines, Helen R.

- 2000 *Intra-Site Obsidian Distribution and Consumption Patterns in Northern Belize and the North-Eastern Petén*. Unpublished Ph.D. Dissertation, Institute of Archaeology; University College, London.

Hanratty, C. Colleen

- 2002 Kín Tan; Excavations in the Western Group at Blue Creek. Paper presented at the annual meeting of the Society for American Archaeology, Denver, 2002.

Harrison-Buck, Eleanor and Patricia A. McNaney

- 2005 Terminal Classic circular shrines and Ceramic material in the Sibun Valley ,

Belize: Evidence of Northern Yucatec Influence in the Eastern Maya Lowlands. In *Research Reports in Belizean Archaeology, Vol III*.

Houk, Brett

1996 *The Archaeology of Site Planning: An Example from the Maya Site of Dos Hombres, Belize*. Ph.D. Dissertation, Department of Anthropology, University of Texas, Austin.

Preston, Tim

2007 Examining Power Heterarchies within an Ancient Maya Community. MA Thesis, Department of Anthropology, San Francisco State University.

Robichaux, Hubert R., et al

2002 *Preliminary report of the 2001 Season of the Punta de Cacao project*. The University of the Incarnate Word, San Antonio, Texas.

---

## 15 **THE MIDDLE FORMATIVE IDEOLOGICAL FOUNDATIONS OF KINGSHIP: THE CASE FROM CAHAL PECH, BELIZE**

*James F. Garber, Jennifer L. Cochran, and Jaime J. Awe*

---

*Excavations at Cahal Pech revealed Middle Formative ritual deposits whose symbolic meaning figure prominently in the ideological foundations of power and authority. One of these is a human skull placed in a bowl adjacent to which is a headless body. The other is a cosmogram-world creation cache, symbolizing a resurrected ancestor. The symbolic program of these taken as a set, mirror the iconographic depictions of the resurrected kings of the Classic Period and are elements of the Popol Vuh creation story. The Middle Formative deposits demonstrate the 2000-year history of symbolic power among the Lowland Maya.*

### **Introduction**

The 2005 field season marks the second year of excavations in Plaza B at Cahal Pech for the Texas State University Belize Valley Archaeological Project (BVAP). In the first field season (2004) a north-south trench was initiated in Plaza B (Garber et al. 2006). These excavations were continued in 2005. The focus of the work was to further document Early Formative and Middle Formative occupations at the site. Much of this work builds upon earlier research at Cahal Pech conducted by Awe (1992) and later by Healy and Awe (1995, 1996). These efforts produced substantial data on a previously unrecognized occupation phase for the Maya Lowlands initiated at the end of the Terminal Formative called the Cunil Phase (1100-900 BC) (see Awe 1992; Garber et al. 2004 and Healy et al. 2004 for a detailed reporting of the Cunil phase and related Kanocha phase at Blackman Eddy). Additionally, the 2004 and 2005 excavations have provided detailed information on Middle Formative occupation and associated ritual deposits. Three of these deposits in particular demonstrate the symbolic foundations for power and authority that

form the basis of kingship in the Classic period.

### **Background**

The site of Cahal Pech is located on a hill overlooking the modern town of San Ignacio in the Cayo District and has been the subject of several investigations spanning over fifty years (Figures 1 and 2). The site was strategically placed on the western bank of the Macal River and covered an approximate area of 10 kilometers during the Classic period (Awe 1992; Healy et al. 2004). The site core consists of 34 large structures including, massive temple mounds, range structures, two ballcourts, and formal courtyards and plazas containing several stelae and altars (Figure 2). A number of settlement clusters surrounding the site also contained monumental architecture.

Investigations at Cahal Pech in the 2004 and 2005 field seasons revealed a series of Middle Formative structures with associated features and ritual deposits which directly overlaid the initial Terminal Early Formative occupation located on bedrock (Garber et al. 2006). The trench excavations of these early deposits revealed three low platforms and associated ritual deposits and



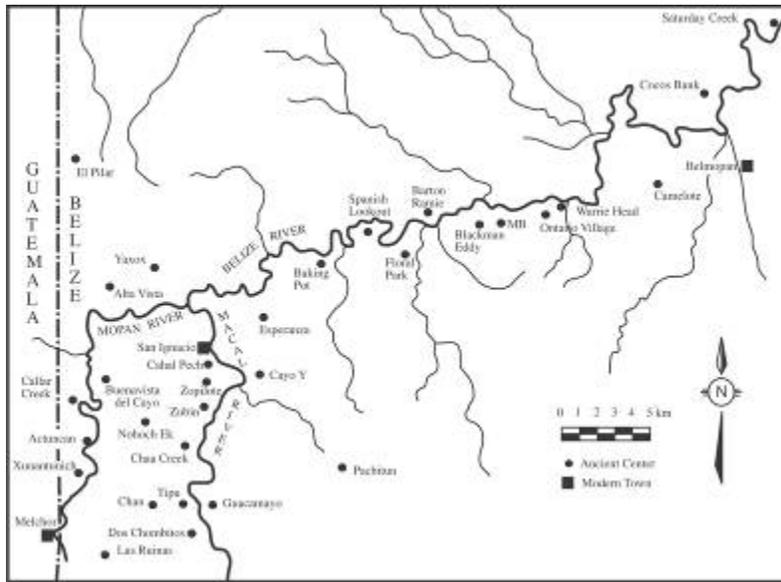


Figure 1. Map of sites in the Belize River Valley.

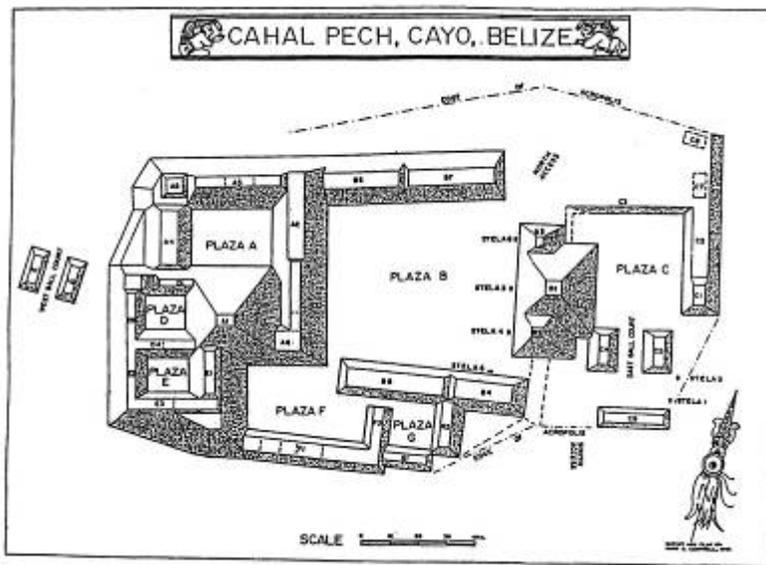


Figure 2. Cahal Pech site core (from Awe 1992).

caches. Evidence of exotic items and a marine shell workshop was also encountered and has implications for emerging social stratification at this early date (Cochran 2005).

Test units had been excavated in several of the Cahal Pech plazas. It was clear from these plaza tests that Plaza B was the original summit of the hill and that early materials in the other plazas were present,

but deeply buried by plaza construction in an effort to enlarge the usable summit of the hill. Thus, Plaza B was the logical place to efficiently expose additional Terminal Early Formative and Middle Formative remains. As noted above, the test units in Plaza B had demonstrated extensive use of the hilltop during Terminal Early Formative and Middle Formative times but were of insufficient size to fully assess architectural

features, activity areas, ritual activity, and community organization. The Plaza B test-pitting program yielded tantalizing information on habitation and utilization of this area (Cheetham 1996). In an effort to help clarify this utilization and get a more comprehensive view of the architectural variability, a north-south trench across Plaza B was initiated in 2004 and continued in 2005.

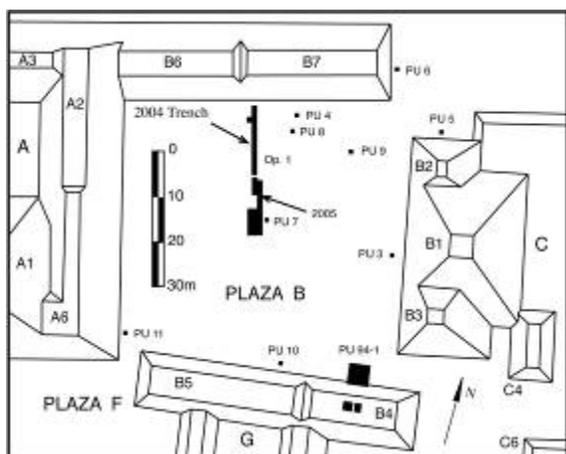


Figure 3. Plaza B at Cahal Pech (after Healy et al. 2004).

### Excavations

All BVAP Plaza B trench excavations are designated as Operation 1 (Op. 1). The main 2004 trench was 16 meters long and 1 meter wide. The 2005 excavations continued this trench an additional 12 meters (Figure 3). Extensions were added to the west of the main trench to investigate encountered features. The trench excavations revealed the presence of Classic and Late Preclassic plaza floors, Late Preclassic architecture and caches, a variety of Middle Formative caches, building platforms, ritual deposits, and a Terminal Early Formative platform. These are reported in detail elsewhere (Garber et al. 2006). Of particular interest here is Middle Formative Platform B and three of its associated ritual deposits. Platform B was initially constructed in the early facet Kanluk Phase (900-700 BC). Platform B

rests directly on bedrock and cuts through an earlier building, Platform C, constructed at the end of the Cunil Phase (1100-900 BC). Platform B is a low broad building in the northwest portion of Plaza B. Its edge consisted of roughly trimmed coursed limestone blocks. Its surface is composed of tamped marl and its core composed of marl and rubble fill. Three deposits associated with Platform B are the focus of this chapter and viewed as a ritual set, form the basis for symbolic power and authority that eventually takes the form of kingship in the Classic Period.



Figure 4. Jade artifacts – top row of beads are from Cache 7 (skull in bowl).

### Cache 7

This cache was located in the southwest portion of Op.1g within the north-south trench and consisted of a bowl, a poorly preserved human skull facing northwest, and six jadeite beads (Figure 4). The vessel was placed beneath a large capstone found at what appears to be the southeast corner of Platform B (Figures 5 and 6). The vessel is a Middle Preclassic, Kanluk phase, Sampoperro Red: Variety Unspecified bowl. It has a waxy red Chicanel-style slip that almost appears streaky (like Society Hall) on a few of the sherds. The vessel is slipped on the interior

and exterior but not on the slightly concave base. The slip fits the description for Gifford's Sampoppero Red: Sampoppero Variety (Gifford 1976:77). Paste is not typical for Sierra Red and is finer, buff in color, more "Cunil" in style, and oxidized throughout. Angular volcanic glass fragments were noted in the petrographic analysis. While Gifford associates this type with late facet Jenney Creek this paste *may* represent an earlier version. Gifford (1976:78) does describe an early version of Sampoppero Red: Rough-exterior Variety, which he associates with early facet Jenney Creek. BVAP project ceramicist Lauren Sullivan provided the above ceramic assessment.

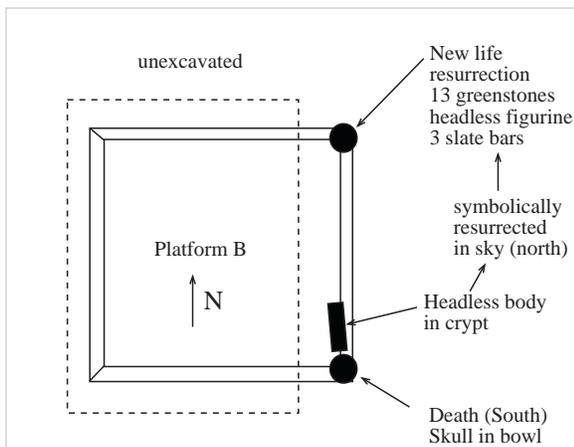


Figure 5. Ritual resurrection of Burial 1

### Burial 1

A crypt burial was encountered in the southeast corner of Platform B (Middle Formative) (Figure 6). Platform B and this crypt appear to be intrusive into earlier Platform C (Cunil). The crypt and headless body was directly on bedrock. The preservation was poor and highly fragmented, however it is clear that the headless body was fully articulated at the time of burial. Five shell tinklers and a complete obsidian blade were found immediately adjacent to the right humerus and appear to have been components of a band worn on the upper arm (Figure 7).

Interestingly, stone celts as upper arm ornaments are a common feature of Chac Mool figures of the Terminal and Post Classic.

Immediately to the south, the bowl and skull noted above was found in a separate crypt (Cache 7). It is assumed that this skull belongs to Burial 1, but it should be noted that a row of crypt stones separated the body from the skull (Figure 6).

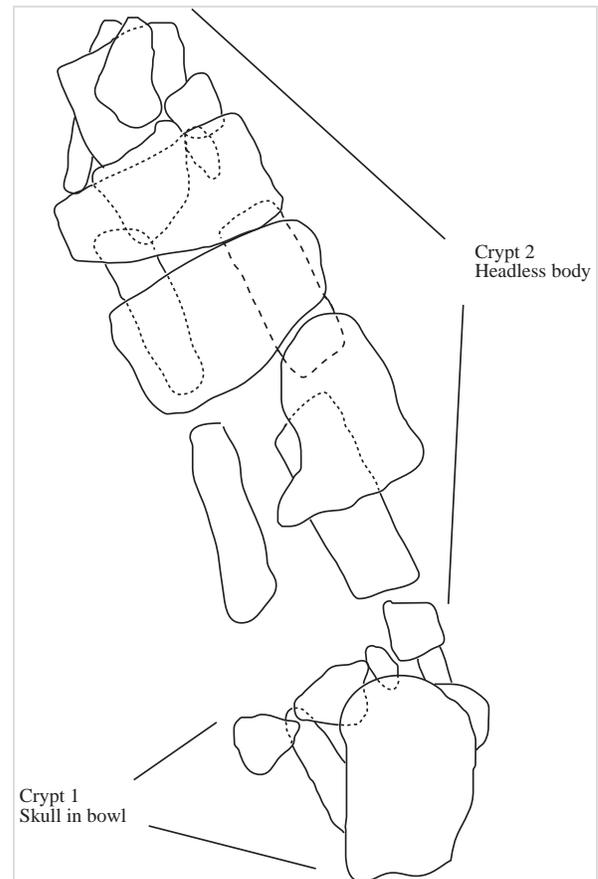


Figure 6. Plan view of Crypt 1 (Cache 7) and Crypt 2 (Burial 1).

We believe that this burial and cache are ritually related to Cache 2 found in 2004 (Garber et al. 2006). Cache 2 consists of a cluster of 13 greenstones immediately above a headless ceramic figurine. Three slate bars were found below the figurine. The 13 greenstones represent the upper world, the 3 slate bars the three-stone-place of creation, and the headless figurine a resurrected

ancestor. This cache was found in the northeast corner of Platform B (see Figure 5).



Figure 7. Shell tinklers from Burial 1.

### Discussion and conclusions

The head-in-bowl motif is pervasive in Classic Period Maya art and iconography. It is shown on numerous Classic Period polychrome vases. The head is shown in fleshy form, skeletal form, and at times a combination of fleshy and skeletal (Reentz-Budet 1994:14-15). This motif however, is not Maya in origin, and has been traced back to Olmec times (Reilly 1994). A Preclassic Maya example on a mask façade comes from Blackman Eddy (Figure 8). On this example, a head is shown emerging from an outwardly flaring bowl shown in profile, adorned with three large dots. Recent hieroglyphic and iconographic decipherment have underscored the importance of the three-dot symbolism in Maya ideology. When functioning as a symbolic motif, the three dots represent the three stone places, which the gods established as the cosmic center at the beginning of the present creation (Freidel et al. 1993:64-71). Additionally, the head and bowl motif is found in many regions of Mesoamerica (Figure 9).

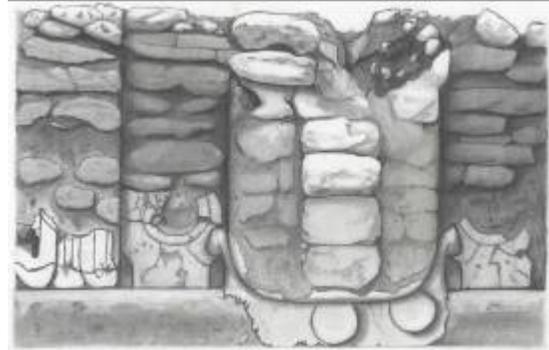


Figure 8. Upper east mask on Structure B1-2nd at Blackman Eddy (drawing by Jason Wiersema).

In the Popol Vuh creation story, the hero twins obtain the severed head of their father and resurrect him as the maize god. At the three-stone place of creation the maize god raises the world tree and creates the world. This severed head within a bowl and its resurrection is a common Classic Period Maya iconographic theme.

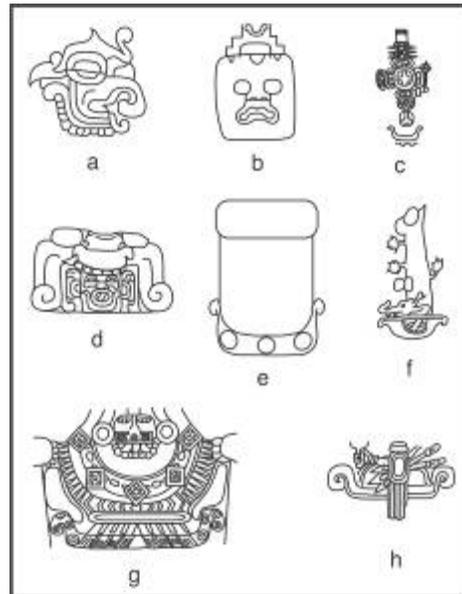


Figure 9. Formative and Classic examples of bowls with supernatural entities: (a) headdress detail from La Mojarra (redrawn from Winfield Capitaine 1988:figure 1); (b) Tzutzuculi (redrawn from McDonnald 1983:figure 12); (c) Humboldt Celt (redrawn from Reilly 1994:figure 3.52); (d) Uaxactun (redrawn from Freidel et al. 1993:figure 3:9); (e) Blackman Eddy facade mask (drawn by J. Wiersema); (f) Lowland Maya vessel (redrawn from Freidel et al. 1993:figure 1:5); (g) Teotihuacan (redrawn from Taube 1983:figure 3); (h) Teotihuacan

We believe that the individual in Burial 1 was decapitated (probably post-mortem), its head placed in a bowl in the south (Cache 7) and symbolically resurrected as an ancestor in the sky (north) with the deposition of Cache 2 (Figure 5). Placing a ruler or ancestor in the sky accomplishes the same symbolic objective as the placement of ruler portrait stelae in the Twin Pyramid Complexes at Tikal (Ashmore 1991; Garber et al. 2004).

The ritual program of these Middle Formative deposits at Cahal Pech demonstrates the symbolic program of death and resurrection. These became critical components of the symbol system of Classic Period kingship and demonstrate the enduring ritual and symbolic system of the Maya.

## References Cited

- Ashmore, Wendy  
1991 "Site-Planning Principles and Concepts of Directionality among the Ancient Maya." *American Antiquity* 2:199-226.
- Awe, Jaime J.  
1992 Dawn in the Land between the Rivers: Formative Occupation at Cahal Pech, Belize and its Implications for Preclassic Development in the Maya Lowlands. PhD dissertation, Institute of Archaeology, University of London.
- Cheetham, David. T.  
1996 "Reconstruction of the Formative Period Site Core of Cahal Pech, Belize." In *Belize Valley Preclassic Maya Project: Report on the 1994 Field Season*, edited by P. F. Healy and J. J. Awe, 1-33. Occasional Papers in Anthropology no. 12. Trent University, Peterborough, Ontario.
- Cochran, Jennifer  
2005 "The Role of Marine Shell Production during the Early and Middle Preclassic at the Site of Blackman Eddy, Belize". Paper presented at the Annual Meeting of the Society for American Archaeology, Salt Lake, April 2005.
- Freidel, David A., Linda Schele, and Joy Parker  
1993 *Maya Cosmos: Three Thousand Years on the Shamans's Path*. William Morrow, New York.
- Garber, James F., M. Kathryn Brown, Jaime J. Awe, and Christopher J. Hartman  
2004 Middle Formative Prehistory of the Central Belize Valley: Examination of Architecture, Material Culture, and Sociopolitical Change at Blackman Eddy. In *The Ancient Maya of the Belize Valley: Half a Century of Archaeological Research*. Edited by James F. Garber, University Press of Florida, Gainesville.
- Garber, James F., Jennifer L. Cochran, and Jaime J. Awe  
2006 Excavations in Plaza B at Cahal Pech: the 2004 Field Season. In *Archaeological Investigations in the Eastern Maya Lowlands: Papers of the 2005 Belize Archaeology Symposium*, pp.31-40, edited by John Morris, Sherilyne Jones, Jaime Awe, and Christophe Helmke. Institute of Archaeology, Belize.
- Gifford, James. C.  
1976 *Prehistoric Pottery Analysis and the Ceramics of Barton Ramie in the Belize Valley*. Memoirs of the Peabody Museum of Archaeology and Ethnology, vol. 18. Harvard University, Cambridge.
- Healy, P. F. and J. J. Awe, editors  
1995 *Belize Valley Preclassic Maya Project: Report on the 1994 Field Season*. Occasional Papers in Anthropology no. 10. Trent University, Peterborough, Ontario.
- 1996 *Belize Valley Preclassic Maya Project: Report on the 1995 Field Season*. Occasional Papers in Anthropology no. 12. Trent University, Peterborough, Ontario.
- Healy, Paul F., David Cheetham, Terry G. Powis, and Jaime J. Awe  
2004 Cahal Pech: The Middle Formative Period. In *The Ancient Maya of the Belize Valley: Half a Century of Archaeological Research*. Edited by James F. Garber, University Press of Florida, Gainesville.

Reents-Budet, Dorie

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

Reilly, F. Kent III

1994 *Visions to Another World: Art, Shamanism, and Political Power in Middle Formative Mesoamerica*. Ph.D dissertation, University of Texas, Austin.

---

## 16 ***FROM HOUSE TO HOLY: FORMATIVE DEVELOPMENT OF CIVIC-CEREMONIAL ARCHITECTURE IN THE MAYA LOWLANDS***

Terry G. Powis and David Cheetham

---

*Investigations in the Belize Valley have yielded Middle and Late Formative period (ca. 950 B.C.–A.D. 100) civic-ceremonial architecture. During this period the focus of communal ritual life shifted from elite residences to modest temple platforms to temple-pyramids. We discuss this development in a social and political-religious framework. Of particular interest is the shift (ca. 800 BC) from elite houses to temple platforms—in some cases built directly above—a reverent treatment suggesting that the descendants of incipient Maya leaders enjoyed an increased and perhaps uninterrupted role in political and religious affairs. The Belize Valley data are compared and contrasted with other Lowland Maya areas and distant Mesoamerican regions.*

### **Introduction**

Temples are a constant feature of ancient Mesoamerican societies, yet their origins remain somewhat obscure. By this we do not mean “which society made them first,” although that *is also* a question worth investigating. Rather, we are puzzled by their location within ancient communities - why spot X as opposed to spot Y - which remains an enigma in many cases, as do the social, political and even practical factors which surely dictated such choices.

Without doubt, some of the earliest temple-building societies incorporated these structures into grand civic plans right from the outset. They were not haphazard additions; location was precise and predetermined. The sites of La Blanca (Love 2002) and La Venta (Drucker et al. 1959) are examples, with large earthen temples forming the very heart of the respective civic-ceremonial blueprints, in both cases most likely brought to fruition between 900-800 BC in un-calibrated radiocarbon years. As the practice of temple construction and temple worship quickly spread to other regions, these buildings were often incorporated unto the unfolding civic-ceremonial plan of pre-existing communities.

The central Maya Lowlands is one such region (Figure 1). Between about 1000-800 BC, permanent village life was established here; quite late compared to neighboring regions. These villagers made use of basic household objects common elsewhere in Mesoamerica - pottery, figurines, and so forth - but in styles indicating an indigenous spin on common themes. Immigration cannot, on the basis of the present material record, account for the origins of these earliest pre-Mamom or "Cunil horizon" villagers (Cheetham 2005). It was only at the end of this very formative stage of lowland Maya development that, along with the emergence of social ranking, modest temple buildings began to be constructed. Evidence is sketchy at present, but it appears that in some cases the focus of ritual life shifted from the households of emerging elites to modest temple platforms - on the same spot.

The observations we make here should be considered preliminary and, in some respects, speculative. Yet, there is an emerging pattern in the lowland Maya that is very intriguing and promises to tell us much about the foundation, nature, and development of the region's social and political structure. Figure 1 locates some of the sites we mention. While they are few

and far between, it is important to note that lowland Maya temples are large; early constructions within them are deeply buried, relatively small, and costly to get at. We suspect that such data will increase in the years to come, allowing the model we present here to be evaluated more thoroughly, perhaps even discarded.



Figure 1. Map of the Southern Maya Lowlands locating sites mentioned in text.

### Two Early Mesoamerican Cases

Ancient Mesoamerican societies did not, of course, lack specific ritual loci before the advent of temple-life in the early Middle Formative period. Such activities took place in open-air settings, in small special-purpose buildings, or in and around residences—and quite likely all of them. There is ample evidence to back this up, but we need not rehearse it here. It is instructive, however, to look at a few cases that contrast with the early lowland Maya.

One of the better-known pre-temple archaeological cultures thrived along the Pacific coast of Chiapas between 1600-1150 BC. Dubbed the Mokaya people by John Clark (1991, 1994), these folks built large sprawling communities with standing architecture. The region's largest site of the era, Paso de la Amada, boasted a ballcourt and numerous raised house platforms, including large chiefly residences central to the community's social, political, and ritual

life (Blake 1991; Blake et al. 2006; Clark 1994; Hill 1999; Lesure 1999; Lesure and Blake 2002). One building (Figure 2a) was rebuilt many times, creating an ever-larger earthen platform in the middle part of the site. But it was never a temple, and Paso de la Amada was abandoned by 1150 BC, well before temple-life spread across Mesoamerica.

What is instructive about Paso de la Amada is the focal point that the elite residences maintained in the emergence of complex society within the society. The chiefly aspirants that lived there used a host of social maneuvers - perhaps unwittingly - which resulted in inequality. The built environment and the labor coordination in making it was a key element in the shift away from egalitarianism (Clark 2004).

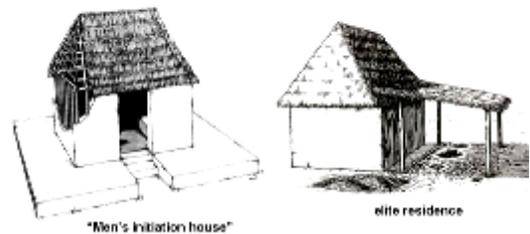
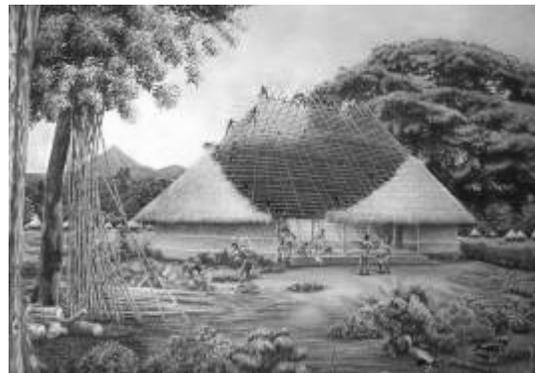


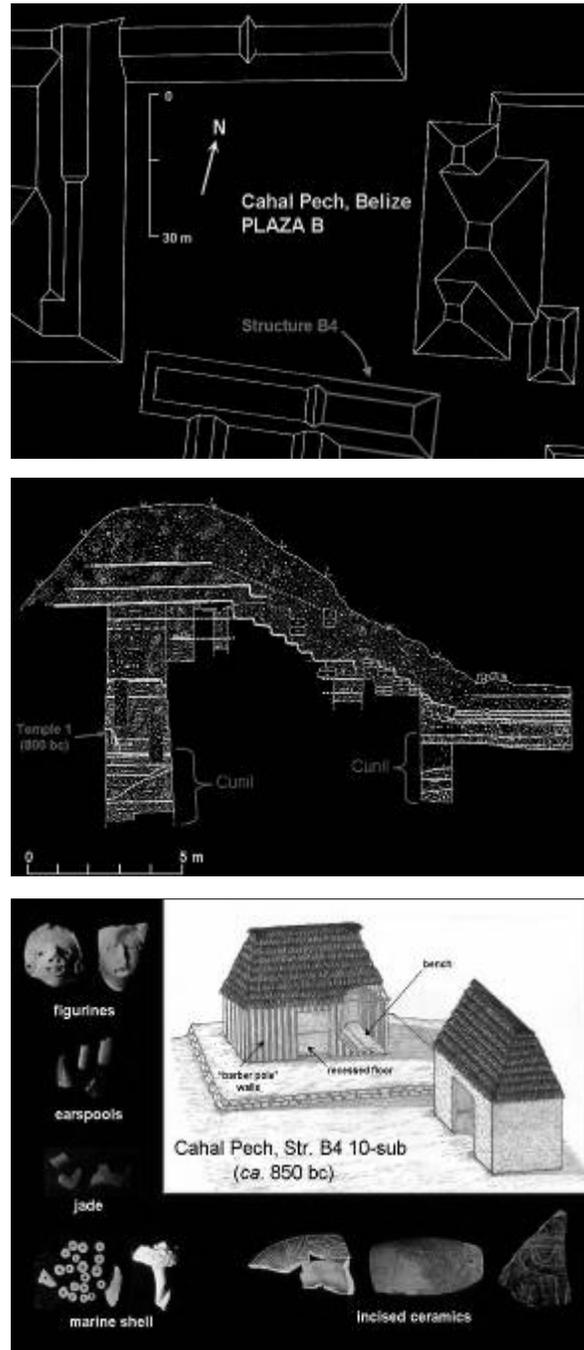
Figure 2. Artist's reconstruction of Early Formative period pre-temple Mesoamerican perishable superstructures: (a) Mound 6, a chiefly residence at Paso de la Amada, Chiapas (illustration by Ajax Moreno, courtesy of the New World Archaeological Foundation); (b) two San Jose phase buildings at San José Mogote, Oaxaca (after Flannery and Marcus 1996:Fig. 4.6, 2005:Fig. 18.2).

Another pre-temple archaeological culture worth mentioning is the Oaxaca Valley site of San Jose Mogote. Unlike Paso de la Amada, this community was not abandoned at the close of the Early Formative period, and thus the location and nature of early buildings is of particular interest in relation to what came after. Figure 2b shows reconstruction drawings of two early buildings from the site. Kent Flannery and Joyce Marcus (1976, 2005; Marcus and Flannery 1996) interpret the building on the left as an initiates or “Men’s House”; a special-purpose structure with more resource investment in terms of upright posts and plaster. It was *not* a residential building, as suggested by the lack of household debris within and around it. The building on the right is interpreted as an elite residence, its occupants enjoying access to goods and raw materials not accessible to lower ranking families within the society.

For our purposes, what is instructive about this case is that later San Jose Mogote temples - those post-dating 850 BC - were *not* built over any elite residential or special structures, at least not those documented thus far. There is no unbroken, in-situ sequence of residential-to-public architecture even though the peoples of this community fully participated in the temple life during the early Middle Formative period. As Joyce Marcus recently informed us (personal communication 2005), the peoples of San Jose Mogote rarely mixed sacred and secular contexts by converting a non-sacred context into a sacred context. This, we submit, was what was happening between about 850-800 BC in many lowland Maya communities.

### The Lowland Maya

One of the best cases for an elite residential-cum-public building in the lowland Maya area occurs at Cahal Pech, Belize. A roughly 2,000 year, uninterrupted



**Figure 3.** Cahal Pech, Belize: (a) The main plaza; (b) Structure B4 profile; (c) artifacts from Structure B4 excavations and artist’s reconstruction of Structure B4 at the end of the Cunil phase. (after Cheetham 1995:Fig. 1, 1996:Fig. 1, 1998:Fig. 3a)

sequence of public buildings was exposed in the southeast corner of the site's main plaza within Structure B4 (Figure 3a). The stratigraphic sequence of this building (Figure 3b) includes nine superimposed temples, the latest of which is Late Classic, the earliest of which is early Middle Formative - approximately 800 BC. Below this are a series of residential platforms dated to pre-Mamom Cunil times on the basis of artifactual content and associated radiocarbon dates (Awe 1994; Cheetham 1998; Healy et al. 2004; Powis et al. 2001).

There is little doubt that these are residential buildings. Unlike the Oaxaca initiates buildings noted above, the architectural fill, immediate patio area, and floors themselves are strewn with trash of an unmistakably domestic type. Yet these Cunil residences - particularly the final ones - exhibit traits which clearly set them apart from contemporaneous domestic structures within the rest of the early village, portions of which were uncovered elsewhere below the main plaza (Cheetham 1996). In essence, the families residing at B4 maintained a higher rank than their neighbors, just a stones-throw away.

Several classes of exotic items are associated with the B4 buildings (Figure 3c), including potsherds incised with abstract supernatural creatures and other mythic-religious concepts. Such depictions are rare to absent elsewhere below Plaza B - the central and oldest part of the site. Indeed, the Cunil occupants of B4 enjoyed access to a wealth of exotics, which are rare or lacking beyond their immediate living space. Many of the designs on the pots occur during or just before Cunil times in regions beyond the Maya lowlands, including Chiapas (e.g., Clark and Cheetham 2005), Oaxaca (e.g., Flannery and Marcus 1994), and the Mexican Highlands (e.g., Niederberger 1976). Long-distance contact with foreign peoples seems to have been

part of the process that led to the emergence of the apparent, if not rudimentary, social ranking at Cahal Pech (Cheetham 1998). This interregional contact clearly had a heavy ritual and religious component, to judge by the themes etched on the pots.



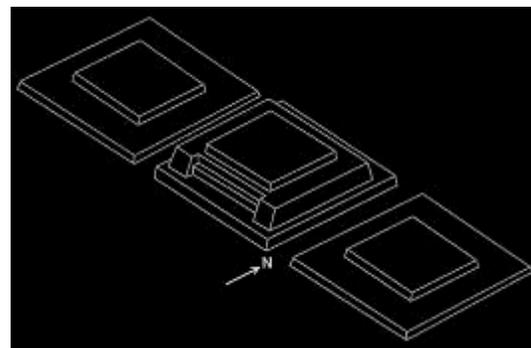
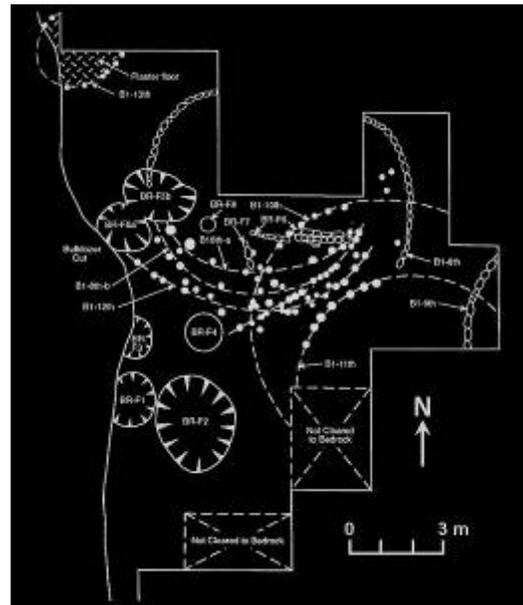
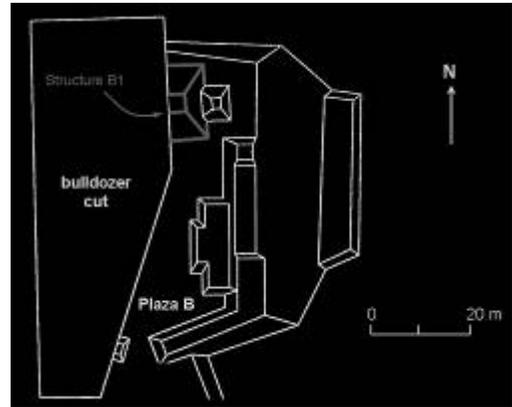
**Figure 4.** Looking down at Structure B4 9-sub, the first public temple building in the B4 architectural sequence. (photograph by D. Cheetham)

Architecturally, the B4 buildings - particularly the final Cunil examples - are more elaborate than contemporaneous structures below the plaza. Plaster was liberally used, interior floors are recessed into the platform on which the buildings stood, interior benches were constructed and, on one building, the exterior was painted red-and-white. But more important for the present discussion is the fact that, like later *temples* in the B4 sequence, the Cunil residences were oriented slightly west of magnetic north. There exists clear continuity in terms of building orientation. Moreover, at the close of the Cunil phase the superstructure of the final residential building was burnt, its ashes neatly piled onto the interior floor along with several exotic objects and incised potsherds. Presumably, this was done to celebrate the long-standing residential service of this location, and quite possibly to inaugurate the next building - the first temple - the front face of which is shown in Figure 4. This was a smooth transition; we think it was a

deliberate conversion of the location from secular to sacred and that it was driven by the same emerging elites that occupied the final B4 Cunil residence. It may, however, be incorrect to characterize the early residences as entirely “secular” given the persistence, regularity, and exclusiveness of the Cunil era iconography in this location.

Until recently, these Cahal Pech data seemed very unusual. This is no longer the case. Several lowland Maya sites have yielded data consistent with this interpretation. One of these is Blackman Eddy. In the north part of Blackman Eddy (Figure 5a), a stratigraphic sequence of building platforms has been recorded from a partially bulldozed temple (Garber et al. 2004a, 2004b). The investigators classified each platform as one of three types: domestic, public/integrative, and monumental/restrictive (Brown and Garber 2003). For our purposes, the latter two classes can be considered temples. The early domestic or residential buildings (Figure 5b) at the bottom of the architectural sequence were built on or close to bedrock, are apsidal and circular in shape, and yielded Cunil horizon markers—most notably, ceramics and figurines. Like Cahal Pech, there is evidence of imported exotics and incised pan-Mesoamerican designs on pots. Unlike Cahal Pech, intrasite data are lacking, preventing an assessment of the exclusivity of these items to this location, although we suspect that this was the case. The main point is that Blackman Eddy provides another case of clear continuity from residential to public architecture, in one area. Due to the broad exposures of Structure B1, the buildings above the early residential structures have been almost fully exposed and are unmistakably public in nature (Figure 5c).

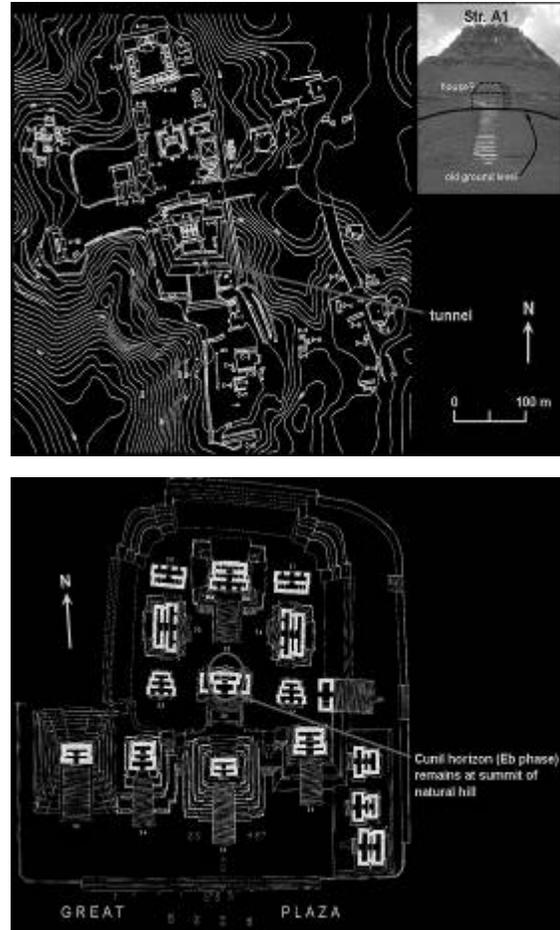
The other Belize Valley site of note is Xunantunich (Figure 6a), where tunneling



**Figure 5.** Blackman Eddy, Belize: (a) Plaza B, showing Mound 1 location and bulldozer cut; (b) plan of pre-Mamom B1 domestic structure outlines/postholes; (c) artist’s reconstruction of Middle Formative public platforms built directly over Cunil phase residences. (after Garber et al. 2004a:Figs. 3.4, 3.6, 2004b:Fig. 4.1)

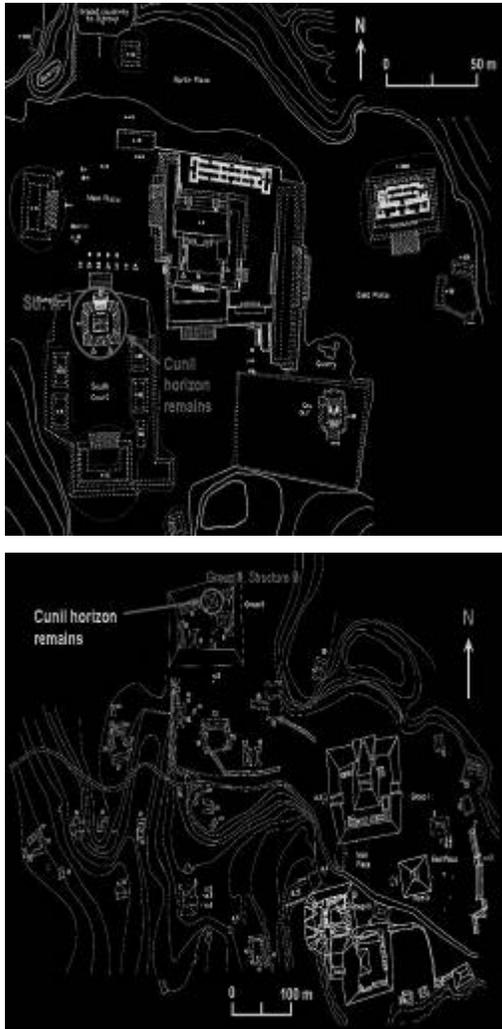
along bedrock below the site's largest Classic period temple yielded an undisturbed deposit of Cunil material (Strelow and LeCount 2001). No architecture was encountered, but potsherds and other items were found along a bedrock slope leading up to the summit of the original hill, deep below the massive Classic period temple. In other words, a Cunil sheet midden behind a residential structure that likely stood at the top of this natural promontory - the highest spot on the site. The collection of Cunil potsherds from this location, like Cahal Pech and Blackman Eddy, includes examples with pan-Mesoamerican motifs.

This pattern emerges again as we move west into the Peten district of Guatemala. The University of Pennsylvania excavations of Tikal's North Acropolis (Coe 1990) uncovered a chultun and other domestic features, which, on the basis of pottery and other artifacts, can be securely assigned to the Cunil horizon. This location (Figure 6b) appears to have been a natural high point in the original topography, although with so much modification of Tikal's landscape it is difficult to be sure. In any case, the pottery has incised pan-Mesoamerican designs and there is, of course, a clear case of later temple construction in this location. Despite considerable excavation, no similar deposits were found in the immediate area of the North Acropolis and Great Plaza. Two other collapsed chultuns containing abundant Cunil horizon material were, however, found in Tikal's Mundo Perdido Group during excavations by Juan Pedro Laporte and Vilma Fialko (1993; Cheetham et al. 2003). The approximately 500 meter distance between the North acropolis and Mundo Perdido suggests that pre-Mamom Tikal may have consisted of two small villages, or perhaps one very dispersed village.



**Figure 6.** Sites with Cunil Horizon remains: (a) Xunantunich, Belize, locating excavation tunnel at the rear of the principal Mound, "El Castillo" (after Keller 1993:Fig. 1); (b) Tikal, Guatemala, locating deposit at the center of the North Acropolis (after Harrison 1999:Fig. 36).

This also appears to be the case at Uaxactun. The Carnegie Institution's excavations in Plaza E (Ricketson and Ricketson 1937) recovered mixed deposits of Mamom and Cunil horizon pottery, the latter including pan-Mesoamerican motifs. An undisturbed sample of identical pottery has recently been identified from a midden deposit discovered during the Carnegie excavations below a sequence of small temples within the South Court of Group A (Smith 1937), located a kilometer to the west of Plaza E and on much higher ground



**Figure 7.** Sites with Cunil Horizon remains: (a) Uaxactun, Guatemala, locating deposit below Structure A-1 (after Ricketson and Ricketson 1937:Fig. 198); (b) Holmul, Guatemala, locating deposit below Group II, Structure B (map courtesy of Francisco Estrada-Belli).

(Figure 7a). This represents domestic building fill or an associated midden.

Recently, Francisco Estrada-Belli, Nina Neivens, and Michael Callaghan discovered a large sample of Cunil pottery deep within Group II Building B, at Holmul (Figure 7b). Although some early Mamom sherds (post Cunil) were mixed in this deposit, it comes from architectural fill nearly 4 meters above the surrounding plaza

and directly below a series of later temples. As their team digs further into this building a Cunil building may come to light. Thus far, no other deposit like this has been encountered at the site, although pre-Mamom potsherds have been found at Cival, a large center to the north of Holmul.

### Conclusions

At the outset of this paper we posed a question: Why in early Mesoamerican societies were the first temple buildings constructed in spot X as opposed to spot Y? In the lowland Maya case, there is an emerging pattern, which may provide an answer. At sites like Cahal Pech, Blackman Eddy, and probably many, many others, pre-Mamom elite residences were the focal point of community ritual based on the incorporation of esoteric knowledge, concepts, and quite likely exotic finished goods and raw materials. The symbols themselves were not passive decorative designs, but rather, meaningful representations that, through time, became associated with internal competition, information exchange, prestige, and ultimately differential social status. They signify powerful supernatural and cosmological themes potent in the emergence of ranked society in the Maya lowlands, as they did elsewhere in Mesoamerica several centuries earlier. Around 800 BC, for reasons yet to be determined, at least some emerging Maya elites deliberately transformed their residential space into the region's first temple platforms. Within 500 years those buildings became temple-pyramids. This pattern is different from well-documented archaeological cultures in other regions, where elite residences did not become public buildings, at least not public temple buildings.

What we are suggesting is that in at least some instances Middle Preclassic

temples represented the "house" of the founding lineage. They remained such a "house" even though, physically and publicly, a radical transformation had taken place. With one architectural alteration they went from private to public, from secular to sacred. But the terms secular and private are probably not completely appropriate terms for all practices undertaken at the early elite residences. The occupants likely maintained communal functions as well, shepherding those not in direct possession of esoteric knowledge and long-distance contacts. That may have been the glue binding these early communities. Whatever the case, their legacy was secured for centuries to come through the reverent treatment of their living space, ensuring their descendants an increased and perhaps uninterrupted role in political and religious affairs.

## References Cited

Awe, Jaime

- 1994 Ritual, Religion, and Cultural Complexity in the Middle Formative Belize River Valley. Paper presented at the 12th Maya Weekend, University Museum, University of Pennsylvania, Philadelphia.

Blake, Michael

- 1991 An Emerging Early Formative Chiefdom at Paso de la Amada, Chiapas, Mexico. In *The Formation of Complex Society in Southeastern Mesoamerica*, edited by William R. Fowler, Jr., pp. 27-46. CRC Press, Boca Raton.

Blake, Michael, Richard G. Lesure, Warren D. Hill, Luis Barba, and John E. Clark

- 2006 The Residence of Power at Paso de la Amada, Mexico. In *Palaces and Power in the Americas: From Peru to the Northwest Coast*, edited by Jessica Joyce Christie and Patricia Joan Sarro. University of Texas Press, Austin.

Brown, M. Kathryn, and James F. Garber

- 2003 Excavations on Structure B1 at Blackman Eddy: The 2002 Season. In The

Belize Valley Archaeology Project: Results of the 2002 Field Season, pp. 5-20. Report submitted to the Department of Archaeology, Belmopan, Belize. Southwest Texas State University, San Marcos.

Cheetham, David

- 1995 Excavations at Structure B-4, Cahal Pech, Belize: 1994 Operations. In Belize Valley Preclassic Maya Project: Report on the 1994 Field Season, edited by Paul F. Healy and Jaime J. Awe, pp. 18-44. *Trent University Occasional Papers in Anthropology* No. 10. Peterborough.

- 1996 Reconstruction of the Formative Period Site Core of Cahal Pech, Belize. In Belize Valley Preclassic Maya Project: Report on the 1995 Field Season, edited by Paul F. Healy and Jaime J. Awe, pp. 1-33. *Trent University Occasional Papers in Anthropology*, No. 12. Peterborough.

- 1998 Interregional Interaction, Symbol Emulation, and the Emergence of Socio-Political Inequality in the Central Maya Lowlands. Master's Thesis, Department of Anthropology and Sociology, University of British Columbia.

- 2005 Cunil: A Pre-Mamom Horizon in the Southern Maya Lowlands. In *New Perspectives on Formative Mesoamerican Cultures*, pp. 27-38, edited by Terry G. Powis. BAR International Series 1377, Oxford.

Cheetham, David, Donald W. Forsyth, and John E. Clark

- 2003 La cerámica Pre-Mamom de la cuenca del Río Belice y del Centro de Peten: Las correspondencias y sus implicaciones. In *XVI Simposio de Investigaciones Arqueológicas en Guatemala*, edited by Juan Pedro Laporte, Bárbara Arroyo, Héctor Escobedo and Hector Mejía, pp. 615-634. Museo Nacional de Arqueología y Etnología, Asociación Tikal, Guatemala.

Clark, John E.

- 1991 The Beginnings of Mesoamerica: Apologia for the Soconusco Early Formative. In *The Formation of Complex Society in Southeastern Mesoamerica*, edited by William R. Fowler, Jr., pp. 13-26. CRC Press, Boca Raton.

- 1994 The Development of Early Formative Rank Societies in the Soconusco, Chiapas, Mexico. Ph.D. dissertation, Department of Anthropology, University of Michigan, Ann Arbor.
- 2004 Mesoamerica Goes Public: Early Ceremonial Centres, Leaders, and Communities. In *Mesoamerican Archaeology: Theory and Practice*, edited by Julia A. Hendon and Rosemary R. Joyce, pp. 43-72. Blackwell, Oxford.
- Clark, John E., and David Cheetham
- 2005 Cerámica del Formativo de Chiapas. In *La producción alfarero en el México antiguo, Volumen I*, edited by Beatriz Leonor Merino Carrión and Ángel García Cook, pp. 285-433. Instituto Nacional de Antropología e Historia, Mexico City.
- Coe, William R.
- 1990 Excavations in the Great Plaza, North Terrace, and North Acropolis of Tikal. University of Pennsylvania, *University Museum Monograph*, No. 61. Tikal Report 14. Philadelphia.
- Drucker, Philip, Robert F. Heizer, and Robert J. Squier
- 1959 Excavations at La Venta, Tabasco, 1955. *Smithsonian Institution, Bureau of American Ethnology, Bulletin* 170. U.S. Government Printing Office, Washington, D.C.
- Flannery, Kent V., and Joyce Marcus
- 1976 Evolution of the Public Building in Formative Oaxaca. In *Culture Change and Continuity: Essays in Honor of James Bennett Griffin*, edited by Charles E. Cleland, pp. 205-221. Academic Press, New York.
- 1994 Early Formative Pottery of the Valley of Oaxaca, Mexico. *Memoirs of the Museum of Anthropology*, University of Michigan, No. 27. Ann Arbor.
- 2005 Excavations at San Jose Mogote 1: The Household Archaeology. *Memoirs of the Museum of Anthropology, University of Michigan*, No. 40. Ann Arbor.
- Garber, James F., M. Kathryn Brown, Jaime J. Awe, and Christopher J. Hartman
- 2004a Middle Formative Prehistory of the Central Belize Valley: An Examination of Architecture, Material Culture, and Sociopolitical Change at Blackman Eddy. In *The Ancient Maya of the Belize Valley: Half a Century of Archaeological Research*, edited by James F. Garber, pp. 25-47. University Press of Florida, Gainesville.
- Garber, James F., M. Kathryn Brown, W. David Driver, David M. Glassman, Christopher J. Hartman, F. Kent Reilly III, and Lauren A. Sullivan
- 2004b Archaeological Investigations at Blackman Eddy. In *The Ancient Maya of the Belize Valley: Half a Century of Archaeological Research*, edited by James F. Garber, pp. 48-69. University Press of Florida, Gainesville.
- Harrison, Peter D.
- 1999 *The Lords of Tikal: Rulers of an Ancient Maya City*. Thames and Hudson, London.
- Healy, Paul F., David Cheetham, Terry G. Powis, and Jaime J. Awe
- 2004 Cahal Pech, Belize: The Middle Formative Period. In *The Ancient Maya of the Belize Valley: Half a Century of Archaeological Research*, edited by James F. Garber, pp. 103-124. University Press of Florida, Gainesville.
- Hill, Warren D.
- 1999 Ballcourts, Competitive Games, and the Emergence of Complex Society. Ph.D. dissertation, Department of Anthropology and Sociology, University of British Columbia.
- Keller, Angela H.
- 1993 Vision and Revision: The Remapping of Xunantunich. In *Xunantunich Archaeological Project: 1993 Season*, pp. 86-99. Report Submitted to the Department of Archaeology, Belmopan, Belize. University of California—Los Angeles.
- Laporte, Juan P., and Vilma Fialko
- 1993 Análisis Cerámico de Tres Depósitos Problemáticos de Fase Eb, Mundo Perdido, Tikal. In *Tikal y Uaxactún en el Preclásico*, edited by Juan P. Laporte and Juan A.

- Valdés, pp.53-69. Universidad Nacional Autónoma de México, México.
- Lesure, Richard G.  
1999 Platform Architecture and Activity Patterns in an Early Mesoamerican Village in Chiapas, Mexico. *Journal of Field Archaeology* 26(4):391-406.
- Lesure, Richard G., and Michael Blake  
2002 Interpretive Challenges in the Study of Early Complexity: Economy, Ritual, and Architecture at Paso de la Amada, Mexico. *Journal of Anthropological Archaeology* 21(1):1-24.
- Love, Michael W.  
2002 Early Complex Society in Pacific Coastal Guatemala: Settlements and Chronology of the Río Naranjo, Guatemala. *Papers of the New World Archaeological Foundation*, No. 66. Brigham Young University, Provo.
- Marcus, Joyce, and Kent V. Flannery  
1996 *Zapotec Civilization: How Urban Society Evolved in Mexico's Oaxaca Valley*. Thames and Hudson, London.
- Niederberger, Christine B.  
1976 Zohapilco, Cinco Milenios de Ocupación Humana en un Sitio Lacustre de la Cuenca de México. *Colección Científica* 30. Instituto Nacional de Antropología e Historia, México City.
- Powis, Terry, David Cheetham, Bobbi Hohmann, Jaime Awe, and Paul Healy  
2001 Un Estudio Preliminar de la Arquitectura del Preclásico en el Valle de Belice. In *XIV Simposio de Investigaciones Arqueológicas en Guatemala*, edited by Juan P. Laporte, Hector Escobido, and Monzón de Suasnavor, pp. 81-101. Ministerio de Cultura y Deportes, Instituto de Antropología e Historia, Asociación Tikal. Guatemala City.
- Ricketson, Oliver G., Jr., and Edith B. Ricketson  
1937 Uaxactun Guatemala Group E, 1926-1931. *Carnegie Institution of Washington Publication*, No. 477. Washington, D.C.
- Smith, Robert E.  
1937 A Study of Structure A-1 Complex at Uaxactun, Guatemala. *Carnegie Institution of Washington, Publication*, No. 456. Washington, D.C.
- Strelow, Duane, and Lisa LeCount  
2001 Regional Interaction in the Formative Southern Maya Lowlands: Evidence of Olmecoid Stylistic Motifs in a Cunil Ceramic Assemblage from Xunantunich, Belize. Poster presented at the 66th annual meeting of the Society for American Archaeology, New Orleans.

---

## 17 **ROCKSHELTER EXCAVATIONS IN THE CAVES BRANCH RIVER VALLEY**

*Gabriel Wrobel, James Tyler, and Jessica Hardy*

---

*Research by the Belize Valley Archaeological Reconnaissance project during the summers of 2005 and 2006 focused on the excavation of the Caves Branch Rockshelter, as well as the initial surveying and test pitting of other sites in the surrounding river valley. The data from the Caves Branch Rockshelter suggest that a small farming community used it as a cemetery sometime during the Protoclassic period, after which other local groups occasionally visited it. The skeletal population from the cemetery includes both sexes and all age groups, including a high ratio of infants. These demographic proportions are typical of pre-industrial societies, though are rarely found at Maya sites because of cultural bias in mortuary patterning at complex urban centers. The age and sex ratios of the skeletal population, as well as the lack of signs of social complexity in this early, rural community, suggest that this context may contain a relatively complete population that could serve as a skeletal reference population, thus aiding in future bioarchaeological studies of the ancient Maya.*

### **Introduction**

The Caves Branch River Valley is located just east of Belmopan along the Hummingbird Highway near the modern village of Armenia and the ancient Maya site of Deep Valley. The karst mountains lining the valley are riddled with caves evidencing human activity, and these sites have been a focus of investigations by the Belize Valley Archaeological Reconnaissance project during the 2005 and 2006 field seasons. So far, the most extensive excavations have been conducted at Caves Branch Rockshelter (CBR), first investigated by Juan Luis Bonor in 1994 and 1995 (Bonor 1995a and 1995b, Bonor et al 1999). During 2006, the Caves Branch project was expanded by systematically identifying other rockshelters in the area showing evidence of ancient use. Test pits were placed in one of these, Deep Valley Rockshelter 1 (DVR-1), to help determine the dates and nature of its use.

The project was initiated with two basic research agendas. First, we are focusing on these sites in an effort to further identify variation in ancient cave use, which was a central theme of the Western Belize

Regional Cave Project (Awe 1998: 1). The WBRCP specifically investigated light, penumbral and dark zone contexts at three sites, Actun Nak Beh, Actun Uayazba Kab, and Actun Halal to determine if the ancient Maya used specific areas differentially. With a few notable exceptions, rockshelters largely have been overlooked in Maya cave studies despite the ritual significance these sites had for ancient, as well as for modern, Maya. The preliminary data from Caves Branch clearly show that the use of rockshelters by the Maya changed over time. Furthermore, the material culture found in rockshelters is easily distinguishable from that found in “dark zone caves,” suggesting that the geomorphological differences were important to the ancient Maya in defining the ritual functions of sites. The basic research goals related to caves are (1) to further characterize the ritual use of rockshelters, noting changes in their use over time, and (2) to explore other rockshelters in the area to determine inter-site variability.

A second important research focus of the Caves Branch project is bio-archaeology. The density of burials found by Bonor

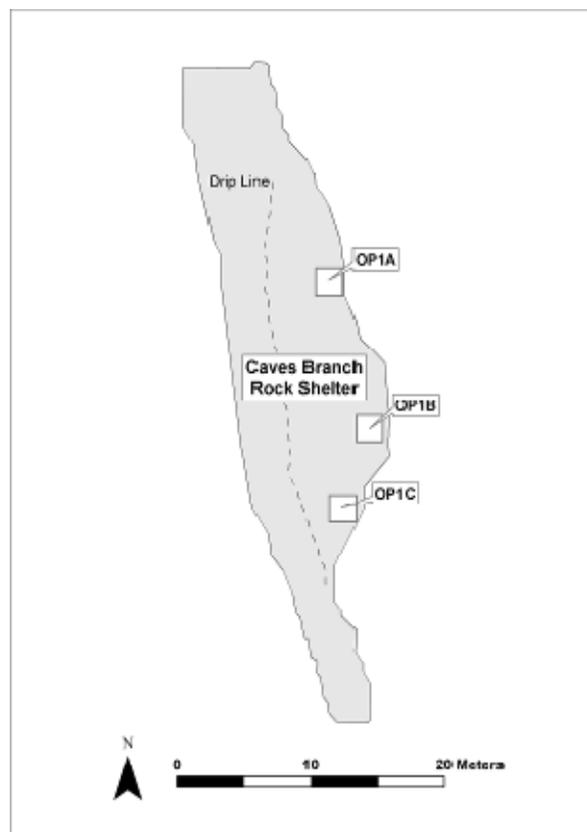
during his preliminary excavations led him to estimate that the site held approximately 150 individuals, which appears now to be an underestimate (Bonor et al 1999). Glassman's analysis, following Bonor's original excavations, identified individuals of both sexes and a range of age groups, including numerous infants (Glassman and Bonor 2005). Based on the sheer numbers of individuals, on the age/sex profile of the initial skeletal population, and on Bonor's hypothesis that this was the funerary site of a small rural agricultural community, we decided to reopen excavations in the hopes that the skeletons were representative of an entire community. If this were the case, then this skeletal population would be relatively unique in the Maya region. Without the complex rules governing burials at ceremonial centers, it's possible that this skeletal population may be demographically accurate and thus could be used as a biological reference population to create standards for analysis and comparison with other sites, much the way data from the colonial site of Tipu is used currently (Wrobel et al. 2002, Danforth et al. *in press*).

To determine whether the skeletal series is such an appropriate reference sample, the bio-archaeological research goals are focused on (1) determining whether the mortuary use of the site was limited in time and (2) seeking evidence for the presence of mortuary differentiation within this community, which might indicate that some individuals were buried elsewhere

### Caves Branch Rockshelter

The Caves Branch Rockshelter is approximately 35 meters long and 15 meters high, with a maximum depth of 10 meters (Figure 1). Nearby are other cave sites, a Late Classic plazuela group and the bulldozed remains of a number of housemounds, and a fresh water source.

Bonor and colleagues (1999) hypothesized that ritual activity at the site was limited to a single function, that of a domestic cemetery. To test this hypothesis, we looked for the presence of unique interments, such as secondary or sacrificial burials, or of other specialized deposits, which would suggest that the site had multiple ritual roles.



**Figure 1.** Map of Caves Branch Rockshelter with excavation operations.

Interpretation of burial features is often difficult since the site was constantly churned up by new burials, in the process disturbing older one. In many cases, this activity, as well as other taphonomic processes, usually will result in puzzling contexts. However, the bones uncovered thus far do not exhibit cut marks or any other indication of ritual postmortem treatment. In addition, none of the disarticulated remains found in the Caves Branch Rockshelter appear to be formal

bundled remains of secondary burials. Instead, much in the same way that the bones of individuals placed in tombs were often pushed to the side to make way for a new body, the bones of individuals disturbed by a newly dug grave were included in the grave fill. Often, some of the larger or more distinctive elements were piled on or near the new interment and excavation of nearby contexts generally revealed the undisturbed portion of the body left intact.

Dates for the burials were derived from several vessels, which were clearly interred as grave goods (Figures 2 and 3). The styles found at CBR are utilitarian, and are best described by Reents (1980: 168-186, figure 21a-24d) and Gifford (1976). The vessels found in graves all date to the Hermitage phase, and include types such as Succotz Striated and Cocay Applied, which are found throughout caves in Western Belize, including Petroglyph, St. Herman's, Actun Balam, and others in the Caves Branch, Roaring Creek, and Sibun River Valleys (Graham et al. 1980). None of these vessels have kill holes, which suggest an important distinguishing characteristic between "grave goods" and of "offerings" in the form of ceramic vessels often placed in caves. Thus far, no artifacts have been found within the vessels. Most show charring on the bottom, suggesting that they were cooking vessels, and may have held food when they were buried.

Potsherds in the rockshelter not directly associated with burials show a much wider variety of forms spanning a longer time period, ranging from the Middle Preclassic through the Terminal Classic, including Floral Park, Hermitage, Spanish Lookout and New Town Complexes. Again, most seem to come from very functional cooking vessels, though there are some other decorative examples as well. This range of dates is typical of other ceramic assemblages

found in other rockshelters and caves in the area.

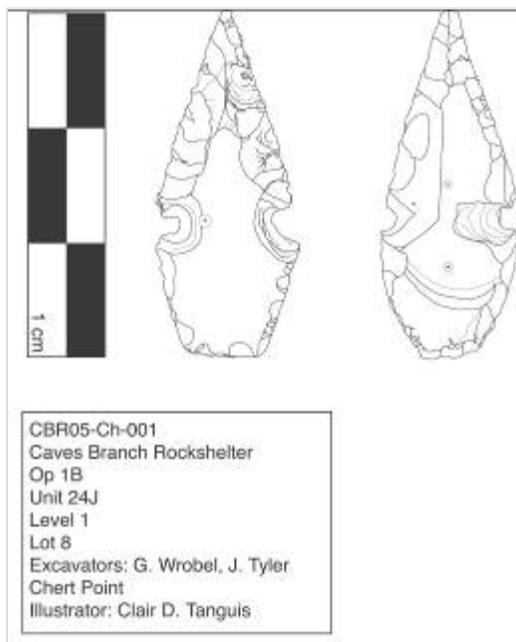


**Figure 2.** Protoclassic vessel included as grave good in Caves Branch Rockshelter.



**Figure 3.** Detail of Protoclassic vessel included as grave good in Caves Branch Rockshelter

In general, the artifacts found in the rockshelter are consistent with those expected from a small rural farming community, including net weights, local fauna, chert flakes, and jute shell. An arrow point found near the surface suggests hunters stopped by the rockshelter in the Terminal Classic or Postclassic period (Figure 4). While a few exotic or imported items were found at the site, including several small pieces of jadeite, obsidian, and carved marine shell, these are items that are consistently present in low levels in most settlement contexts. In addition, these



**Figure 4.** Arrow point surface collected from Caves Branch Rockshelter

exotic items were found in the general matrix rather than with burials, perhaps suggesting a later date than the burials.

The only possible indicator of status hierarchies in the population was an elaborately carved bone (Figure 5) found near the head of a small child. This individual was discovered in the south wall of unit 13G and was represented solely by cranial elements. The skull was either placed face down or became situated in that manner as a result of taphonomic processes following interment. While it has been stated that the population interred within the Caves Branch Rockshelter appears to represent a small, agrarian, non-elite community (Glassman and Bonor 2005, Wrobel and Tyler 2006), the presence of this type of artifact raises questions as to this assumption. It has been suggested that this type of woven mat motif is, in many cases, a symbol intimately tied with royalty and council houses. Citing the *Dictionario San Francisco* (Michelon 1976), Grube et al.

(1995) illustrates that these mat houses were referred to as a *popol nah*. Friedel et al. (1993) observed this mat pattern on the walls of a building at the site of Uaxactun. Their interpretation of this motif suggests that it represents, “a community council house” and “a place where the king interacted with his people- especially through the performance and teaching of sacred dance” (Friedel et al. 1993:143-143).

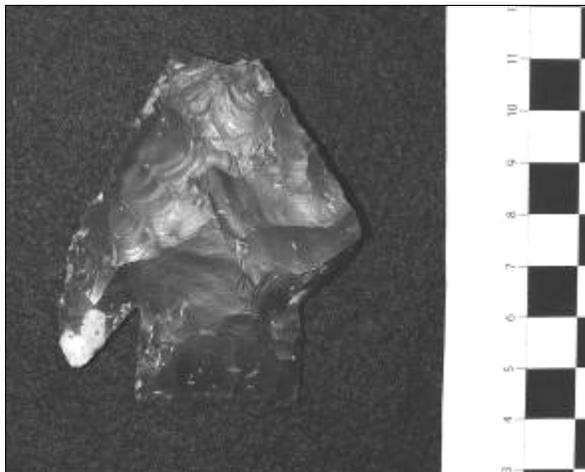
Whether or not this specific artifact represents a direct link to a royal council house is, at this point, debatable given the utilitarian nature of all the other artifacts recovered thus far, and the lack of differentiation in the burials, which might suggest the presence of a social hierarchy.



**Figure 5.** Carved faunal bone showing weaved mat motif

Finally, a Late Archaic Lowe point was discovered in association with the lower torso of a probable female adult, which was placed in a tightly flexed position (Figure 6). It was evident that this burial had been disturbed, probably as a result of numerous burials interred directly above this individual. The Lowe point was located approximately 9cm. from the knee area of the individual and was oriented at 39 degrees NNE with the point facing towards

the rockshelter. As discussed by Lohse et al. (2006), radiocarbon dates for this type of Archaic point have been based on three samples taken from northern Belize, two of which have been described by the author as “loose associations” (p. 217), a context that is all too common with regard to these types of discoveries. However, these samples have provided a date between 2500-1900 B.C. for Lowe points, a range that can be corroborated by examples Pohl et al. (1996) discovered at Pulltrouser Swamp. This date raises a number of interesting points concerning this specific interment at the rockshelter. While its close association to the Protoclassic burials would suggest the individual is Maya, it is from the deepest cultural levels of the rockshelter. If the burial does date to the archaic period, then it would represent the oldest dated human remains in Belize, and among the oldest in Mesoamerica. If, however, the burial is contemporaneous with the Protoclassic interments, then this represents a case of curation of discarded objects, perhaps for use as divination/ divining tools or personal sacra, as discussed by Brown (2000) for both ancient and modern Maya ritual.

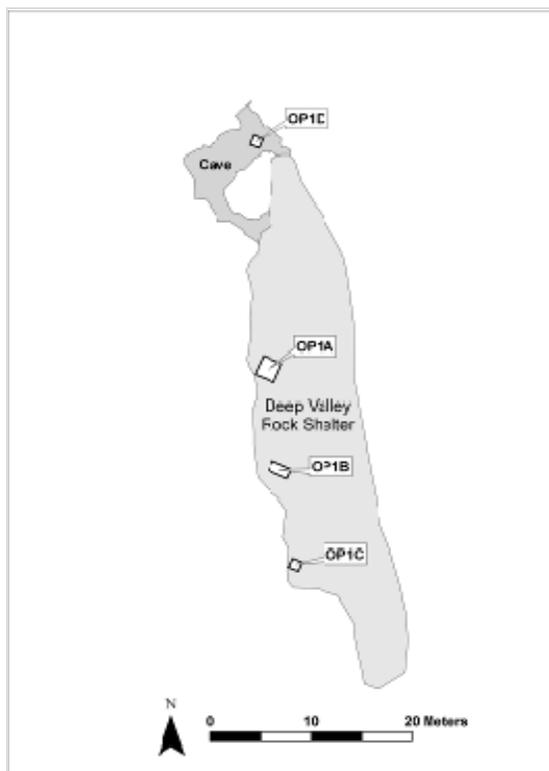


**Figure 6.** Archaic Lowe point found with a burial in the Caves Branch Rockshelter

### **Deep Valley 1 Rockshelter**

During the 2006 field season, the Caves Branch project initiated excavations at the site of Deep Valley Rockshelter 1 (DVR-1) in an attempt to begin to characterize the diversity of material culture of rockshelter sites in the region (Figure 7). This site was targeted for investigation based on its similarity to CBR. Both rockshelters are approximately the same size—height, depth, length, with a flat floor, and both have small caves within them. Like at CBR, the surface of DVR-1 was littered with numerous ceramic sherds, faunal remains, two pieces of human bone, and jute shells. However, the initial excavations have clearly shown that the deposits at DVR-1 are very distinct from those at Caves Branch. The matrix at DVR-1 is incredibly dense with jute snails—a 1x1 test pit yielded over 20,000 shells in the first 60 cm. These snails were a source of food for the ancient Maya, are often associated with ritual activity in caves, and even today are abundant in the Caves Branch River, which flows next to DVR-1. Interestingly, the DVR-1 jute are generally very small, and with the exception of the larger shells, the majority does not have their ends spire-lopped, which is the typical way to extract the meat when eating them (Halperin et al 2003). At CBR, the jute was generally larger and less plentiful. One explanation for these differences may be related to the riverine source of the jute shell, which may have been different for the two sites. Another possibility is that the jute deposits were temporally distinct at the two sites. A recent study by Cook and Salter-Pedersen (2006) of pomacea shells at Chau Hiix found that they were smaller in the Early Classic compared to the Terminal Classic, which they tentatively interpret as over-harvesting when the population of the site was larger. The dense deposits of jute shell at DVR-1 are similar to that of the

rockshelters in the Maya mountains, where they were used as grave fill (Prufer 2002). Thus far, no burials have been found at DVR-1, and the relative paucity of early ceramics there suggests that it did not have the importance of CBR to the Protoclassic population.



**Figure 7.** Map of Deep Valley Rockshelter 1 with excavation operations

### **Skeletal Remains from Caves Branch Rockshelter**

Skeletal remains excavated from the Caves Branch Rockshelter in the last two seasons have undergone preliminary analysis. Bonor's excavations identified a total of 32 primary burials, and in the 12 weeks of excavations conducted during the 2005 and 2006 seasons, 55 more. As discussed above, part of the Caves Branch project's research agenda focuses on defining the demographic character of the skeletal population in these rockshelters. The age distribution of the CBR skeletal series (Table 1) shows a mortality pattern

that heavily favors infants and children (30.4%), when compared to other Classic Maya sites. Such a high infant mortality is very typical of pre-industrial societies. These statistics are important to physical anthropologists in demonstrating differences in health between groups separated by time, space, or social class. Unfortunately for bio-anthropologists working in the Maya region, cemetery samples like this are rarely identified. One reason for this is that archaeologists often tend to target architecture and bio-anthropologists in this region do not generally have their own archaeological research designs. There are few sites with large Maya skeletal collections in general, and for none of these can we be certain that the sex and age distributions are representative of their source living populations, since their composition can be affected by cultural and taphonomic factors. In other words, our "samples" are not samples, since they are not a random group of individuals selected from the population, and thus are not good models for ancient Maya populations. Instead, the skeletons represent those individuals that archaeologists are most likely to find and collect. So far, Caves Branch Rockshelter has produced a very promising collection. The population shows biological stresses, such as linear enamel hypoplasias and porotic hyperostosis, typical of Maya populations. Again, though, the most exciting aspect is the possibility of actually being able to quantify these rates within the population.

### **Conclusions**

The following conclusion summarizes the current data from CBR and DVR-1 as they relate to the general hypotheses of the Caves Branch project outlined above.

1. *To further characterize the ritual use of rockshelters, noting changes in their function over time.*

	B-2	2-6	6-18	30-40	40+	Adult	Indet.	Total	%
Male	N/A	N/A	---	1	3	1	---	5	10.2
Female	N/A	N/A	---	2	4	5	---	11	22.4
Subadult	7	7	1	---	---	---	---	15	30.6
Indeterminate	---	---	---	1	3	14	---	18	36.7
Total	7	7	1	4	10	20	0	49	100
Percent	14.2	14.2	2.0	8.1	20.4	40.8	0	100	

**Table 1.** Sex and age distribution of Caves Branch skeletal population through 2005 fieldseason.

The mortuary component of Caves Branch Rockshelter is unusual for the ancient Maya, who in general are not thought to have used cemeteries until the Colonial era, instead burying their dead within residential structures and “ceremonial locations” (Welsh 1988, Whittington 1991: 172). While human remains are often found in caves, mortuary use of most caves, like ceremonial architecture, generally is limited to a few individuals based on their special social roles in life or their sacrificial roles in cave rituals (Minjares 2003, Gibbs 2000, Brady 1997, Brady et al. 1997). Despite these distinctions, however, the Caves Branch Rockshelter also is similar to the more traditional caves thus far documented by the WBRCP, since it is a ritual site incorporated into a natural rock feature located peripherally to a settlement, rather than a wholly constructed feature located within a settlement - thus there are similarities in patterns of use. So, the changes in the use of rockshelters over time parallel those noted in “dark zone” caves (See Moyes and Prufer, this volume). The diagnostic vessels associated with graves at CBR all date to a similar time frame, likely sometime between 100 and 400 AD. However, the site was obviously visited long after the mortuary use of the site ceased. Like other cave sites, we find smashed pottery well into the Late Classic and even the Terminal Classic.

**2. To explore other rockshelters in the area to determine inter-site variability.**

In addition to CBR, several other rockshelters have been located in the Caves Branch River Valley. The excavations at Deep Valley Rockshelter 1 showed that activities associated with rockshelters might have been as variable as in caves. Research planned for the 2007 field season will continue to document variability in rockshelter use by placing test pits in a series of other rockshelters to try to determine whether any factors such as time period, location, or morphology is related to material culture indicating particular uses of the sites.

**3. To determine if the mortuary use of Caves Branch Rockshelter was limited in time.**

Thus far, the data seem to indicate that the CBR skeletons were relatively contemporaneous. And all of the diagnostic vessels found in association with burials date to the Protoclassic period. Ceramic sherds from other time periods spanning the Middle Preclassic through the Terminal Classic are not associated with burials, but instead appear to have been broken and scattered on the surface. Some of these were found in deeper levels because of bioturbation and looting activity. The overlapping nature of the burials suggests that the site was used for burial over the

space of several generations. Thus, “relatively cotemporaneous,” this could still mean that the “population” spanned several hundred years, which would not be ideal for a reference population.

**4. To seek evidence for the presence of mortuary differentiation within this community, which would indicate that some individuals were buried elsewhere.**

The burials found in the last two seasons have revealed much more variation than reported by Bonor (1995a, 1995b, 1999). However, these variations are basically in the form of body position and orientation, rather than in elaboration. The possible exception to this is the individual buried with the incised bone, carved with a woven mat motif. Again, though, based on the lack of other evidence of vertical social tiers, we agree with Bonor’s assessment of the skeletal population as being a simple agricultural community. While it’s still certainly possible that some individuals may have been distinguished in death by their social role within the community, we see no evidence for it within the rockshelter. The nearby plazuela group is large enough to suggest an elite presence in this valley, but an initial probe into the eastern structure in 2005 revealed only Late Classic ceramics, suggesting that the mortuary use of the rockshelter predates at least this piece of evidence for social verticality.

Research at the Cave’s Branch Rockshelter represents a dynamic research agenda. Future research initiatives will provide continued focus on the skeletal remains while embracing newfound research themes such as the potential archaic presence at the site and the changing role of the social and political organization in the Protoclassic/Early Classic transition. Information gained through the continued investigation of the CBR and surrounding areas will provide a wealth of information

on topics that will benefit all those engaged in Maya research.

*Acknowledgements:* We would like to thank the following individuals and institutions for their support and assistance: Dr. Jaime Awe, Dr. John Morris, Rafael Guerra, Sherilyne Jones, and the rest of the Belize Institute of Archaeology; Christophe Helmke, Gwendolen Raley, Cameron Griffith, Dr. Lisa LeCount, Myka Schwanke, Jill Jordan, and Danielle Tanguis; Ian Anderson and all the staff at the Caves Branch Adventure Lodge. The University of Mississippi Office of Research and Sponsored Programs, and the UM Department of Sociology and Anthropology.

## References Cited

- Awe, Jaime J.  
1998 The Western Belize Regional Cave Project: Objectives, Context, and Problem Orientation. In *The Western Belize Regional Cave Project: A Report of the 1997 Field Season*, edited by J. J. Awe. Department of Anthropology Occasional Paper No. 1. University of New Hampshire, Durham.
- Bonor, Juan Luis  
1995a Excavaciones de Salvamento en "Caves Branch Rock Shelter", Cayo District, Belize. *Investigadores de la Cultura Maya* 1:46-70.  
1995b Trabajos Recientes en la Región de Caves Branco, Distrito del Cayo, Belice. *Investigadores de la Cultura Maya* 4: 250-267.
- Bonor Villarejo, Juan Luis, and David M. Glassman  
1999 La arqueología y el estudio de los restos humanos en Caves Branch Rock Shelter, Distrito de El Cayo, Belice. *Mayab*, No. 12: 18-30.
- Brady, James E.  
1997 Settlement Configuration and Cosmology: The Role of Caves at Dos Pilas. *American Anthropologist* 99 (3): 602-618.

- Brady, J. E., A. Scott, A. Cobb, I. Rodas, J. Fogarty, and M. Urquizú  
1997 Glimpses of the Dark Side of the Petexbatun Regional Archaeological Project: The Petexbatun Regional Cave Survey. *Ancient Mesoamerica* 8 (2):353-364.
- Brown, L.  
2000 From Discarded to Divination: Demarcating the Sacred through the Collection and Curation of Discarded Objects. *Latin American Antiquity* 11(4): 319-334.
- Cook, Della C, and Ellen Salter-Pedersen  
2006a Pomacea snails and Classic Maya: archaeogastronomy? Paper presented at the annual meeting of the Society for American Archaeology, San Juan, Puerto Rico.
- Danforth, Marie Elaine, Gabriel Wrobel, David Swanson, and Carl Armstrong  
*In press* A Model Growth Curve for Juvenile Age Estimation Using Diaphyseal Long Bone Lengths among Ancient Maya Populations. To appear in *Latin American Antiquity*.
- Friedel, David, Schele, Linda, and Joy Parker  
1993 *Maya Cosmos: Three Thousand Years on the Shaman's Path*. William Morrow: New York.
- Gibbs, S. A.  
2000 *An Interpretation of the Significance of Human Remains from the Caves of the Southern Maya Lowlands*. MA Thesis, Trent University, Peterborough.
- 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 18, Harvard University, Cambridge.
- Glassman, David M., and Juan Luis Bonor Villarejo  
2005 Mortuary practices of the prehistoric Maya from Caves Branch Rock Shelter, Belize. In *Stone Houses and Earth Lords: Maya Religion in the Cave Context*, edited by Keith M. Prufer and James E. Brady, pp. 285-296. University of Colorado Press: Boulder.
- Graham, Elizabeth, Logan McNatt, and Mark A. Gutchen  
1980 Excavations at Footprint Cave, Caves Branch, Belize. *Journal of Field Archaeology*, Vol. 7(2): 153-172.
- Grube, Nikolai, Thomas H. Guderjan, and Helen R. Haines  
1995 Late Classic Architecture and Iconography at the Blue Creek Ruin, Belize *Mexicon* 17(3): 51-56.
- Halperin, Christina T., Sergio Garcia, Keith M. Prufer, and James E. Brady  
2003 Caves and ancient Maya Ritual Use of *Jute*. *Latin American Antiquity* 14(2): 207-219.
- Lohse, J. C., J. Awe, C. Griffith, R. M. Rosenswig, and F. Valdez, Jr.  
2006 Preceramic Occupations in Belize: Updating the Paleo-Indian and Archaic Record. *Latin American Antiquity* 17(2): 209-226.
- Michelon, Oscar (ed.)  
1976 *Diccionario de San Francisco* (manuscript written before 1690). Bibliotheca Linguista Americana, Vol. II. Adademische Druck-u. Verlagsanstalt, Graz.
- Minjares, A., Jr.  
2003 *Human Skeletal Remains of the Ancient Maya in the Caves of Dos Pilas, Guatemala*. MA Thesis, Texas A&M University, College Station.
- Pohl, Mary D., Pope, Kevin O., Jones, John G., Jacob, John S., Piperno, Dolores R., Defrance, Susan D., Lentz, David L., Gifford, John A., Danforth, Marie E., and J. Kathryn Josserand.  
1996 Early Agriculture in the Maya Lowlands. *Latin American Antiquity* 7:355-372.
- Prufer, Keith M.  
2002 *Communities, Caves, and Ritual Specialists: A Study of Sacred Space in the Maya Mountains of Southern Belize*. Ph.D. Dissertation, Anthropology Program, Southern Illinois University, Carbondale.
- Reents, Dorie  
1980 *The Prehistoric Pottery from Petroglyph Cave, Caves Branch Valley, El Cayo*

*District, Belize, Central America.* M.A. Thesis, University of Texas, Austin.

Welsh, W. B. M.

1988 *An Analysis of Classic Lowland Maya Burials.* BAR International Series 409. British Archaeological Reports, Oxford.

Whittington, S. L.

1991 Detection of Significant Demographic Differences between Subpopulations of Prehispanic Maya from Copan, Honduras, by Survival Analysis. *American Journal of Physical Anthropology*, Vol. 85: 167-184.

Wrobel, Gabriel D., Marie E. Danforth, and Carl Armstrong

2002 Estimating Sex of Maya Skeletons by Discriminant Function Analysis of Long-bone Measurements from the Protohistoric Maya Site of Tipu, Belize. *Ancient Mesoamerica* 13: 255-263.

Wrobel, G. D. and J. Tyler

2006 Revisiting Caves Branch Rockshelter: Results of the 2005 Excavations. In *The Belize Valley Archaeological Reconnaissance Project: A Report of the 2005 Field Season.* Edited by Christophe Helmke and Jaime Awe. Belize Institute of Archaeology, National Institute of Culture and History, Belmopan.

---

## 18 **FIFTEEN YEARS OF SETTLEMENT PATTERN SURVEYS IN THE THREE RIVERS REGION OF NORTHWESTERN BELIZE: WHAT HAVE WE LEARNED?**

*Hubert R. Robichaux*

---

*This paper reviews the settlement survey work accomplished over the last 15 years in the Belizean portion of the Three Rivers Region. Settlements units are characterized and discussed in terms of cities, towns, smaller nucleation's, and rural zones. Conclusions are reached concerning the size of urban zones, their population density, total population, and spatial organization. Although Maya peoples were present in the region during the Middle Preclassic, significant construction of communities generally did not begin until the Late Preclassic. Population and settlement reached its maximum during Late Classic times. The entire region was largely abandoned and uninhabited by the end of the Terminal Classic period. The accumulated data are informative about the ancient culture present in the region, suggesting among other things that a hierarchical, political and economic structure was present, and that militarism was a major element of Late Classic political strategies.*

### **Introduction**

In 1930, in British Honduras, as Belize was then called, virtually nothing was known about ancient Maya ruins in the northwestern portion of the country in the area now known as the Three Rivers Region. That situation started to change in 1931 with the arrival of a young British archaeologist, J. Eric S. Thompson, who commenced his archaeological research in the region. This paper will attempt to summarize the results of the large amount of archaeological survey that has been conducted in that region since 1931, and will also outline some conclusions that can be drawn about ancient Maya settlement and culture, based upon this, and other data.

### **The Three Rivers Region:**

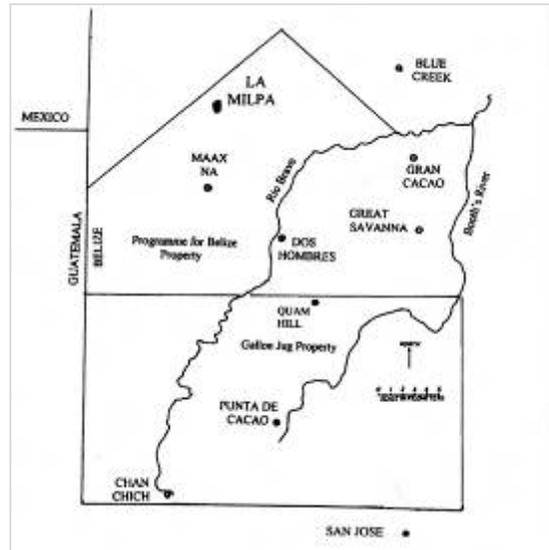
The Three Rivers Region, as it is presently defined, includes contiguous areas of northeastern Guatemala and northwestern Belize (Figure 1). Almost certainly some sites located in the southeastern corner of the Mexican state of Campeche (Sprajc 2001) were politically associated with the large sites of Rio Azul and La Milpa in the

Three Rivers Region, but the Mexican sites have thus far not been considered in the analysis of the region. In this paper, I will focus principally on the Belizean half of the region. The Rio Azul Archaeological Project (e.g., Adams 1999), and the Ixcario Regional Archaeological Project have studied the other areas in Guatemala (e.g., Adams and Valdez 2003). The Belizean portion of the region today largely consists of three parcels of land (Figure 2). They are the Mennonite land to the north, the Programme-for-Belize (PFB) land in the center, and the Gallon Jug property to the south. The Three Rivers Region derives its name from the presence of three small rivers, the Rio Azul, the Rio Bravo, and Booth's River that traverse the area from southwest to northeast. Today the vast majority of the region is covered by dense jungle, and is largely devoid of human occupation. The Three Rivers Region contains a vast treasure of ancient Maya ruins that has only in recent years become fully apparent.

The region has experienced a curious pattern of archaeological study wherein an



**Figure 1.** Map showing the location of the Three Rivers Region of northwestern Belize and northeastern Guatemala



**Figure 2.** Map of the Belizean portion of the Three Rivers Region showing the location of the Mennonite land, the Programme-for-Belize property, and the Gallon Jug property

extended time gap exists between Thompson's initial forays into the region in the 1930s, and the follow-on research to be described here. In 1931 Thompson (1963:228-230) intended to study a small site he referred to as Kaxil Uinic (now

thought to be either the site of Chan Chich (Guderjan et al 1991:59) or E'kenha (Houk 1998:5), but was dissuaded from doing that by the lack of a suitable labor force in that area. He settled instead upon the site of San Jose which is today located on the large

Yalbac property, at the southeast corner of the Three Rivers Region, just to the south of the Gallon Jug property. In 1931, 1934, and 1936 Thompson, with a small crew, mapped the San Jose site center and conducted excavations. In working at San Jose, Thompson made a noteworthy break from the then prevalent pattern in Maya archaeology of studying only the largest, most spectacular sites, which practice he rightfully thought gave a distorted view of ancient Maya life and culture. Later, in 1938, Thompson conducted a reconnaissance of the very large Three Rivers Region site of La Milpa (Thompson 1963:270). He made a sketch map of part of the La Milpa site center, discovered a number of stelae, and interpreted the discernable calendrics on them.

For almost 50 years following Thompson's 1930s incursion into the Three Rivers Region, there were only incidental short visits into the region by archaeologists, including those of a number of government officials (Hammond 1991). One exception was Mary Neivens' somewhat ill fated mapping efforts at the Blue Creek ruins on the Mennonite land in 1976. It was really not until 1988 that archaeological research resumed in earnest in the Three Rivers Region with reconnaissance and survey work conducted by the Maya Research Program under the direction of Thomas Guderjan (Guderjan 1991), and also by a contracted archaeological assessment of the La Milpa site by Anabel Ford and Scott Fedick (1988). Guderjan's work, a little over 15 years ago represents the opening of the modern period of archaeological investigation in the Belizean portion of the Three Rivers Region. His program of reconnaissance, in which informants aided him, was important because it located, mapped, or otherwise described the site centers of 44 small to large sites whose locations stretched from the Mennonite land

in the north to the Gallon Jug property in the south. Guderjan's survey results provided a strong hint as to the archaeological richness present under the jungles of the region.

These discoveries stimulated the initiation of other projects that, with the approval of the Belize government, began to work in the Three Rivers Region. By way of summary, it can be said that most of the subsequent work in the region has been accomplished by the following Belize government-approved projects: work on the Mennonite land under permits issued to the Maya Research Program directed initially by Guderjan, and later by Jon Lohse; work on the Programme-for-Belize land under permits issued to the PFB Archaeological Project directed initially by Richard E.W. Adams and Fred Valdez, Jr., and subsequently by Valdez alone, and also by permits issued to the La Milpa Archaeological Project directed by Norman Hammond and Gair Tourtellot for the specific study of the 6 km radius area surrounding the La Milpa site center; work on the Gallon Jug property has been accomplished under permits issued to the Center for Maya Studies directed by Brett Houk for study of the Chan Chich site, and, finally, under permits issued to the Punta de Cacao Archaeological Project, directed by the author, for the study of the Punta de Cacao site.

These all are, or were, multi-year projects, with the PFB Archaeological Project being the longest lived, extending 15 years, from 1992 until the present. The PFB project also, perhaps, has had the most diversity in the conduct of its research. The work of many archaeologists and specialists from many universities has been conducted on the PFB land through the medium of subprojects subsumed under the main PFB Project's permit, resulting in the accumulation of a very rich data base dealing with virtually all areas of the vast

PfB property (for example, see Valdez 2005). The PfB project has discovered a plethora of sites previously unknown to archaeologists, including large ones such as Dos Hombres, Gran Cacao, Ma'ax Na, and Great Savannah.

The research results from these projects with regard to settlement patterns in the Three Rivers will now be considered. From this data, and the data from elsewhere, we can say that the ancient lowland Maya population was not evenly distributed across the landscape. Instead, their population had a definite tendency to cluster at certain places. Some of these clusters, or nucleations of population, were larger than others. There was, in fact, something of a continuum in the size of these population nucleations, extending downward from the largest to the smallest (see, for example, Adams et al 2004).

Archaeologists have persistently used vague or neutral terms, such as site, minor center, major center, ceremonial center, district, etc., to label these ancient Maya population nucleation. This has been so due to the difficulty of placing any given cluster of settlement into its larger settlement context because of the low visibility in the jungle environment widely present in the Maya lowlands. However, due to the increasing availability of survey data over extended areas in the Three Rivers Region and elsewhere, it has by now become evident that what we really have are cities, towns, villages, hamlets, i.e., the usual size- and function-based typology used cross-culturally, across the globe, to describe human settlement. The settlement zones between the various nucleated areas are *rural* in nature. Maya urban areas, while not as densely packed as those in many other cultures, nonetheless contain settlement at a much greater density than that in the surrounding rural zones.

In the following consideration of the settlement studies that have occurred in the Belizean portion of the Three Rivers Region in the last 15 years, I will frame my discussion in terms of cities, towns, smaller nucleation's, and rural areas.

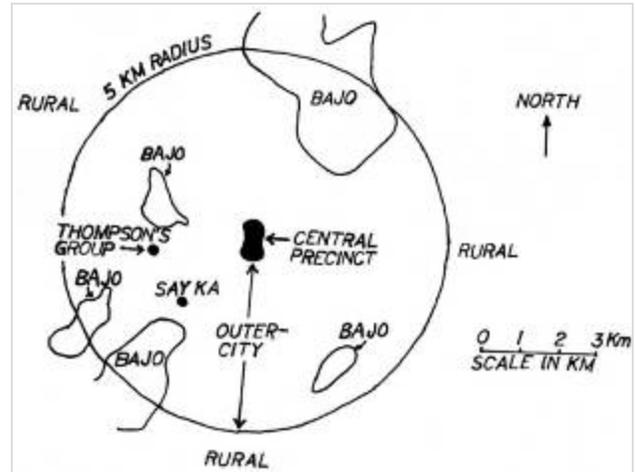
### Cities

There was only one city in the Belizean half of the Three Rivers Region, and that was La Milpa on the PfB property. The center of this large city has been mapped successively by Thompson (1939), Ford and Fedick (1988), Guderjan (1991), and Tourtellot (e.g., Tourtellot et al 2003). Mapping of various segments of the outer portions of the city have also been accomplished independently by Tourtellot (e.g. Tourtellot et al 2003), Rose (2000), Robichaux (1995), Scarborough (1994), Kunen (Kunen and Hughbanks 2003), and others. At least nine sq. kilometers of this ancient city have been mapped. What emerges from this research is that at the time of its maximum size, during Late Classic 2, and Terminal Classic times, (roughly A.D. 730-900), La Milpa was a large urban area, a city, having a radius of ca. 5 km, and it had an estimated population density in the range of 730-900 persons per sq. km living within inhabitable areas (Robichaux 1995:285, 290; Hammond et al 1996:86; Tourtellot et al 2003). Using this data, and subtracting out areas of uninhabitable terrain within the five km radius area such as that of seasonally inundated *bajos* one is led to the conclusion that La Milpa had a total population of over 45,000 inhabitants. The city center of La Milpa, hereinafter referred to as the *central precinct*, had an area of ca. 0.45 sq. km. The central precinct contained the city's largest buildings, housed many of its most important people, and was the scene of important political, religious, and economic activities. However, it is clear that the vast majority of the population of La Milpa lived

not in the central precinct, but in the balance of the community that encompassed out to ca. five km away. I refer to this larger area as the *outer-city* (or *outer-town*, as the case may be). It is furthermore clear that imbedded at different locations within that five km radius area of La Milpa (Figure 3) were various nuclei of elite settlement such as Thompson's Group (Robichaux 1995), and Say Ka (Guderjan 1991; Houk and Lyndon 2005; Houk et al 2006). Without the benefit of the extensive mapping that has occurred at La Milpa, these nuclei would have been misinterpreted as "minor centers", or "satellites" of La Milpa, and considered separate settlements, distinct from La Milpa. These scattered elite nuclei within La Milpa seem, in Late Classic 2 and Terminal Classic times at least, to have functioned as overseers of particularly productive environmental resource zones present within the city. Undoubtedly these elite in the outer-city linked in some way to the city's rulership, and helped integrate the large population politically and economically. Beyond the city's ca. five km radius lay an area of reduced average population density, in the range of 175-200 persons per sq. km. (Robichaux 1995:259-260; Hammond et al 1996:86), which is considered rural in nature.

Excavations at various locations within the city of La Milpa indicate the first substantial human settlement in its immediate area occurred in the Late Preclassic period. Stelae citing the deeds of local kings began appearing at La Milpa during the Early Classic period as the community grew (Tourtellot et al 1994:122), and the city expanded outward to reach its maximum size, population, and complexity during the Late Classic period. Like virtually all sites in the Three Rivers Region, La Milpa was abandoned and largely uninhabited by A.D. 900.

Below La Milpa in the settlement hierarchy in the Belizean portion of the Three Rivers Region are at least nine sites that seem to be town-sized places, some larger, some smaller.



**Figure 3.** Map of the Belizean portion of the Three Rivers Region showing the locations of La Milpa, and the ancient towns discussed in the text

### Towns

These are sizable communities that would have been home to several thousand persons during Late Classic 2 and Terminal Classic times. They include Blue Creek on the Mennonite land, Gran Cacao, Great Savannah, Ma'ax Na, and Dos Hombres on the PFB land, Chan Chich, Punta de Cacao, and Quam Hill on the Gallon Jug property and San Jose on property to the south of the Gallon Jug property. All of these towns have central precincts containing a significant amount of monumental architecture, including public-function plazas, and sizable elite residential enclaves. Each has one or more ballcourts, and each has at least one stela present, with the exception of Quam Hill, where one or two stelae appear to have been looted (Guderjan 1991). These town-sized places played a significant role in the settlement hierarchy of the region, serving as economic, political, and administrative intermediaries between

cities above them, and smaller settlement units below.

Wari Camp (Guderjan 1991; Levi 1997, 2003), on the Pfb land, may also be another town-sized site, but that determination awaits the publication of more data on it. Also, El Infierno (Guderjan 1991), on the Gallon Jug property near the Guatemala border, is possibly another town but there is too little data to confirm that now. The town-sized sites will now be discussed, beginning with Blue Creek.

### ***Blue Creek***

Mapped in various efforts by Nievens (1991), Guderjan (Guderjan et al 2003), and Lohse (1995), Blue Creek is perhaps the most thoroughly studied site in the region. Approximately 20 sq. km. surrounding the central precinct have been mapped over a 10-year period (Guderjan et al 2003:77), making it the most completely mapped site in the entire Three Rivers Region. A large amount of excavation in various parts of the town has occurred. This ancient town was mostly situated on high ground at the upper edge of an escarpment that overlooks the coastal plain of Belize to it east. Blue Creek is located near the point where the Rio Bravo and Booth's River join to form the Rio Hondo. Apparently a trading center dealing both with sites below it on the coastal plain, and other sites atop the escarpment, Blue Creek may have been wealthier than most other towns in the region. The site map (Guderjan et al 2003: 79) of Blue Creek shows that the town had component parts both on top of the escarpment and just below it on the coastal plain. In apparent contrast to Dos Hombres, which is discussed below, the Blue Creek map does not reveal much settlement on the intervening, steeply sloping escarpment itself. The settlement within Blue Creek tended to be in a patchy pattern, having various residential *barrios* (Guderjan

2003:82), with lightly inhabited zones being present between some of the barrios. This may be somewhat illusionary, however, because a part of the forest has been cleared at Blue Creek, making it possible that some structures within these lightly inhabited "buffer zones" were destroyed during the land clearing process. Examination of the site map indicates these barrios, or nuclei, are all located within a ca. four km radius of the central precinct, and I take that to be the approximate radius of the ancient town. These barrios appear, in some cases, to represent different social status groups, or mixtures of different social status groups, located in differing environmental zones. Guderjan (2003:79) indicates that some agricultural fields were present within the town limits. I have not found a published estimated population density for Blue Creek, and therefore cannot estimate its population. Nonetheless, Blue Creek seems to have been one of the largest towns in the Three Rivers Region.

It should be noted that construction at Blue Creek, in contrast with that at most sites in the region, seems to have peaked out during the Early Classic rather than the Late/Terminal Classic (Guderjan et al 2003:83), although the town continued to be occupied during those later periods.

### ***Great Savannah***

Very little data is available on this site, but it has been estimated to be similar in size to the better studied Gran Cacao (Adams 1995:5).

### ***Gran Cacao***

The only mapping done at this site has been in its central precinct. The size and complexity of the central precinct (Lohse 1995) indicates that Gran Cacao was a town-sized place, but we have no information on its radius, or population density. Ceramics recovered by Levi

(1994), Lohse (1995) and others in the central precinct indicate the site was occupied from Late Preclassic times until some point in the Terminal Classic. Lohse has recently conducted additional excavations at Grand Cacao in the ball court area (Lohse personal communication 2005).

### ***Ms'ax Na***

This appears to be a town-sized place, possibly a little smaller than most of the other towns in the region. The presently available map of the site (King and Shaw 2003, 2006; Shaw et al 2005) covers mainly the central precinct, and there is little knowledge of the town's outer areas, its spatial size, or its population density.

### ***Dos Hombres***

An approximately 6 sq. km. area of Dos Hombres has been mapped through the efforts of various archaeologists. The central precinct of this town was mapped by Houk (Houk 1996), and others. Various parcels of the outer portion of the ancient town have also been mapped independently by various archaeologists including Robichaux (1995), Lohse (2001), Hageman (Hageman and Lohse 2003), Walling (e.g., 2004, 2006) and Glabb (Glabb and Taylor 2005).

Based upon my surveys on top of the escarpment, to the west of the Dos Hombres central precinct, I estimated that Dos Hombres had a radius of approximately 3.5 km (Robichaux 1995:290). The steep Rio Bravo escarpment runs roughly north south through the town, ca. 1.5 km west of the central precinct. Studies by Stan Walling (2004) on the steeply inclined escarpment face show that it was densely settled during the Late Classic period, when dense overall settlement at Dos Hombres may have provoked people to occupy more difficult terrain zones. The settlement present on the escarpment continued outward to the west, on top of the escarpment in the area I

mapped, resulting in my estimate of a 3.5 km radius for the town. The estimated average population density in my surveys at Dos Hombres was ca. 500 persons per sq. km. Walling (2004:6) estimates the population of the ca. 0.7 sq. km. area he mapped and excavated on the escarpment as being ca. 850 inhabitants. This would appear to generate a density of about 1,200 persons per sq. km for this location, which he calls "Chawak But'o'ob". I have not found any other estimates of population density for Dos Hombres, but Lohse's map (Lohse 2001) of a 2.5 km long transect to the east of the central precinct shows heavy settlement in the outer 1.75 km of that transect. Settlement, overall, at Dos Hombres does have a somewhat patchy pattern, with, for example, little settlement being present within the broad, north-south trending flood plain of the Rio Bravo river which passes below the escarpment, within a kilometer west of the central precinct. A 3.5 km radius generates a total area of ca. 38 sq. km. for the town of Dos Hombres. If one estimates that 40% of that area was uninhabitable then that leaves (river flood plain/bajos/marsh/etc), about 23 sq. km of inhabitable land. If we use an average population density for that area of 500 persons per sq. km, we arrive at an estimated total population of 11,400 inhabitants for Dos Hombres during Late Classic 2 times.

Excavations show the Maya first settled the Dos Hombres area during the Middle Preclassic, but significant construction did not begin there until the Late Preclassic times. Construction and population appear to have reached their maximum at Dos Hombres during Late Classic 2 and Terminal Classic times. It was abandoned by the end of the Terminal Classic period.

### ***Chan Chich***

A ca. 2sq. km area of Chan Chich has been mapped, most of it being in the town's central precinct (Houk and Robichaux 1996; Houk 1998, 2000). Thus we have no knowledge of the town's radius, or its average population density, and overall population. Construction began at Chan Chich in the Middle Preclassic at the location that later became the center of the town. The Late Preclassic and the Late Classic appear to have been the periods when most construction occurred at Chan Chich. It was abandoned by the end of the Terminal Classic period

### ***Punta de Cacao***

A continuous 3.9 sq. km area extending outward from the central precinct of Punta de Cacao has been mapped (Guderjan 1991; Robichaux et al 2002; Robichaux and Miller 2003; Robichaux 2005a, 2005b). The mapped zone extending to the west of the central precinct suggests this ancient town may have had a radius of ca. 2.2 kilometers. An estimated average population density of 401 persons per sq. km. for the town has been computed, indicating that Punta de Cacao had a total population in the vicinity of 6,000 persons during the Late Classic 2 period, the apparent time of its maximum size and population.

Maya peoples were present near the center of the later town during Middle Preclassic times. Most of the construction in the central precinct of the site took place during the Late Preclassic and Late/Terminal Classic periods. Preliminary indications are that the outer-town was largely constructed and occupied in Late Classic 2 and Terminal Classic times. Punta de Cacao was abandoned by the end of the Terminal Classic.

### ***Quam Hill***

This site was located near the property line separating the PfB and Gallon Jug properties. Based upon Guderjan's map and comments concerning its central precinct (Guderjan 1991), Quam Hill may be a sizable town. Other than the mapping of part of the central precinct, no research has been done at Quam Hill, and we know nothing of its radius, or average population density.

### ***San Jose***

Thompson (1939) limited his mapping and excavations at this site solely to the central precinct, as was the custom then. Based upon his map, San Jose appears to have been a small town-sized site. We have no information on its radius, population density, etc. Some of the construction of large structures at San Jose occurred during Late Classic 2 and Terminal Classic times.

While varying in size, towns-sized places had several thousand inhabitants living in them during Late Classic 2 and Terminal Classic time, and they helped provide an organizational framework for populations living in the region. Also present in the Three Rivers Region were nucleation of population that were smaller than towns. These will be considered next.

### ***Smaller Nucleations***

These were separate communities of smaller size, below the status of towns, where the total population probably amounted to less than 1000 persons. Based upon their apparent size we can label them villages, however, their occupants were less egalitarian than those of villages in many other cultures. Among their number are Las Abejas (Sullivan 1997) and Dos Barbaras (Lewis 2003) on the PfB property, and the E'kenha, Gallon Jug, and Laguna Seca sites on the Gallon Jug property (Guderjan 1991). There are probably many more of these

smaller nucleations remaining to be discovered. They seem to consist of a few larger, upper social class type structures, with surrounding smaller residences that, to this point, have not been well mapped. These smaller nucleations are located beyond the boundaries of larger cities and towns, and appear to be distinct from rural areas. Unfortunately, the general lack of extensive mapping around any of these sites impedes further description. Note that Thompson's Group and Say Ka, cited earlier, are not included here as "smaller nucleations" since they are embedded within the La Milpa outer-city zone and were therefore components of the city of La Milpa, at least during Late Classic 2 and Terminal Classic times.

### **Rural Areas**

As has already been noted, rural areas have a lower population density, and are present beyond and away from population nucleations, or urban zones. Data from various regions, including the Three Rivers Region, suggest that the rural ancient Maya populations had a density in the approximate range of 150-200 persons per sq. km during Classic times (Rice and Culbert 1990:26; Culbert et al 1990:116; Robichaux 1995:186, 222, 259-260; Hammond et al 1996:86). The inhabitants of rural areas can probably be rightly considered as "country folk", having a somewhat different culture than urban Maya, being more independent, and less accountable to the prevailing political "authority" than people within the urban areas.

Rural settlement has been mapped on the immediate outskirts of La Milpa and Dos Hombres, and at other locations within the PFB land. In particular, Sunahara and Meadows (2005) have mapped and excavated in largely rural areas beginning directly to the west of Dos Hombres and

extending all the way to the Guatemala border. Reese-Taylor has mapped and excavated in rural areas to the west of Ma'ax Na (Reese-Taylor 2003), and Hughbanks (Kunen and Hughbanks 2003) has mapped an apparently rural area he calls Guijarral located to the east of La Milpa. El Intruso (Brandon Lewis, personal communication 1992; Rene Munoz, personal communication 1994), Cabeza Verde (Lewis 2003), and the Medicinal Trail Site (Hyde 2005; Hyde et al 2006), in the same general area, also appear to be in a rural context. Hageman has mapped rural areas along the survey transect that was mapped between Dos Hombres and La Milpa (Hageman and Lohse 2003), and Glabb (Glabb and Taylor 2005) has commenced mapping of rural areas along a survey transect between Dos Hombres and Gran Cacao. The data from these efforts, as it is currently published, show that settlement in rural areas is not uniform, nor evenly distributed, with hamlets being present here and there, and isolated farmsteads elsewhere. Some environmentally difficult areas are largely uninhabited. A variety of house types, house sizes, spatial arrangements, and social classes are found in rural areas, but the overall structural and population density is characteristically low.

### **Observations**

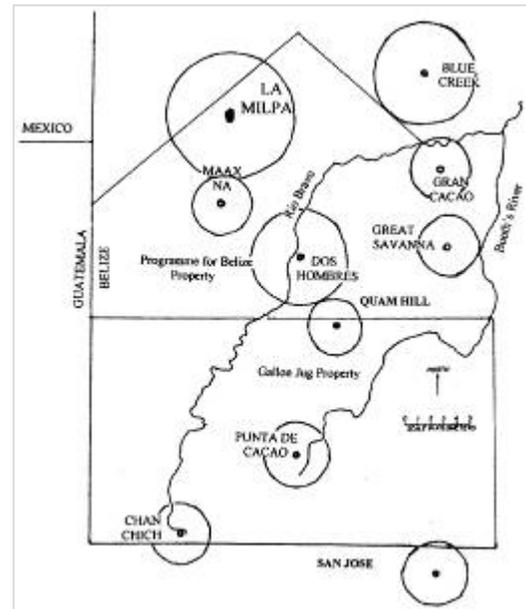
Surveys in the modern period of archaeological research in the Three Rivers Region have produced a large amount of data that illuminate many aspects of ancient Maya settlement and culture. The data indicate Maya peoples first migrated into the region during Middle Preclassic times. These pioneering farming peoples, having little competition, settled where they perceived to be the "best" places. They succeeded, grew in population, and spread out spatially. Gradually, with time, they adapted to many different environmental

niches and came to fill much of the landscape, including some less than optimum locations. The appearance of communities of greater than village size seems to have widely begun during the Late Preclassic period. Many larger places got their start then. Most communities in the region seem to have had a lower level of growth during the Early Classic period, and also at the beginning of the Late Classic period, but this may be partly an aberration due to confusion relating to the dating of certain ceramic types (Fred Valdez, Jr., Lauren Sullivan, Kerry Sagebiel, personal communications 2005). The Three Rivers Region reached its maximum population and settlement size, as well as its highest political and economic complexity during Late Classic 2 and Terminal Classic times. This apogee lasted less than 150 years. With almost no exceptions, the cities, towns, villages, hamlets, and rural areas in the Three Rivers Region became uninhabited by ca. A.D. 900, and the region has largely remained so until today.

Our best knowledge of what towns and cities were like comes from the Late Classic 2, and Terminal Classic periods because most of the ruins visible on the surface at most of the sites in the region date to that time. Thus, the spatial sizes and population's densities we compute for La Milpa, Dos Hombres, Punta de Cacao, and other urban areas are mostly applicable to that time.

We can state with confidence that ancient Maya cities and towns existed, and that individually they extended out over rather large areas. In the Three Rivers Region of Belize, La Milpa was the largest urban place, with a radius of ca. 5 kms. Blue Creek and Dos Hombres may have been the largest towns. By way of comparison with other regions, the site of Caracol in west, central Belize seems to have extended outward to ca. 7 km from its

central precinct (Chase and Chase 1994:2), and Tikal in the Peten of Guatemala, appears to have had a radius of ca. 6 km (Culbert et al 1990). Figure 4 is a map showing the city of La Milpa and the towns present in the Belizean portion of the Three Rivers Region. For each, a circle has been drawn around its central precinct with the radius based either on survey data (La Milpa, Blue Creek, Dos Hombres, and Punta de Cacao), or with an assumed radius of 2.2 km, for all other towns, based upon the apparent approximate radius of Punta de Cacao, a smaller town. This map shows that a sizable portion of the Three Rivers Region was urban in character. Although an idealized circular form has been used to depict urban areas, it is recognized that the shape of a city or town was frequently irregular, and not circular as shown, due to environmental or other reasons.



**Figure 4.** Schematic map of the ancient city of La Milpa showing the *central precinct* and *outer-city* portions of the site, as well as the locations of two elite nuclei (Thompson's Group and Say Ka) situated within the outer city. The La Milpa city extends outward up to the 5 km radius circle shown. The surrounding rural zone is also shown.

The population density within urban areas in the Three Rivers Regions during Late Classic 2 times varied within the approximate range of 400-800 persons per sq. km, with the most densely settled place evidently being La Milpa.

Cities and towns can be characterized as having had two principal components, the central precinct, and the balance of the community, i.e., the outer-city, or outer-town, where most of the population resided. There seems to have been a rough correlation between the size of a city's central precinct and the size of its outer-city. Based upon the data from within the Three Rivers Region, and from elsewhere in the Maya lowlands (e.g., Tikal and Caracol), we know that the outer-city had within it, at various distances from the central precinct, elite settlement nucleations which likely oversaw activities in their section of the city on behalf of the polity rulership.

I interpret this pattern of ancient Maya urban settlement to be most consistent with what geographers have labeled the *multi-nuclei* model of urban settlement (Harris and Ullman 1945), wherein the city is divided into a number of functional areas, or nuclei, that are integrated in some way to promote the city's functioning and survival. These various nuclei within the community urban area may serve political, economic, social, religious, military (e.g. defensive), water-management, administrative, or other functions. These various nuclei located throughout the city were physically integrated through mediums such as elevated causeways, customary paths or walkways, natural waterways, artificial waterways, etc. This model can be especially helpful in sorting out the dynamics and functioning of an ancient Maya community.

Political relationships and linkages between cities and towns within the Three

Rivers Region has been discussed elsewhere (e.g., Adams 1999; Robichaux 2000, 2002, 2004; Adams et al 2004), and will only be briefly considered here. Notwithstanding frequent arguments to the contrary, the totality of data from the region, and elsewhere, including settlement analysis, epigraphy, iconography, etc., strongly indicates that a nested, hierarchical relationship between cities, towns and smaller nucleations prevailed. Clearly, in the Belize half of the Three Rivers Region, La Milpa was the dominant place during Late Classic 2 times, and it must have dominated most of the nearer towns, and lower levels of settlement. The people with the greatest freedom from the hierarchical framework were probably rural farmers located away from the urban areas.

Epigraphic data from various Maya regions indicate that a political ordering of the lords who ruled the various Maya cities, towns, and small places existed. In the Three Rivers region, a plate fragment found at Dos Hombres has the *u-yahaw* glyph as part of its text (Robichaux and Houk 2005). It indicates the subordination of a lord at one location to the lord at another location. The texts and/or scenes depicted on a large number of stelae throughout the Maya lowlands, including La Milpa, indicate that militarism was a strong component of the Classic period Maya culture. Kings armed with spear and shield is a common motif. Kings frequently are shown standing on prisoners from other sites. Texts proclaim victories over other locations. Painted pots have court scenes depicting scowling rulers glaring down at tied captives who are guarded by armed persons. Some sculptural and painted vessel scenes show lines of warriors armed with spears, all identically dressed, i.e., wearing uniforms. Other pots and murals show battles fully engaged. Other media, including common graffiti, show prisoners undergoing various forms of

torture and physical abuse. It is, thus, beyond doubt that *force* was a frequent instrument of ancient Maya political policy. Such force, controlled by the ruler of a city, or larger polity, was certainly applied externally against other polities, and it was also available as well to be used internally within a city or larger polity. Force intimidates those who have less. It is, in general, very unlikely that smaller places had more military power than larger places these settlement units. The collapse of Maya civilization in the Three Rivers Region was complete, resulting in the region becoming virtually uninhabited by humans. It seems likely that the data already in hand must shed some direct light on the process by which this dramatic collapse occurred, but the task of extracting and distilling that information largely remains to be done.

Although the Three Rivers Region has become one of the more intensely studied regions in the Maya lowlands, the data accumulated there has yet to be adequately disseminated to, and absorbed by the larger community of scholars studying the ancient Maya. For instance, a recent publication summarizing what is known about the ancient Maya (Demarest 2004) appears not to mention the Three Rivers Region explicitly, nor even the large city of La Milpa.

Nonetheless, the intense level of archaeological research that has taken place in the Belizean half of the Three Rivers Region during the last 15 years has truly produced, and continues to produce, a treasure of data, which is now becoming available to scholars.

*Acknowledgements* I would like to express my sincere thanks to Drs. Jaime Awe and John Morris, and their staff at the Belize Government's Institute of Archaeology, for their support of our work at Punta de Cacao and for the opportunity to participate in the

Belize Archaeology Symposium 2005. Barry Bowen, the Chan Chich Lodge, and many financial supporters in the United States have made our research at Punta de Cacao a practical reality, and I am very appreciative of their generosity. I would like to thank archaeologists Drs. Richard E.W. Adams, Fred Valdez, Jr., Brett Houk, William Folan, Joel Gunn, and Thomas Guderjan for their generous support over many years. Fred Valdez was particularly generous in providing data for this paper concerning survey work on the PFB land. Gair Tourtellot has also been helpful in sharing information about the ancient city of La Milpa. Kay Sunahara and Richard Meadows provided me a copy of their paper describing their surveys and excavations to the west of Dos Hombres. I owe a great deal to the University of the Incarnate Word for their overwhelming support of the Punta de Cacao project in Belize. Lastly, I thank my wife, Cathy, and Jenny, and my daughters, Marlene and Jackie, and their families, for their support.

### Reference Cited

- Adams, Richard E.W.  
1995 Introduction. In *The Programme for Belize Archaeological Project: 1994 Interim Report. The 1994 Interim Report*, edited by R.E.W. Adams and Fred Valdez, Jr., pp1-14, The Center for Archaeology and Tropical Studies and the University of Texas at San Antonio
- 1999 *Rio Azul, An Ancient Maya City*. University of Oklahoma Press, Norman
- Adams, Richard E.W., and Fred Valdez, Jr. (editors)  
2003 *Ixcanrio Research Reports 1 & 2: The 1990 and 1991 Seasons*. The University of Texas at San Antonio
- Adams, Richard E.W., Hubert R. Robichaux, Fred Valdez, Jr., Brett A. Houk, and Ruth Mathews  
2004 Transformations, Periodicity, and Urban Development in the Three Rivers Region. In *The Terminal Classic in the Maya*

- Lowlands: Collapse, Transition, and Transformation*, edited by Arthur A. Demarest, Prudence M. Rice, and Don S. Rice. University Press of Colorado, Boulder
- Chase, Diane Z., and Arlen F. Chase  
1994 Details in the Archaeology of Caracol, Belize: An Introduction. In *Studies in the Archaeology of Caracol, Belize*, edited by D. Chase and A. Chase, pp 1-11. Pre-Columbian Art Research Institute, Monograph 7, San Francisco, California
- Culbert, T. Patrick, Laura J. Kosakowsky, Robert E. Fry, and William A. Haviland  
1990 The Population of Tikal, Guatemala. In *Pre-Columbian Population History in the Maya Lowlands*, edited by T. Patrick Culbert and Don Rice, pp.103-122. University of New Mexico Press, Albuquerque
- Demarest, Arthur  
2004 *Ancient Maya: The Rise and Fall of a Rainforest Civilization*. Cambridge University Press
- Ford, Anabel, and Scott Fedick  
1988 *Draft Report on the Archaeological Resource Potential and Management of the Programme for Belize Lands, Orange Walk, Belize*. Mesoamerican Research Center. Social Process Research Institute. University of California, Santa Barbara
- Glaab, Rigden A., and Chrissy Taylor  
2005 Dos Hombres-Gran Cacao Intersite Research: The 2004 Mapping Season. In *Programme for Belize Archaeological Project: Report of Activities from the 2004 Field Season*, edited by Fred Valdez, Jr., pp 35-44, Occasional Papers, Number 4, Mesoamerican Archaeological Research Laboratory, The University of Texas at Austin
- Guderjan, Thomas H. (editor)  
1991 *Maya Settlement in Northwestern Belize: The 1988 and 1990 Seasons of the Río Bravo Archaeological Project*. Maya Research Program, San Antonio, Texas, and Labyrinthos, Culver City, California  
2004 *The Spatial Arrangement of a Maya City*. Document submitted to Geographic Review. Department of Sociology, CJ, and Anthropology, TCU, Ft. Worth, Texas
- Guderjan, Thomas H., Jeffrey Baker, and Robert Lichtenstein  
2003 Environmental and Cultural Diversity at Blue Creek. In *Heterarchy, Political Economy, and the Ancient Maya*, edited by V. Scarborough, and F. Valdez, Jr., pp 77-91, The University of Arizona Press, Tucson
- Hageman, Jon B., and Jon C. Lohse  
2003 Heterarchy, Corporate Groups, and Late Classic Resource Management in Northwestern Belize. In *Heterarchy, Political Economy, and the Ancient Maya*, edited by V. Scarborough and F. Valdez, Jr., pp 109-121, The University of Arizona, Tucson
- Hammond, Norman  
1991 *The Discovery of La Milpa*. *Mexicon* 13: 46-50
- Hammond, Norman, Gair Tourtellot, Sara Donaghey, and Amanda Clarke  
1996 Survey and Excavation at La Milpa, Belize, 1996. *Mexicon* 18(5): 86-90
- Harris, Chauncy, and Edward Ullman  
1945 The Nature of Cities. *Annals of the American Academy of Political and Social Sciences* 242:7-17
- Houk, Brett A. (editor)  
1998 *The 1997 Season of the Chan Chich Archaeological Project*. Papers of the Chan Chich Archeological Project, Number 3. Center for Maya Studies, San Antonio, Texas  
2000 *The 1998 and 1999 Seasons of the Chan Chich Archaeological Project*. Papers of the Chan Chich Archeological Project, Number 4, Mesoamerican Archaeological Research Laboratory. The University of Texas at Austin
- Houk, Brett A., and Hubert R. Robichaux (editors)  
1996 *The 1996 Season of the Chan Chich Archaeological Project*. Papers of the Chan Chich Archeological Project, Number 1. Center for Maya Studies, San Antonio, Texas
- Houk, Brett A., and Michael Lyndon

- 2005 The 2004 Investigations at Say Ka: A Pilot Project. In *Programme for Belize Archaeological Project: Report of Activities from the 2004 Field Season*, edited by Fred Valdez, Jr., pp 45-62, Occasional Papers, Number 4, Mesoamerican Archaeological Research Laboratory, The University of Texas at Austin
- Houk, Brett A., Rebecca E. Bria, and Shelly Fischbeck
- 2006 The 2005 Investigations at Say Kah, Belize. In *Programme for Belize Archaeological Project: Report of Activities from the 2005 Field Season*, edited by Fred Valdez, Jr., pp. 17-40. Occasional Papers, Number 6 Mesoamerican Archaeological Research Laboratory, The University of Texas at Austin
- Hyde, David M.
- 2005 Excavations at the Medicinal Trail Site: 2004. In *Programme for Belize Archaeological Project: Report of Activities from the 2004 Field Season*, edited by Fred Valdez, Jr., pp. 7-14. Occasional Papers, Number 4, Mesoamerican Archaeological Research Laboratory, The University of Texas
- Hyde, David M., Shelly Fishbeck, and Rissa Trachman
- 2006 Report of Excavations at the Medicinal Trail Site for the 2005 Season. In *Programme for Belize Archaeological Project: Report of Activities from the 2005 Field Season*, edited by Fred Valdez, Jr., pp. 7-16. Occasional Papers, Number 6, Mesoamerican Archaeological Research Laboratory, The University of Texas at Austin
- King, Eleanor M., and Leslie C. Shaw
- 2003 A Heterarchical Approach to Site Variability: The Maax Na Archaeological Project. In *Heterarchy, Political Economy, and the Ancient Maya*, edited by V. Scarborough and F. Valdez, Jr., pp 64-76, The University of Arizona Press, Tucson
- 2006 Preliminary Report of Fieldwork at Maax Na, Belize, 2005. In *Programme for Belize Archaeological Project: Report of Activities from the 2005 Field Season*, edited by Fred Valdez, Jr., pp. 89-98. Occasional Papers, Number 6, Mesoamerican Archaeological Research Laboratory, The University of Texas at Austin
- Kunen, Julie L., and Paul J. Highbanks
- 2003 Bajo Communities as Resource Specialists: A Heterarchical Approach to Socioeconomic Organization. In *Heterarchy, Political Economy, and the Ancient Maya*, edited by V. Scarborough and F. Valdez, Jr, pp 92-108, The University of Arizona Press, Tucson
- Lewis, Brandon
- 2003 Environmental Heterogeneity and Occupational Specialization: An Examination of Lithic Tool Production in the Three Rivers Region of the Northeastern Peten. In *Heterarchy, Political Economy, and the Ancient Maya*, edited by Vernon L. Scarborough, Fred Valdez, Jr., and Nicholas Dunning, pp. 122-135. The University of Arizona Press, Tucson
- 2005 Research at Dos Barbaras: An Overview. In *Programme for Belize Archaeological Project: Report of Activities from the 2004 Field Season*, edited by Fred Valdez, Jr., pp145-158, Occasional Papers, Number 4, Mesoamerican Archaeological Research Laboratory, The University of Texas at Austin
- Levi, Laura J.
- 1995 Site Map, Evaluation of Salvaged Ceramics, and Artifact Storage Data; Site RB-43, Programme for Belize Lands. In *The Programme for Belize Archeological Project: 1993 Field Season*, edited by R.E.W. Adams. The University of Texas, San Antonio
- 1997 *Statement of Findings of the 1997 PFB Regional Residential Survey*. Unpublished manuscript in the possession of the author. University of Texas at San Antonio
- 2003 *The PfbARP Regional Residential Survey: Project Summary and Report of Fieldwork in 2002*. Unpublished manuscript in the possession of the author. University of Texas at San Antonio
- Lohse, Jon C.
- 1995 Results of Survey and Mapping during the 1994 Pfb Season at Gran Cacao. In *The Programme for Belize Archaeological*

- Project: 1994 Interim Report*, edited by R.E.W. Adams and Fred Valdez, Jr., pp. 106-114. The Center for Archaeology and Tropical Studies and The University of Texas at San Antonio
- 2001 *The Social Organization of A Late Classic Maya Community: Dos Hombres, Northwestern Belize*. Ph.D. dissertation, The University of Texas at Austin
- Marcus, Joyce  
1983 On the Nature of the Mesoamerican City. In *Prehistoric Settlement Patterns*, edited by E. Vogt and R. Leventhal, pp. 195-242, University of New Mexico Press, Albuquerque
- Montgomery, John  
2002 *How to Read Maya Hieroglyphs*. Hippo crème Books, Inc., New York, NY
- Reese-Taylor, Kathy  
2003 *Western Escarpment Survey and Archaeological Project*. Unpublished manuscript in the possession of the author.
- Rice, Don S., and T. Patrick Culbert  
1990 *Historical Contexts for Population Reconstruction in the Maya Lowlands*. University of New Mexico Press, Albuquerque
- Robichaux, Hubert R.  
1995 *Ancient Maya Community Patterns in Northwestern Belize: Peripheral Zone Survey at La Milpa and Dos Hombres*. Unpublished Doctoral Dissertation, The University of Texas at Austin
- 2000 The Stelae of Rio Azul, Guatemala. In *Rio Azul Reports, Number 5, The 1987 Season*, edited by R.E.W. Adams, pp 35-53. The University of Texas at San Antonio
- 2002 Aspectos de la Organización de Asentamiento de los Mayas Antiguos en la Región de los Tres Ríos en Guatemala Noreste y Belice Noroeste: Una Vista de la Tercera Fila de la Jerarquía de Asentamiento. In *Los Investigadores de la Cultura Maya*, 11 Tomo 1, pp. 168-179, Universidad Autónoma de Campeche, Campeche, México
- 2004 The Ancient Community of Punta de Cacao, Belize, and Its Place in the Prehistory and History of the Three Rivers Region: The 2003 Field Season of Punta de Cacao Archaeology Project. *Research Reports in Belizean Archaeology*, Vol. 1: pp.197-209
- Robichaux, Hubert R. (editor)  
2005a *Punta de Cacao Archaeological Project: An Interim Report on the 2003 Field Season*. University of the Incarnate Word, San Antonio, Texas
- 2005b *Punta de Cacao Archaeological Project: a Preliminary Report on the 2004 Field Season*. University of the Incarnate Word, San Antonio, Texas
- Robichaux, Hubert R., Alexandra Miller, Evans Roberts III, Candace Pruett, Benjamin Smyth, E. Thomas O'Brien, Fred Valdez, Jr., and Robynne R. Valdez  
2002 *Preliminary Report: The 2001 Season of the Punta de Cacao Archaeological Project*. University of the Incarnate Word, San Antonio, Texas
- Robichaux, Hubert R., and Alexandra Miller (editors)  
2003 *Punta de Cacao Archaeological Project: Interim Report on the 2002 Field Season*, University of the Incarnate Word, San Antonio, Texas
- Robichaux, Hubert R., and Brett A. Houk  
2005 *A Hieroglyphic Plate Fragment from Dos Hombres, Belize: Epigraphic and Archaeological Evidence Relating to Political Organization in the Three Rivers Region of Northwestern Belize and Northeastern Guatemala*. Mono y Conejo, Journal of the Mesoamerican Archaeological Research Laboratory, Volume 3, pp. 4-12, University of Texas at Austin
- Rose, John J.  
2000 *A Study of Late Classic Population Growth at La Milpa, Belize*. Ph.D. Dissertation, University of Pittsburgh
- Scarborough, Vernon L.  
1994 Maya Water Management. *National Geographic Research and Exploration* 10(2):184-199

- Shaw, Leslie, Eleanor King, and Beverly Chiarulli  
2005 Research at Ma'ax Na, Belize: Report on the 2004 Field Season. In *Programme for Belize Archaeological Project: Report of Activities from the 2004 Field Season*, edited by Fred Valdez, Jr., pp 97-114, Occasional Papers Number 4, Mesoamerican Archaeological Research Laboratory, The University of Texas at Austin
- Sprajc, Ivan  
2001 *Archaeological Reconnaissance in Southeastern Campeche, Mexico*. Scientific Research Center of the Slovenian Academy of Sciences and Arts, Ljubljana
- Sullivan, Lauren A.  
1997 *Classic Maya Social Organization: A Perspective from Las Abejas*. Ph.D. Dissertation, University of Texas at Austin
- Sunahara, Kay S., and Richard K. Meadows  
2005 Modeling Ancient Maya Non-Urban Complexity in Northwest Belize: A Working Paper. In *Programme for Belize Archaeological Project: Report of Activities from the 2004 Field Season*, edited by Fred Valdez, Jr., pp 63-96. Occasional Papers, Number 4, Mesoamerican Archaeological Research Laboratory, The University of Texas at Austin
- Thompson, J. Eric S.  
1939 *Excavations at San Jose, British Honduras*. Carnegie Institution of Washington, D.C.  
  
1963 *Maya Archaeologist*. University of Oklahoma Press, Norman
- Tourtellot, Gair III, John J. Rose, Nikolai Grube, Sara Donaghey, and Norman Hammond  
1994 *More Light on La Milpa: Maya settlement archaeology in northwestern Belize*. *Mexicon* 16(6):119-124
- Tourtellot, Gair, Francisco Estrada Belli, John J. Rose, and Norman Hammond  
2003 Late Classic Maya Heterarchy, Hierarchy, and Landscape at La Milpa, Belize. In *Heterarchy, Political Economy, and the Ancient Maya*, edited by V. Scarborough, and F. Valdez, Jr., pp 37-51, The University of Arizona Press, Tucson
- Valdez, Fred, Jr. (editor)  
2005 *Programme for Belize Archaeological Project: Report of Activities from the 2004 Field Season*. Occasional Papers, Number 4, Mesoamerican Archaeological Research Laboratory, The University of Texas at Austin
- Walling, Stanley  
2004 *Archaeological Investigations at Chawak But'o'ob: Pre-Hispanic Settlement, Water Management, and Community Structure on the Rio Bravo Escarpment, Northern Belize*. Draft manuscript in the possession of the author, Department of Classics and General Humanities, Center for Archaeological Studies, Montclair State University, Upper Montclair, New Jersey
- Walling, Stanley, Peter Davis, Jonathan Hanna, Leah Matthews, Nahum Prasarn, and Christine Taylor  
2006 Residential Terracing, Water Management, Matrix Analysis, and Ceremonialism at Chawak Buto'o'ob, Belize: Report of the 2005 Rio. Bravo Archaeological Survey. In *Programme for Belize Archaeological Project: Report of Activities from the 2005 Field Season* edited by Fred Valdez, Jr., pp. 41-88. Occasional Papers, Number 6, Mesoamerican Archaeological Research Laboratory, The University of Texas at Austin

---

## 19 HINTERLAND SETTLEMENT IN NORTHWESTERN BELIZE: EXCAVATIONS AT THE MEDICINAL TRAIL SITE

David M. Hyde and Shelly L. Fischbeck

---

*The Medicinal Trail site is a hinterland settlement approximately 6 to 8 kilometers east of the major ceremonial center La Milpa. Located in the La Lucha uplands atop a ridge with numerous associated landscape modifications, the site consists of numerous courtyard and plazuela groups. Recent excavations have focused on an extended household group comprised of six mounds organized around three courtyards plus an additional mound slightly to the north. An elevated social status of the early inhabitants of the group is inferred by the recovery of exotic materials such as jade, obsidian, and granite, and by the construction of a Preclassic ceremonial round platform. These artifacts and features suggest that the occupants of this group were responsible for a variety of ritual activities in the hinterland. Results from surveying show extensive water and land management features, including terraces and depressions, indicating an agriculturally based economy. The research at the Medicinal Trail site is important because of the insights into hinterland socioeconomic organization.*

### Introduction

This paper provides an introduction to an overview of excavations conducted at a small household group located 5 to 8 km east of La Milpa in the Three Rivers region, an arbitrarily defined archaeological and geographic area that encompasses nearly 2000 km<sup>2</sup> of northeastern Guatemala and northwestern Belize (Adams 1995; Robichaux et al. 2001). The group is part of a community referred to as the Medicinal Trail Site, which consists of a few formal courtyard groups, numerous informal clusters of mounds and multiple landscape modifications such as terraces, depressions, and linear features. The site is located in the La Lucha uplands atop a ridge, and can be characterized as a terraced community (Scarborough and Valdez 2003). The site extends from the Turtle Pond to the west, located in the Programme for Belize's La Milpa Research Station facility, and the escarpment to the east.

The first excavations at the site were conducted in 2002 by Laura Ferries (2002) and Danica Farnand (2002) and consisted of two separate studies that investigated mounds (Op5) and terraces (Op6)

respectively. In 2004 Jennifer Chmilar (2005a, 2005b) excavated the Turtle Pond (Op8), a seasonally inundated depression at the base of a slope west of the site. Since 2004 excavations have been conducted at the largest group so far identified at the Medicinal Trail site, referred to as Operation 7 (Op7).

Op7 was located by members of the Programme for Belize Archaeological Project while on survey in January of 2004, with excavations beginning the next month and continuing in 2005 and 2006. Op7 consists of six mounds distributed around three contiguous courtyards aligned on a north-south axis, and one additional mound to the north (Figure 1). At least four depressions have been identified immediately flanking Op7 on three sides, and there are many terraces, presumably related to agriculture, extending across the slopes moving away from the site center towards the Turtle Pond to the west, and towards the escarpment to the east. Ceramics recovered from the site indicate an occupation lasting from at least the Late Preclassic through the Late Classic (Lauren Sullivan, personal communication 2005).

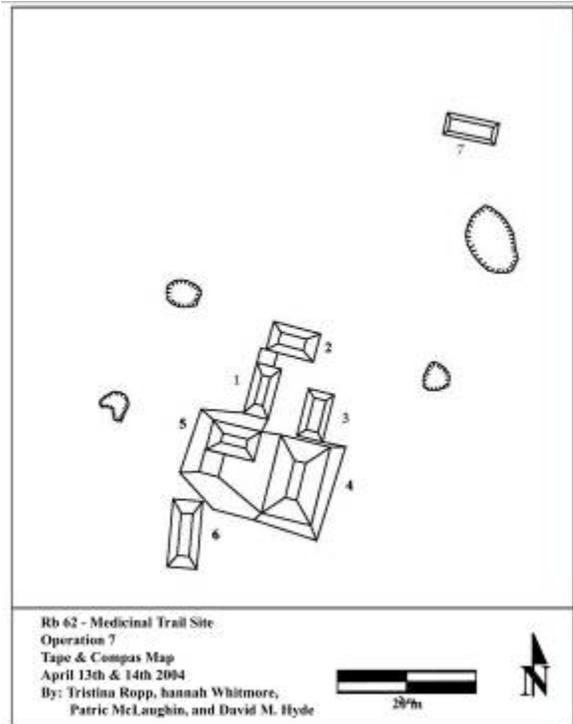


Figure 1. Map of Operation 7

### Environmental Setting

Escarpmnts, uplands, and *bajos* (seasonal swamps) characterize the karstic environment of the Three Rivers region (Brokaw and Mallory 1989). Three terraced uplands, faced by steep escarpments with increasing elevations from east to west, form the dominant topographic features in the area (Houk 2000). Formed by a series of southwest-to-northeast-trending fault lines; from east to west the three terraces are the Booth's River Escarpment, the Rio Bravo Escarpment, and the La Lucha Escarpment (Houk 2000; Sullivan 2002; Figures 2 and 3). The upland terraces are generally undulating with broadly rounded hills and stretches of level ground (Houk 2000).

The three rivers from which the region takes its name drain the study area. The Río Azul generally only flows during the rainy season, while the Booth's River and the Rio Bravo flow year round. The Río Azul begins approximately 28 km northeast of the site of Tikal in the central Petén,

Guatemala, and flows from southwest to northeast towards Mexico, eventually joining the Rio Hondo and flowing east into Chetumal Bay.

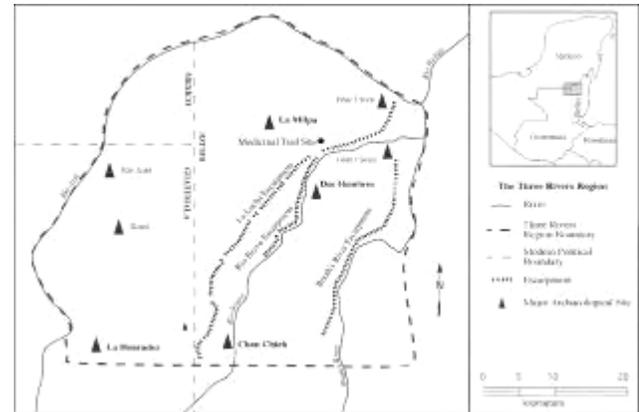


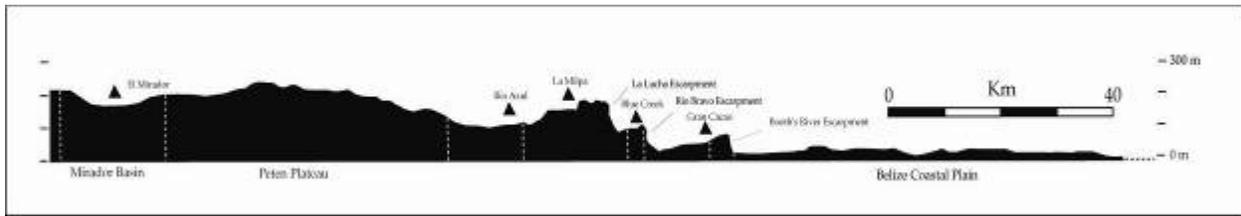
Figure 2. Physiography of the Three Rivers region. (Courtesy of PfBAP, adapted from Houk [1996])

### The Medicinal Trail Site

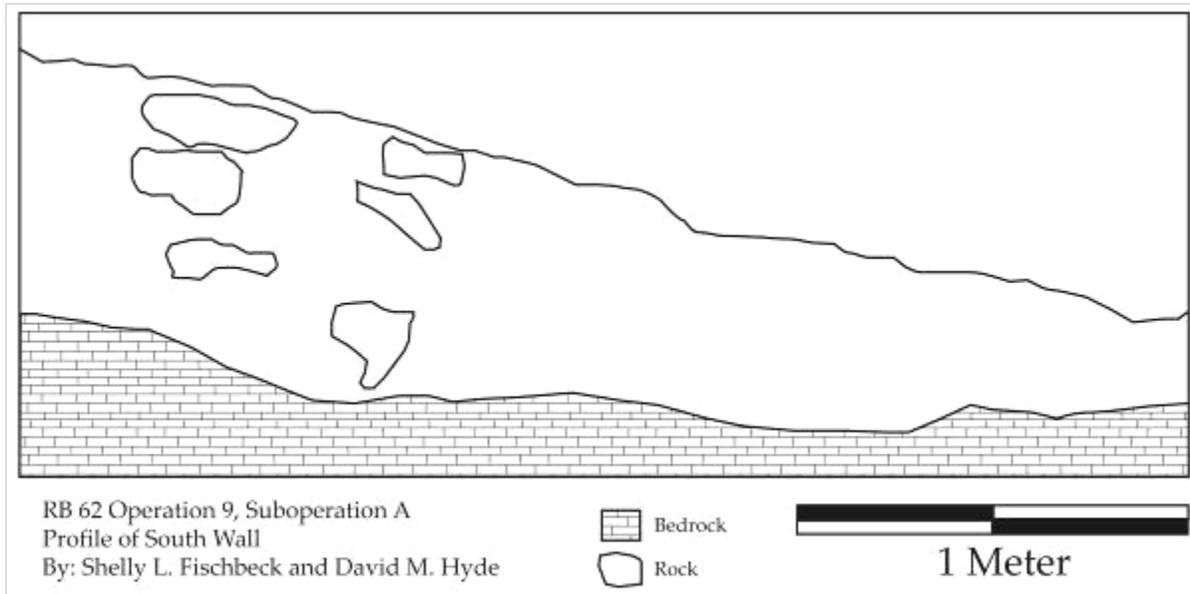
Throughout the Medicinal Trail Site community numerous terraces, linear mounds, and depressions have been located. The terraces run both perpendicular and parallel to the slope, and many end at depressions suggesting both agricultural, erosion control, and water management functions.

Extensive excavations to the west and east of the northern and central courtyards have revealed evidence for landscape modification. The bedrock in these areas slopes downward from north to south and the area was stripped of sediment down to bedrock. Next fill, or in some cases re-deposited midden material, was laid on this exposed surface artificially leveling these areas. This was followed by the construction of an evenly laid, compact prepared surface that converged with the group's structures.

Numerous terraces have been identified on the slopes leading away from Op7. Danica Farnand (2002) excavated four terrace features along the tourist trail portion of the site in 2002. All dated to the Late Classic period based on recovered ceramics.



**Figure 3.** Elevation transect from the northern Caribbean coast of Belize to the Mirador Basin in the northern Peten. (From Dunning et al. 2002).



**Figure 4.** Profile of Terrace Excavation.

Of the four, she identified two as agricultural in function and one as a water control feature, while the fourth appears to be structural.

Additional terrace excavations took place .5 kilometers downslope, west of Op7 in the 2005 field season. The terrace wall consists of two rows of large stones with smaller cobbles between them (Figure 4). The preserved portion of the wall is approximately 80 cm tall and 80 cm thick. Additional large stones down slope from the terrace wall suggest that the original wall was taller but has since collapsed. A similar construction is seen in one of the agricultural terraces identified by Farnand (2002). The high percentage of lithic debitage behind, within, and in front of the terrace wall is of particular interest. Large

cortical flakes were found throughout the excavation, increasing in number with depth. These flakes may have been intentionally placed in the terraces to enhance the drainage of the clayey terrace soils (Healy et al. 1983: 405). Additional excavations are needed to determine the terrace functions and their construction history.

Numerous depressions are dotted throughout the Medicinal Trail site, including four in proximity to Op7. The two depressions immediately west of Op7 were extensively excavated in 2004 and will be reported on later by John Lowe as his Master's thesis. The largest of the depressions at Op7, located just southeast of structure seven, has been excavated and

reported on by Yoav Me-Bar (2005) and Jeff Brewer (2005).

### Northern Courtyard

The northern courtyard group consists of three mounds, one each on the west and east sides and one to the north offset to the west slightly. Not visible on the surface are two additional mounds, both dating to the Late Preclassic.

Structure 1 is located on the western side of the courtyard and dates to the Late Classic based on recovered ceramics (Figure 5). The outside of the building is about 8m long by 4m deep while the interior space is approximately 5m wide by 3m deep. The doorway is a little less than 2m across and the walls are on average 80 cm thick. There is a plaster bench in the northwest corner of the structure against the back wall extending north south.

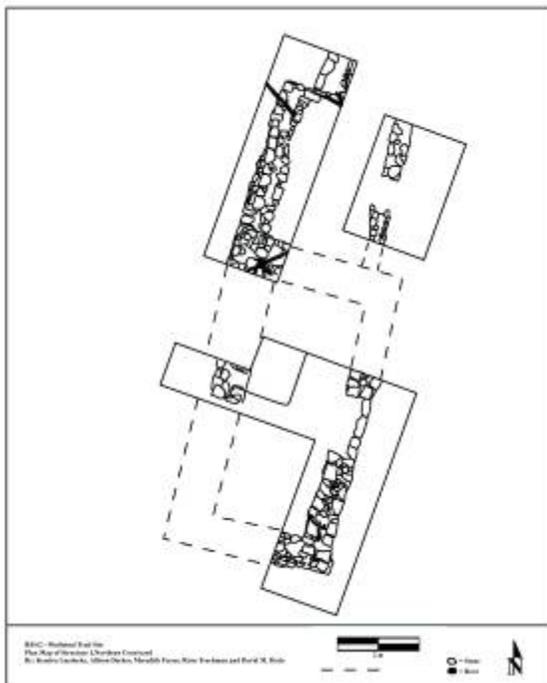


Figure 5. Plan Map of Structures 1 and 2.

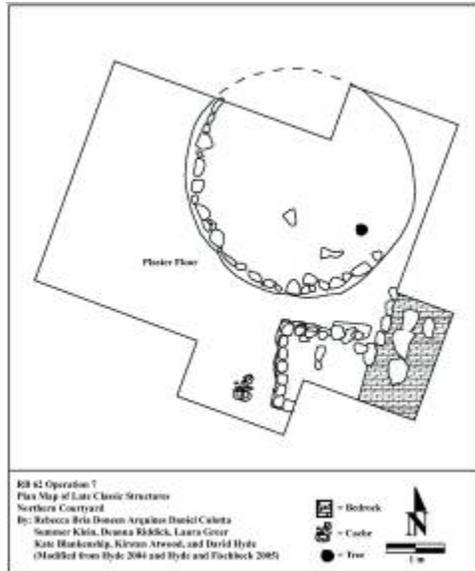
There is a low-walled platform with ancillary structure extending north off of Structure 1, towards Structure 2, facing the courtyard (Figure 6). This ancillary structure likely had wattle and daub walls above the

masonry walls, and topped with a thatched roof. The ancillary structure appears to have been added to the courtyard later. Initially a freestanding low wall extended north off of Structure 1, ending slightly west of Structure 2. Then at a later date it was attached to Structure 2 and filled in to the east to create a platform for the construction of the ancillary structure.

In the center of the northern courtyard excavations revealed a Late Preclassic plaster floor and two additional platforms (Figure 6). Intruding into this floor were two nested Late Preclassic Sierra Red vessels. Excavation of the plaster floor revealed that this cache was positioned over the northwest corner of a square platform. Resting on another plaster floor the square platform is slightly less than 1 ½ meters on a side with remnant red painted. A cache consisting of three sets of lip-to-lip Sierra Red vessels was discovered to the west of the platform. The vessels were broken in place although it is difficult to say whether this was intentional or not. Since the cache underlies a Late Preclassic floor that covered the Northern Courtyard the plaster floor may have been cut through to allow placement of the cache, and then re-plastered. This plaster floor was clearly present in the southeastern portion of the unit, but only the most tenuous remains of plaster remained in the western portion overlying the cache. Intrusive tree roots may have played a role in this absence of a clear plaster floor.

On the same plaster floor as the round structure and approximately 50 cm north is a round structure nearly 4m in diameter, and 40 cm tall resting on a plaster floor. There is some indication that on the west side of the platform there were two stairs. No plaster or postholes were found on top. Excavations inside the platform revealed nearly 2m of construction fill down to bedrock. Under the fill resting on bedrock was a secondary burial with at least two

ceramic vessels. The skeletal remains were covered with *sascab* cementing them to the bedrock, making recovery exceedingly difficult.



**Figure 6.** Plan Map of the Pre-Classic Structures at Op7

The Late Preclassic plaster floor was removed prehistorically or never existed east of the round structure and rectangular platform (Figure 6). At the edge of the square platform the plaster floor abruptly ends and along the plaster edge is a row of stones that extends north towards the round structure. To the east of the plaster floor is an alignment of large, flat-topped stones rectangular or oval in shape approximately 50 cm in length. The area east of this stone alignment was excavated down to bedrock. Interestingly, the bedrock here is approximately 30 cm below the plaster floor whereas bedrock is nearly 1.5 m down under the round structure.

### Central Courtyard

The Central Courtyard consists of two structures on an elevated plaza. One of the mounds is a presumed residential mound that is L-shaped and located in the northwest corner of the patio, the other a large temple-

like structure on the east side of the courtyard. Excavations in the middle of the courtyard area indicate that the plaza is artificially elevated. The construction sequence is ballast stone fill covered by clay, then a layer of cobble, smaller fill material, then *sascab*. Above the *sascab* the sequence repeats – large cobble, small cobbles, then gravelly fill. Ceramics from the gravelly fill date the early Late Classic (Tepeu 1-2) while all ceramics below are Late Preclassic.

To determine the nature of access to this courtyard from the south where there is a significant change in elevation, excavations were conducted at the edge of the courtyard. Instead of a staircase, a vertical wall was uncovered consisting of well cut limestone blocks and a thick retaining wall made from unshaped stones, between which was fill material. This would indicate restricted access to the Central Courtyard from the south and only a narrow passageway into the space from the north.

### Southern Courtyard

The Southern Courtyard consists of a single mound on the west side of the patio below the elevated Central Courtyard. The patio area of the Southern Courtyard had been artificially leveled, much like the areas to the east and west of the group. Having stripped the sediment to bedrock, fill and midden material was placed over it, creating a level area onto which was constructed an earthen floor. This earthen floor is found throughout the courtyard and abuts with the Structure 6 platform.

Structure 6 is a masonry construction approximately 12m long on the long axis resting on a platform that extends between 30 cm (in the south) and 50 cm (in the north) in front of the walls (Figure 7). The doorway is almost 1.5m wide and rather than being situated in the center, is offset to the south. The walls of Structure 6 are thick like

Structure 1, on average 80 cm. Excavations have indicated a single large interior space and as of yet there is no interpretation for the function of this structure or why the door is offset.

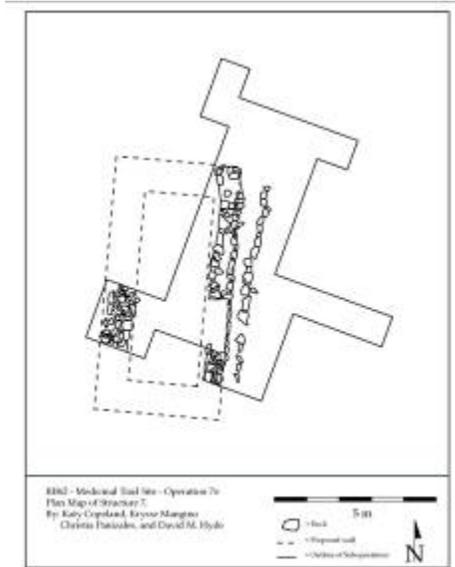


Figure 7. Plan Map of Structure 6.

### Structure 7

Structure 7 is located about 25m north of the main group near a large depression (Figure 8). Structure 7 is a low platform of approximately 80 cm in height and 9 m x 4 m horizontally with the long axis running E-W. Excavations around the platform have revealed an artificial pit approximately 2m in diameter, likely the result of quarrying, with a midden inside. The midden contained large amounts of charcoal, lithic debitage, a charred macrobotanical specimen (possibly a squash seed) and large ceramic sherds. Ceramics from the midden date from the Late Preclassic, the Proto Classic, Early Classic, and some Late Classic (Lauren Sullivan, personal communication 2006). The western portion of the midden deposit extends about 15 cm beneath the eastern wall of Structure 7, near the platform's northeast corner indicating that Structure 7 was constructed after the midden and pit were created.

In addition to the midden deposit, there are curvilinear scars on the exposed bedrock around and under the platform that are roughly the size and shape of a limestone block. Moreover, numerous cut stone blocks were stacked on the north side of the northeast corner of the platform with additional blocks slumped nearby suggesting quarrying.

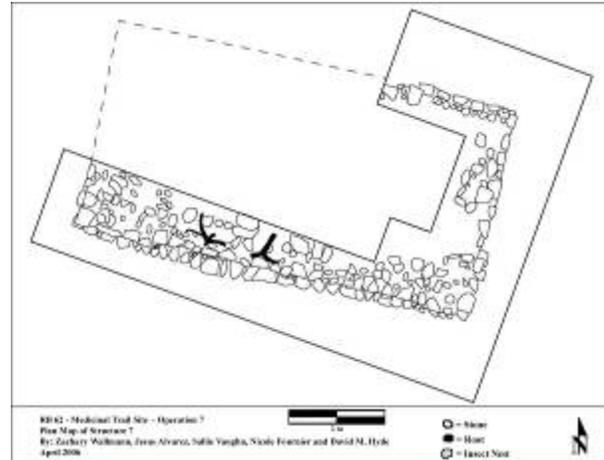


Figure 8. Plan map of Structure 7.

### Discussion

A few preliminary interpretations can be made regarding the inhabitants of Op7 based on the excavations described above. The group dates to the early Late Preclassic with some evidence of a possible Middle Preclassic occupation, through the Terminal Classic. The group is situated in a favorable hilltop setting with the slopes leading away from it extensively modified with features related to agricultural intensification. From at least the Late Preclassic important ceremonial functions were fulfilled at this locality based on the presence of a Round Structure and associated platform.

Numerous studies have demonstrated that good agricultural land is limited in the Maya Lowlands and were therefore occupied first in most areas (Fedick and Ford 1991; Furley and Newey 1979; Scarborough and Valdez 2003). As

populations increased, the founding households, like Op7, had an economic advantage over later arrivals due to their access and control over a non-replicable source of economic wealth, which led to the development of inequality and the emergence of a hinterland elite with limited social power (Hendon 1991; McAnany 1993).

Social status in Maya studies is often presented as either Elites, those in the large centers, and Commoners, those outside the major centers. However, social status is much more complex and should be viewed as a continuum with a wide range of variability in each category. Findings at Op7 fit well with indicators of elite social status among the Prehistoric Maya such as the presence of public architecture and labor intensive structures, the preferential location of settlement, and presence of exotic items like jade, obsidian, and shell (Marcus 2004; Table 1).

## **Conclusion**

Three years of excavation at Op7 of the Medicinal Trail Site in northwestern Belize has led to the identification of a long lasting hinterland elite settlement in the periphery east of La Milpa. All three courtyards and an isolated platform to the north have all been sampled to varying degrees. Late Preclassic material has been recovered from all areas of the site and most of the exotic materials date to the Late Preclassic and were recovered from standard contexts such as construction fill or midden. The economic wealth of the Op7 inhabitants was likely derived from the surrounding landscape's agricultural potential based on the extensive modifications identified on the slopes leading away from the group. Additional work remains to be done however. Additional survey is needed to more fully understand the settlement density at the Medicinal Trail Site and more testing

is required, particularly of the terraces, to obtain a chronology in order to more fully understand the development of the community.

*Acknowledgements:* We would like to thank the Institute of Archaeology, Belmopan, Belize for permission to conduct this research and for providing the opportunity to present it at the symposium they organized in 2006. Additionally we would like to thank Dr. Fred Valdez, Jr. of the University of Texas at Austin and Project Director of the Programme for Belize Archaeological Project under whom this research was funded and overseen. Thanks also to Lauren Sullivan who conducted the ceramic analysis for the Medicinal Trail site and to Kirsten Atwood, Maria Dawson, Sandra Dias, Micaela Obledo, Rissa Trachman and Marisol Cortes Rincon for their assistance in the field.

## **References Cited**

- Adams, R. E. W.  
1995 The Programme for Belize Archaeological Project: 1994 Interim Report, Introduction. In *The Programme for Belize Archaeological Project 1994 Interim Report*, edited by R. E. W. Adams and F. Valdez, Jr., pp. 1-14. The Center for Archaeology and Tropical Studies and The University of Texas at San Antonio.
- Brokaw, N., and B. Mallory  
1989 *Natural History of the Rio Bravo Resource and Conservation Area, Belize City*. MS on file at the Programme for Belize offices, Belize City, Belize.
- Chmilar, J.  
2005a *Ancient Maya Water Management: Archaeological Investigations at Turtle Pond, Northwestern Belize*. Master's thesis on file with the Department of Anthropology, University of Cincinnati.  
2005b Water Management at the Turtle Pond: A Preliminary Report of Excavations at RB62, Op 8. In *Programme for Belize*

- Archaeological Project: Report of Activities from the 2004 Field Season*, edited by Fred Valdez, Jr., pp. 27-34. Occasional Papers, Number 4, Mesoamerican Archaeological Research Laboratory. The University of Texas at Austin.
- Dunning, N. P., S. Luzzadder-Beach, T. Beach, J. G. Jones, V. Scarborough, and T. P. Culbert  
2002 Arising from the Bajos: The Evolution of a Neotropical Landscape and the Rise of Maya Civilization. *Annals of the Association of American Geographers* 92:267-283.
- Farnand, D. M.  
2002 *Agricultural Formation Histories of Prehistoric Terraces of the Medicinal Trail Site, Northwestern Belize*. M.A. Thesis, Department of Anthropology, Division of Graduate Studies and Research of The University of Cincinnati.
- Ferries, L. C.  
2002 *Site Formation and Occupation History of the Medicinal Trail House Mound Group at the Programme for Belize Archaeological Project, Belize*. M.A. thesis, Department of Anthropology, Division of Research and Advanced Studies of The University of Cincinnati.
- Furley, P. A. and W. W. Newey  
1979 Variations in Plant Communities with Topography over Tropical Limestone Soils. *Journal of Biogeography* 6:1-15.
- Healy, P.F., J.D.H. Lambert, J.T. Arnason, and R.J. Hebda.  
1983 Caracol, Belize: Evidence of Ancient Maya Agricultural Terraces. *Journal of Field Archaeology* 10: 397-410.
- Hendon, J. A.  
1991 Status and Power in Classic Maya society: An Archaeological Study. *American Anthropologist* 93:849-918.
- Houk, B. A.  
1996 *The Archaeology of Site Planning: An Example from the Maya Site of Dos Hombres, Belize*. Ph.D. dissertation, Department of Anthropology, The University of Texas at Austin.
- 2000 An Introduction to the 1998 and 1999 Seasons. In *The 1998 and 1999 Seasons of the Chan Chich Archaeological Project*, edited by B. Houk, pp. 1-14. Papers of the Chan Chich Archaeological Project, Number 4. Mesoamerican Archaeological Research Laboratory, The University of Texas at Austin.
- Marcus, J.  
2004 Maya Commoners: The Stereotype and the Reality. In *Ancient Maya Commoners*, edited by J. C. Lohse and F. Valdez, Jr., pp. 255-283. University of Texas Press, Austin.
- McAnany, P. A.  
1993 The Economics of Social Power and Wealth among Eighth-Century Maya Households. In *Lowland Maya Civilization in the Eighth-Century A.D.*, edited by J. A. Sabloff and J. S. Henderson, pp. 65-90. Dumbarton Oaks, Washington D. C.
- Me-Bar, Y.  
2005 Excavation in a Depression at the Medicinal Trail Site: 2004. In *Programme for Belize Archaeological Project: Report of Activities from the 2004 Field Season*, edited by Fred Valdez, Jr., pp. 15-26. Occasional Papers, Number 4, Mesoamerican Archaeological Research Laboratory. The University of Texas at Austin.
- Robichaux, H. R., A. Miller, E. Roberts III, C. Pruett, B. Smyth, T. O'Brien, F. Valdez, Jr., and R. Valdez  
2001 Preliminary Report of the 2001 Season of the Punta de Cacao Project. Manuscript of file, University of the Incarnate Word, San Antonio, Texas.
- Scarborough, V., and F. Valdez, Jr.  
2003 The Engineered Environment and Political Economy of the Three Rivers Region. In *Heterarchy, Political Economy, and the Ancient Maya: The Three Rivers Region of the East-Central Yucatán Peninsula*, edited by V. L. Scarborough, F. Valdez Jr., and N. Dunning, pp. 3-13. The University of Arizona Press, Tucson.

---

## 20 *INVESTIGATIONS OF AKAB MUCLIL: A LATE HINTERLAND SETTLEMENT IN NORTHWESTERN BELIZE*

*Antonio E. Padilla, Molly Morgan and Jon C. Lohse*

---

*During the 2005 season, investigations were carried out at the site of Akab Muclil, a corporate group cluster located in an environmentally diverse area close to the Rio Bravo and adjacent wetlands. Following the premise that political economies are rooted in local traditions, research was focused at understanding social and political dynamics of a hinterland settlement that potentially maintained ties with nearby centers such as Blue Creek and Gran Cacao. Findings reveal patterns of household practices and growth beginning in the Early Classic and continuing through the Late to Terminal Classic and into the Early Postclassic.*

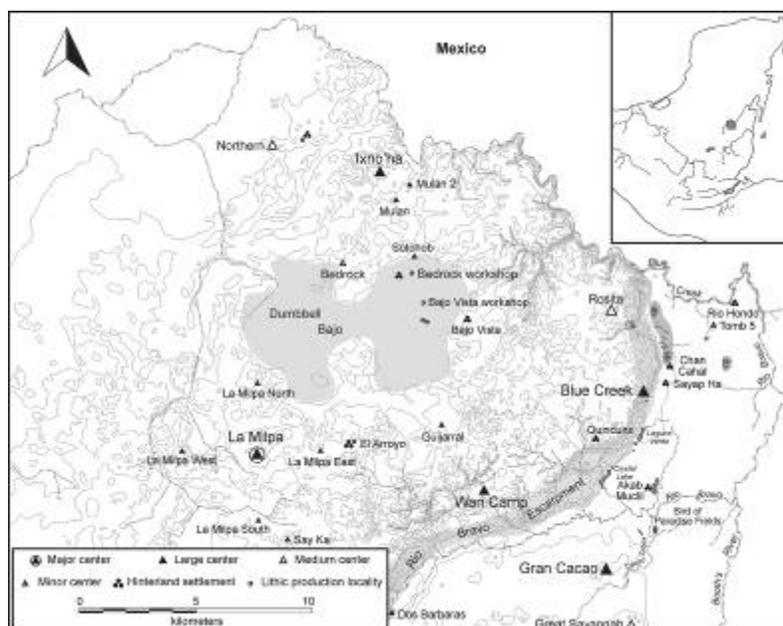
### **Introduction**

During the Terminal Classic many sites in the Southern lowlands experienced a reorganization or restructuring event. A decline in monumental construction, a depopulation of the area, an alteration of elite power, and changes in material assemblages characterized this change. (Chase and Rice 1985). Several scholars hypothesize that during this period there was a “collapse” or “transition” that led to the depopulation of large ceremonial sites in the Southern lowlands and the growth of sites in the Northern lowlands (see Sharer 1996; Traxler 2006). This phenomenon is seen in the archaeological record with the decline of major powers in the Southern lowlands such as Tikal and Calakmul and the rise of powers to the north such as Chichen Itza (Martin and Grube 2000; Sharer and Traxler 2006). Such transitions mark the beginning of the Postclassic period in Belize and most of the Maya world, (Sharer and Traxler 2006).

Many, though not all Postclassic sites located in the Northern lowlands are situated in and around coastlines, islands, rivers, and lakes or lagoons (Chase and Rice 1985). This case also holds true for Postclassic sites found in Belize, such as communities at Progresso Lagoon and

Laguna Seca (Masson and Rosenswig 1998), Santa Rita (Chase 1985), Laguna de On (Masson 1993), Lamanai (Pendergast 1981), and communities in the Stann Creek District (Graham 1985). According to Masson (1999:285), “Postclassic period aquatic settlement in the Maya lowlands was intimately connected to a circum-Yucatecan canoe trade that connected the Gulf of Mexico to Honduras, and appears to have been well-developed since at least the Terminal Classic period, as sites in coastal Belize suggest.” These patterns suggest that proximity to comestible aquatic resources, in addition to access to trade networks, was an important factor in locating Postclassic sites. So far, sites meeting these criteria are limited to the coastline and river systems of northern Belize. This is due to research oriented to the exploration of Postclassic sites, which traditionally are based in the northern region of Belize. There is not much known about the Postclassic in the Three Rivers Region of northwestern Belize.

During the 2005 season investigations were carried out at the site of Akab Muclil, a small, nucleated settlement cluster probably representing an extended family or corporate group residential cluster in northwestern Belize. The site is situated in an active environmental zone with a



**Figure 1.** Topographic map (20 m contour interval) of upper northwestern Belize, showing major sites and some of the region's hinterland settlements.

perennial wetland/swamp immediately to the east, the Rio Bravo escarpment 1 kilometer to the west, and the Rio Bravo 500 m to the south. The site lies almost equidistant between two larger ceremonial centers, Blue Creek approximately 4 km to the north and Gran Cacao to the south (Padilla et al. 2006a) (Figure 1)

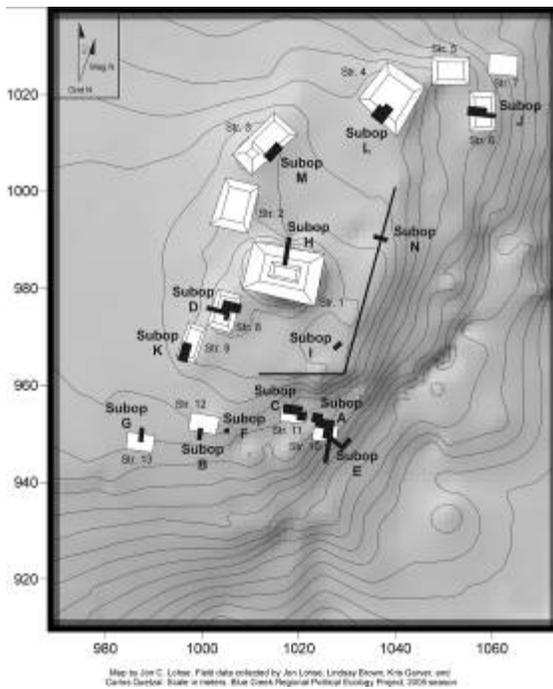
As our work progressed, evidence was revealed for an unexpectedly late date of occupation for much of the site. Like many sites in the region, some structures were established in the Early Classic and were maintained through the Late Classic and into the Terminal Classic. What was unexpected, though, was evidence for Early Postclassic occupations of some buildings, including both domestic structures and the temple that occupies the center of the cluster (Padilla et al. 2006a). This paper documents the chronological sequence of occupation of Akab Muclil, from the Early Classic through the Early Postclassic.

### Site Layout and Unit Placement

Akab Muclil was built on two platforms, a low one to the south that abuts a higher main platform at the center of the site (Figure 2). We identified at least 13 structures of varying height and dimensions on these two platforms. The main platform supports the heart of the site, including Structure 1, measuring roughly 4.5 m high; eight smaller buildings, Structures 2–9; and a small stela in the southeast corner. The southern platform supports two smaller structures (10 and 11) at the southeastern end, and what appear to be two ground-level platforms designated as Structures 12 and 13 at the southwestern corner. Excavations included a combination of vertical penetration to record construction histories and horizontal exposure to pursue architectural alignments and explore ceramic and faunal middens visible on the surface.

### Early Classic Occupation

Earliest evidence of site occupation is from the Early Classic, with the construction of Structure 1. Additional Early Classic ceramics were found beneath



**Figure 2.** Map of Akab Mucli showing location of excavations.

Structures 10, 11, and 12 on the lower southern platform, but these came from mixed construction fill contexts rather than discrete contexts. Considering the large size of many of the mounds at this site, particularly those located on the main platform, more Early Classic components than what we found are almost certainly located here.

Structure 1 is the largest structure of the site and stands 4.5 m high at the center of the main platform. A looter's trench penetrates the center of the northern face of the structure; excavations off to one side of this trench exposed various construction phases (Figure 3). The first of these phases consisted of a leveling event with a mixture of pebble fill and dark gray soil placed directly above modified bedrock, which was then covered with plaster, creating a platform standing 60cm high. A small burial crypt, unfortunately looted, is at the center of this platform. This phase was followed by further modification of bedrock into two

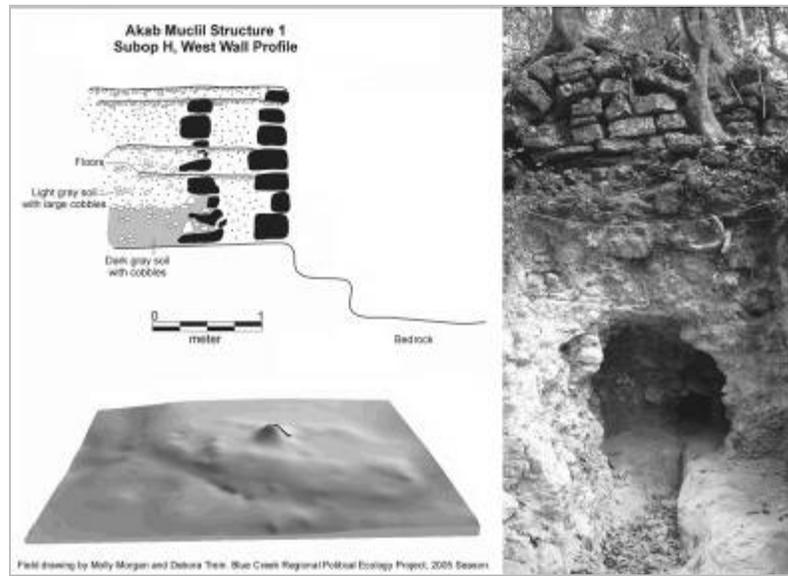
short steps located 60cm and 1.10 m north of this low platform. The initial platform was covered in the Early Classic with three other layers of construction fill and plaster floors, raising the platform a total of 30cm, 50cm, and 15cm, respectively. Lastly, the building's northern wall was extended, moving the edge of the platform 60cm northward, to the edge of the first carved bedrock step. The addition contained two plaster floors, and an outer masonry wall composed of cut limestone blocks. By the time these modifications were finished, the platform stood nearly 2m tall, and was capped with a hard plaster floor.

### Late and Terminal Classic Occupation

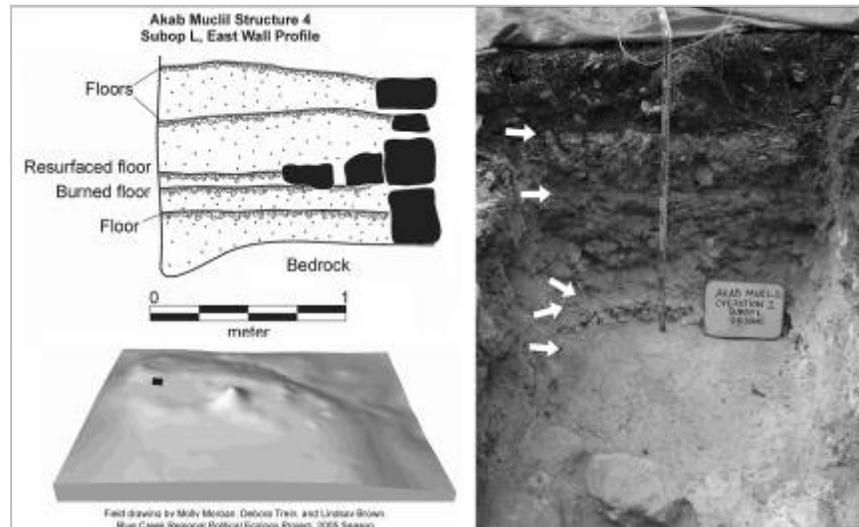
A number of constructions occurred in all parts of the site during the Late and Terminal Classic. These periods represent what might be considered the site's apogee or peak in terms of occupation and perhaps prominence in the region. Descriptions of these periods of the site history begin with Structure 3 on the northwest corner of the main platform and continue clockwise around the site, ending with Structure 8, immediately to the southwest of Structure 1. A huge tree was growing out of Structure 2 northwest of the main building, so no excavations took place there.

Structure 3 was also badly damaged by trees and roots, hence only preliminary excavations were possible. The building appears to have consisted of two separate rooms, at least one of which faced southeast directly to the central Structure 1. While no undisturbed contexts were recorded ceramics recovered from this unit indicate Late-to-Terminal Classic construction.

Structure 4 is on the northeast corner of the main platform, and like Structure 3 was aligned toward the central, Structure 1. Excavations exposed substantial Late and Terminal Classic construction on the



**Figure 3.** West Profile, showing Early Classic construction, Subop H, Structure 1 (site terrain map looking west). Photo facing North shows looted burial crypt above plastered platform



**Figure 4.** East profile, Late/Terminal Classic construction, Subop L, structure 4 (site terrain map looking east). (Photo) Facing North with arrows in photo pointing to the different floors.

southern end of this building — additional excavations into the center of this large mound would probably locate earlier contexts. Excavations revealed four phases, with each phase adding more cobble fill and a higher floor (Figure 4). The first construction was a platform 50cm above the uneven bedrock surface. Above this, another layer of cobble fill about 20cm thick

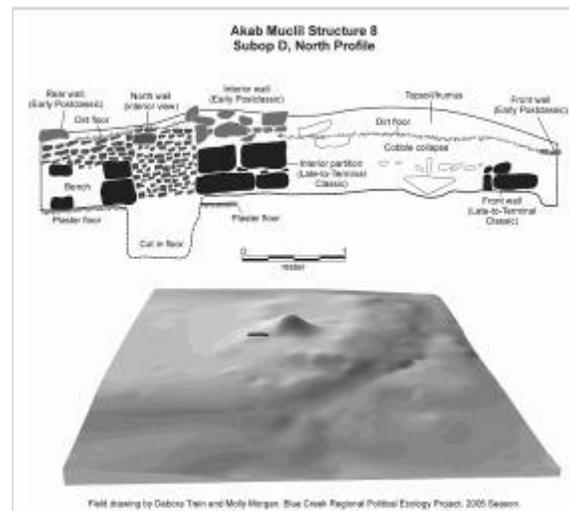
supported a plaster floor that showed evidence of burning. The third episode of cobble fill and reflooring raised the platform another 30cm. The last floor and corresponding height of the wall was 1.40 m above bedrock; the final wall facing the outer part of this building was of finely cut limestone blocks three courses high.

A 1x2 m unit was excavated in the small plaza area south of Structure 1 over what appeared to be a stela fragment. The monument was smoothed on all edges except the top and the northwest side, which were clearly broken. Its original height is unknown. When this stela fragment was found, it was oriented approximately 10 degrees W of N so that it perfectly faced the central Structure 1. It appears that this fragment was the stela butt that was placed in a 30cm deep hole in the platform. The hole was subsequently filled first with a soft silty soil, into which the monument was placed, and then packed with stones, pebbles, and tightly compacted soil. Based on ceramics from the stela cut, the dedication/placement occurred in the Late-to-Terminal Classic period.



**Figure 5.** Non-residential wall, looking east. Far eastern end is marked by arrow; wall makes northward turn at arrow. Exposure measures 8 m, scale extended at 2 m.

An interesting non-residential feature was discovered on the lower platform at the southeast corner of the site. Excavations in Subop E revealed a three course-high, east-west running wall seated above an eroded plaster floor. During excavations we exposed eight meters of a wall to a corner where it turned north (Figure 5). We exposed another two meters of this section before running out of time at the end of the season. Although the full extent of the wall is not determined, it is believed that it extended the entire length of the southern platform and may have served a defensive purpose.



**Figure 6.** North wall profile of Structure 8, Subop D (site terrain map looking north).

What we ended up calling Structure 11 (excavated in Subop C) is a nearly ground level feature just west and slightly north of the long wall described above. The poor condition of the structure and badly preserved stone alignments made it difficult to interpret its function. However, our excavations did recover a large concentration of terrestrial and aquatic fauna including jute shells, turtle, fish, and brocket deer, suggesting the structure might have been related to food processing.

The final structure that showed evidence of Late and/or Terminal Classic

occupation was Structure 8, a large residential structure located at the southwest corner of Structure 1 that opens into the small plaza area with the stela. This house was built of well-shaped limestone blocks and included a hard plaster interior floor. Excavations exposed the east-facing doorway and a complex sequence of constructions and modifications in the building's interior (Figure 6). A plaster-coated limestone bench had been built against the rear (west) wall, almost directly opposite the eastern doorway. At some point, this room (nearly 4m deep) was partitioned by an interior N-S running partition that was built on the plaster floor. Excavations between the partition and the bench revealed an elaborate ritual involving the burial of two adults (Burials 2 and 3), a young juvenile, and possibly a fourth individual.

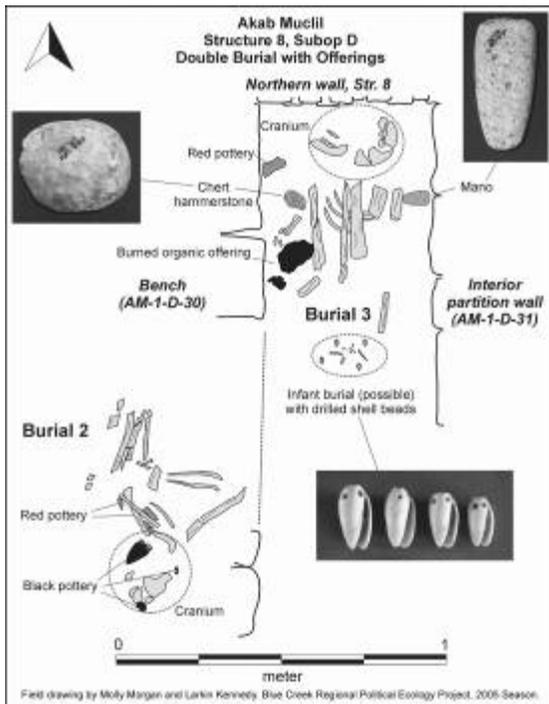


Figure 7. Plan of double burial in Structure 8 with grave offerings.

At some point in the Late Classic, the site's inhabitants removed part of the bench, and placed Burial 2 inside the bench

on the plaster floor. We recovered remains including unidentifiable bone fragments, as well as teeth, mandible, crania, and long bones. Burial 3 was placed on the plaster floor east of the bench and Burial 2, just inside the partition wall. Identifiable bones included ribs, long bones, crania, mandible, and teeth. Both interments were flexed, with their heads facing west. Burial 2, positioned slightly to the south of Burial 3, was aligned with its head to the south, while Burial 3 had its head to the north. Immediately south of Burial 3, a smaller bone cluster was identified that may indicate a third individual. Based on morphology of the teeth and bones, we believe that these represent the remains of a very young juvenile, though osteological analyses are necessary for a more secure assessment of age.

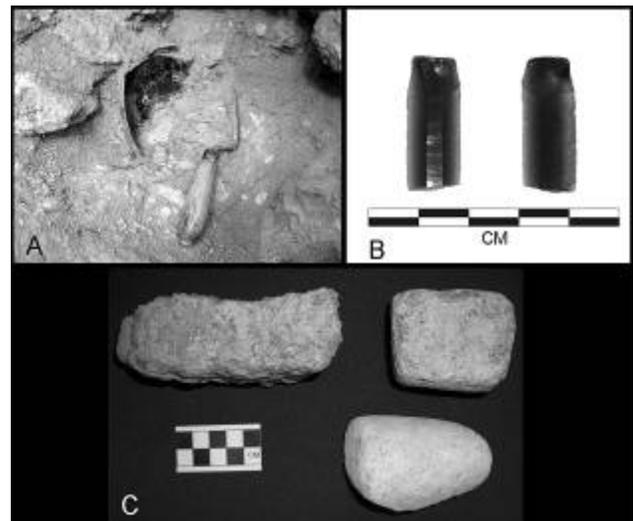


Figure 8. Artifacts recovered from Subop J, including small broken vessel, perhaps dedicatory offering, in construction fill (A); green obsidian blade segment (B), and ground stone fragment (C).

Grave objects located near Burial 3 included a limestone mano to the east; a rounded chert hammerstone to the west; and four shell beads to the south, near what may possibly be an infant burial. Lastly, a black carbonized substance was identified between the two burials that appears to be burned

organic substance. Burial 3 had been placed over a cut in the plaster floor (Figure 7). Excavations into this cut recovered only a few very badly preserved long bone fragments. It is believed that the cut in the plaster floor immediately preceded the two interments, which occurred as a single event. We can only speculate at present about whether the individuals in this deposit represent a single family or whether these individuals were unrelated. Nevertheless, these burials clearly represented an important moment in the history of Structure 8. Their interment in a single event, together with the careful positioning of the bodies, raises the possibility that they were sacrificial offerings marking an important event.

### **Early Postclassic Occupation**

Not much is known of the Postclassic in northwestern Belize. Laura Levi (1994) described some looted vessel fragments recovered from Gran Cacao as possibly Postclassic, and minor visitations have been noted at Chan Chich (Guderjan 1991), and Dos Hombres (Houk 1996). Visitations to La Milpa appear to have been slightly more substantial, and are noted by the presence of possible squatters' remains in the main plaza and the resetting of a number of the sites twenty stelae (Hammond and Bobo 1994). However, to date no significant residential settlements have been identified from this time period in the region. At Akab Muclil, the majority of the structures located on the main platform contain at least one construction phase dating to the Early Postclassic, while discrete contexts from this period were also recognized to the northeast of the main platform and on the lower platform to the south.

Structure 1, the main temple in the center of the site, has significant Postclassic additions. These additions included a thick

(15-20cm) packed marl floor over bedrock in front of the structure, and a large frontal staircase leading to the structure's summit, which supported a small room. Jambs to either side of the doorway into this chamber were partially visible at the margins of the looter's trench. After the room had filled in with building collapse, suggesting a brief hiatus in occupation or use of the structure, the entire building was "capped" with very large roughly cut limestone boulders. Since the lowest plaster floor level contained diagnostic Early Postclassic ceramic sherds mixed with some Late/Terminal Classic types, this final episode is also attributed to the Early Postclassic. It remains for future excavations to determine when the summit structure was built, or what happened to this building during the Late and Terminal Classic.

At Structure 4, at the northeast corner of the main plaza, excavations penetrated layers of collapsed cobbles in front of (to the south) the building. We exposed a one-course high step below this collapse that extended from the base of the southern wall out into the main plaza. The collapse contained a mixture of Late-to-Terminal Classic and Early Postclassic period ceramics, suggesting continued occupation and use of the building. The step abuts the wall and was clearly a later architectural addition. Ceramics in the fill of this step include Early Postclassic types.

Structure 6, in a small patio at the far northeastern corner of the site, appears to have been built entirely in the Early Postclassic. Excavations here revealed a front (western) wall facing a small courtyard, and a back (eastern) wall facing off of the side of the site's main platform. Both walls were built of a single course of crudely shaped limestone blocks. Some burned cobbles were identified the west of the structure. A heavily utilized blade segment of green obsidian was recovered

here; this is the only piece of green obsidian found at the site. Also, a ground stone fragment of granite from the Maya Mountains was recovered, indicating that some long distance trade routes remained active in the region. Excavations also recovered a small fragmented vessel included in the fill, perhaps placed as a dedicatory offering (Figure 8).

Back at the far southeast corner of the site, our excavations in Subops A and E exposed what appeared to be a collapsed structure. Buried amid loose cobbles and humus, we found low southern (back) and northern (front) walls sitting on a compact dirt floor. Ceramics associated with these features were from the Late, Terminal, and Postclassic periods. This low building, which we interpret to have been a house, was built over the collapsed remains of the long non-residential wall we described earlier. The collapse separating the two constructions, plus the dramatic change in implied function, suggest that some hiatus separated the two constructions.

About 20 meters to the west, excavations into what seemed from the surface to be a thin deposit of ceramics and faunal material exposed a dense midden of mixed ceramics from Late-to-Terminal Classic and Early Postclassic all the way down to bedrock, nearly a meter and a half. Dating the components of this part of the site is somewhat difficult. Most of the ceramics were Terminal Classic types, though Early Postclassic sherds were recovered from every lot, sometimes in low frequencies, all the way down to the bottom of our excavations. A ground-level (non-raised) platform with a low two-course retaining wall was also exposed in this unit. It is not known whether this structure was a house or served an ancillary purpose. Fauna from the midden included turtle, aquatic shells, peccary, and both white tail and brocket deer. Some bones exhibit cut marks.

Just a few meters west of this unit, another possible ground-level structure, Structure 13, was exposed in Subop G. Excavations here removed the topsoil and humus, exposing what appears to be only faint stone alignments. Early Postclassic sherds covered this part of the site.

Moving back to the main platform, Structures 8 and 9 also have Early Postclassic components. Excavations into Structure 9 consisted only of stripping topsoil; we recorded an E-W running wall of the structure and a second, lower wall that looked like the edge of an underlying supporting platform. Fragments of a badly preserved skeleton were recovered from the topsoil of this unit- this was labeled Burial 1, though does not represent a formal interment. It's even possible that this individual is historic in age, though no plastic or metal objects were found here. Pottery from this limited excavation was a mixture of all time periods from the Preclassic through the Early Postclassic.

Structure 8, with the elaborate Late Classic ritual burial deposit, also had an Early Postclassic house built at the surface. Front (east) and rear (west) walls were exposed, defining a room that measures about 5 meters wide. This house was built over the collapsed soil and cobbles of the earlier Late-to-Terminal Classic dwelling, suggesting a hiatus between occupations.

## Conclusions

The earliest confirmed occupation at Akab Muclil takes place during the Early Classic. Preceramic sherds were recovered from fill contexts, though no secure deposits from this time period were recorded. We know that by the Early Classic, and possibly the end of the Early Classic, this site appears to have been an important settlement in the hinterlands between the larger centers of Blue Creek and Gran Cacao.

As with most other sites in the region, the peak in occupation occurred in the Late to Terminal Classic. The main building, Structure 1, was probably added onto at this time, though our exposures did not record specific architectural additions. What we did see were several houses arranged around the main plaza and its central pyramid, establishing a site plan that later inhabitants of the site would preserve and maintain. Most occupation took place on the main platform though activities that included possible food-preparation areas and trash deposits were also conducted on the lower, southern platform.

We have evidence of elaborate domestic rituals involving multiple burials during the Late Classic. Strong directional symbolism is implied by the alignments of the interments, with north and south orientations to the east and west, respectively, representing up and down. It is possible that this deposit was intended to reflect the movement of the sun around the earth's plane. This potent symbolism is seen elsewhere in Maya sites and art, though has been recorded only infrequently in a common domestic setting such as this. Other material evidence from the site indicates more typical domestic activities—grinding implements; utilitarian bifaces, hammerstones, and recycled stone tools; heavily utilized obsidian blade fragments; and patterned data suggesting food preparation.

The long stonewall bounding the site's south side during the Terminal Classic perhaps tells us something of regional stability at this time. This site's remote setting probably provided access to diverse environments and lots of food resources - we see evidence for this in the faunal record. However, it also would have left these people somewhat vulnerable in the event of social unrest or even hostilities. We have no firm evidence for violence at the site, but

our data do imply that security and defensibility were important considerations in the Terminal Classic.

Also for the Terminal Classic, the setting of the low, unadorned stela is potentially significant. If nothing else, it suggests that site occupants were heavily invested in the sanctity of this location. We suggest that this stela tells us something about the reduced political weight or importance of nearby centers.

Akab Muclil is believed to be the first recorded Early Postclassic occupation site in the region. Identifying buildings from this time period is difficult for at least two reasons: first, not all Postclassic constructions utilized well-cut stone blocks, sometimes making them hard to distinguish from other rock outcrops. Second, a thin sheet midden of Postclassic pottery seems to overlie almost the whole site. Unlike earlier inhabitants, later occupants at the site appear to have been very messy.

Most Postclassic constructions occurred directly on top of earlier buildings; Structure 6 to the northeast is the exception to this. Only in Structure 4, though, do we have a strong case for occupational continuity between these two periods. Perhaps most of the site was abandoned by the end of the Terminal Classic, and then reoccupied a short time later. Future excavations will resolve this question.

Our work also indicates that future research in the region should consider environmentally diverse settings such as this one when searching for other Postclassic habitation. So far no evidence indicates that people were still living in towns and cities that were abandoned by the Terminal Classic. Instead, data reflect brief pilgrimages and visitations—squatting and stela resetting at La Milpa (Hammond and Bobo 1994) and the small offerings at Chan Chich (Guderjan 1991) and Dos Hombres (Houk 1996) reveal the temporary nature of

these revisits (Padilla et al. 2006b). One pattern that seems to be emerging, then, is that after the collapse of urban centers, at least some hinterlanders either stayed or returned to the region to continue their lives as best they could. Larger, central places remained important as reminders of the past, though in some places rural traditions persisted a century or more after urban sites were abandoned.

## References Cited

- Chase, Arlen F, and Prudence M. Rice (editors)  
1985 *The Lowland Maya Postclassic*. University of Texas Press, Austin.
- Chase, Diane Z.  
1985 Ganned But Not Forgotten: Late Postclassic Archaeology and Ritual at Santa Rita Corozal, Belize. In *The Lowland Maya Postclassic*, edited by Arlen F. Chase and Prudence M. Rice, pp. 104–125. University of Texas Press, Austin.
- Graham, Elizabeth A.  
1985 Facets of Terminal to Postclassic Activity in the Stann Creek District, Belize. In *The Lowland Maya Postclassic*, edited by Arlen F. Chase and Prudence M. Rice, pp. 215–230. University of Texas Press, Austin.
- Guderjan, Thomas H.  
1991 Chan Chich. In *Maya Settlement in Northwestern Belize: The 1988 and 1990 Seasons of the Rio Bravo Archaeological Project*, edited by T. H. Guderjan, pp. 35–50. Maya Research Program and Labyrinthos, California.
- Hammond, Norman, and Matthew R. Bobo  
1994 Pilgrimage's Last Mile: Late Maya Monument Veneration at La Milpa, Belize. *World Archaeology* 26:19–34.
- Houk, Brett A.  
1996 The Archaeology of Site Planning: An Example from the Maya Site of Dos Hombres, Belize. Ph. D. dissertation, Department of Anthropology, University of Texas at Austin.
- Levi, Laura J.  
1994 Ceramics from RB-43. Collections from Looters' Trenches. In *Programme for Belize Archaeological Project 1993 Field Season*, edited by R.E.W Adams. University Texas at San Antonio
- Martin, Simon and Nikolai Grube  
2000 *Chronicle of the Maya Kings and Queens: Deciphering the Dynasties of the Ancient Maya*. Thames & Hudson Ltd, London.
- Masson, Marilyn A.  
1993 Changes in Maya Community Organization from the Classic to Postclassic Periods: A View from Laguna De On, Belize. Unpublished Ph. D. dissertation. Department of Anthropology, University of Texas at Austin.  
1999 Postclassic Maya Communities at Progreso Lagoon and Laguna Seca, Northern Belize. *Journal of Field Archaeology*, 26(3):285–306.
- Masson, Marilyn A., and Robert M. Rosenswig  
1998 *Belize Postclassic Project 1997: Laguna de On, Progreso Lagoon, Laguna Seca*. Occasional Publication of the Institute of Mesoamerican Studies No. 2. Institute of Mesoamerican Studies, Albany.
- Padilla, Antonio E., Molly Morgan, and Jon C. Lohse  
2006a Excavations at Akab Muclil, Northwestern Belize. In *Final Season Summaries of the Blue Creek Regional Political Ecology Project: 2005 Investigations in Upper Northwestern Belize*, edited by Jon C. Lohse, pp. 12–39. Maya Research Program, Ft. Worth, and The University of Texas at Austin.  
2006b Investigations of Akab Muclil: A Hinterland Site in Northwestern Belize. Paper presented at the 71<sup>st</sup> Annual Meeting of the Society for American Archaeology, April 26–30, San Juan, Puerto Rico.
- Pendergast, David M.  
1981 Lamanai, Belize: Summary of Excavation Results, 1974–1980. *Journal of Field Archaeology* 8(1):29–53.